COMMENTS	RESPONSES
119. Cont. Operating Co., P.C. Bernal #4 have all been approved by NPS. In addition, the NPS states in the EA for Famcor Oil, Inc. Roberts/Duke #1 Flowline, on page 15, that "19 directional wells were drilled from surface locations outside the Preserve to reach bottomholes inside the Preserve." NPS must state clearly which wells have been approved, which have been drilled, and which are still going through the approval process.	
120. 2) **On pages 3-4-3-7, Table 3.2, Nonfederal Oil and Gas Operations,** eight well sites are listed as undergoing reclamation. These well sites include: a. Caskids Operating Co., W.R. Carr #1, which has been undergoing well plugging and or reclamation since 1995 **(10 years);** b. Hanson Production Co., Mann Fee #307-1, which has been undergoing well plugging and or reclamation since 1997 **(8 years);** c. Merit Energy Co., James Rafferty Fee #1, which has been undergoing well plugging and or reclamation since 2001 **(4 years);** d. Merit Energy Co., James Rafferty Fee #1-N, which has been undergoing well plugging and or reclamation since 2001 **(4 years);** e. Merit Energy Co., M.J. Cunningham #5, which has been undergoing well plugging and or reclamation since 2001 **(4 years);** f. Merit Energy Co., James Rafferty Fee #7, which has been undergoing well plugging and or reclamation since 2001 **(4 years);** e. Murphy Exploration and Production Co., L.L. Williams #2, which has been undergoing well plugging and or reclamation since 1995 **(10 years);** f. Buford Curtis, Inc., James Rafferty Fee #1, which has had the well plugged since 2002 but no Plan of Operations has been submitted or approved **(3 years)** How much time does NPS allow an operator to reclaim a well site? This DOGMP/DEIS must have a discussion about this issue and why it is taking more than 4-10 years to reclaim some wells. A review of the problems that NPS has had regarding reclamation as well as the solutions that NPS has developed to address these problems must be in the DOGMP/DEIS so the public can review, comment, and understand what NPS's policy will be after the DOGMP/DEIS is approved. Decision-makers also need to know this information.	**120.** See Responses 31, 119, and 124. Please note that the period of time required for reclamation differs from site to site. It may require longer periods of time for a site to reach full recovery to pre-disturbance conditions.
121. 3) **On page 3-5, Table 3.2, Nonfederal Oil and Gas Operations,** Comstock Oil and Gas, Inc., BSMC Unit D #1, in the "Remarks" column, NPS left out the word "outside" at the end of the phrase in the box.	**121.** This was corrected in the Final Plan/EIS.
122. 4) **On pages 3-6 and 3-7, Table 3.2, Nonfederal Oil and Gas Operations,** for the Litchfield Production Co., Campbell #2 and the Reid Production Co., Campbell #3 wells the NPS has stated that these wells have been suspended since January 30, 1991 and February 5, 1991, respectively. The NPS should discuss what suspended means, how long a well is allowed to be suspended, and what is the actual status of these wells. What is NPS's policy on suspended wells?	**122.** These operations were suspended because the operators did not have approved plans of operations to serve as access permits as required under 36 CFR § 9.32(a). A suspended operation means the well is shut-in and locked. A well can remain shut-in for many years, as long as the operator adheres to Railroad Commission of Texas' Statewide Rules which administers a permit program for shut-in wells and governs maintenance and routine down-hole mechanical integrity testing.

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123. 5) **On page 3-7, Table 3.2, Nonfederal Oil and Gas Operations,** NPS does not state whether the Milestone Operating Inc., William M. Rice Institute B-5; the Premium Exploration Co., ARCO Rafferty #1A; Premium Exploration Co., James Rafferty Fee #3; Reid Production Co., Campbell #4; and the Reid Production Co., Campbell #3 are inside or outside the BTNP. This information must be in the DOGMP/DEIS.	**123.** These wells are all located inside the Preserve. See also Responses 31 and 119.
124. 6) **On page 3-9, Plugged and Abandoned Oil and Gas Wells,** NPS states that two wells sites have "documented contamination by saltwater, heavy metals, and hydrocarbons". Which well sites are these? What is their current disposition? When will they be reclaimed? What is NPS's policy on contaminated well sites?	**124.** The fourth paragraph describes the ongoing investigation of contamination at abandoned oil and gas sites in the Preserve; therefore, the last sentence of the 2nd paragraph was deleted in the Final Plan/EIS.
125. 7) **On page 3-9, Plugged and Abandoned Oil and Gas Wells,** NPS states that two wells "are located in the Neches River, approximately 40 feet from the eastern bank. Removal of the well casings in these wells and setting the surface plug to a depth of 50 feet below the surface to meet NPS requirements remains problematic due to engineering, logistical, and financial constraints." The U.S. Forest Service plugged two wells in the Upland Island Wilderness Area in the late 1990s because the wells were leaking brine and or oil. EPA and the Railroad Commission acted on one of the wells due to the threat to water quality. NPS should contact EPA and then discuss its options of plugging these wells as soon as possible.	**125.** The wells referred to were plugged by Marshall Petroleum in January 1986. In or about 1989, a severe flood event changed the course of the Neches River, exposing the surface casings of the two wells. The company, at the request of the NPS, hired a consulting engineer to develop a plan of operations to re-enter the wells via a waterborne operation, deepen the surface plugs, and cut the well stems at the river bottom. During the scoping process on the Plan, Marshall Petroleum not only contacted the U.S. Environmental Protection Agency, but the U.S. Fish and Wildlife Service, the U.S. Coast Guard, U.S. Army Corps of Engineers, Jasper County Judge Joe N. Polk, the Texas Railroad Commission, the Texas Natural Resources Conservation Commission, and the Texas Parks and Wildlife Department among others. According to the Texas Railroad Commission, the wells were properly plugged and abandoned according to Statewide Rules. Also, the Texas General Land Office has stated that Marshall Petroleum no longer owns the wells, and the Texas Parks and Wildlife Department expressed concerns about the planned use of high explosives to cut the surface casings at the river bottom.
126. 8) **On page 3-9, Plugged and Abandoned Oil and Gas Wells,** the NPS states that it has requested funding to delineate and characterize contamination of well sites. NPS should state and discuss the approximate cost to delineate and characterize all well sites of interest; how long this is estimated to take; what it will take to clean-up all well sites of interest; an estimate of the costs; and what is NPS's policy on cleaning up contaminated well sites.	**126.** The Preserve is using available funds to characterize and prioritize abandoned sites in the Preserve where there is no responsible party. All of the sites pre-existed the establishment of the Preserve. It is impossible to estimate the cost for the full characterization, remediation and reclamation of these sites because initial characterization is needed to determine whether more extensive testing is warranted.
127. 9) **On page 3-11, Table 3.3, Tow Dimensional and Three-Dimensional Seismic Surveys,** NPS fails to provide to the public the total number of miles of vegetation cut due to seismic surveys. The NPS uses two different units of measure (feet and square miles) that measure two different measures (length and area) even though the column for "Total Line Length" states plainly that the numbers are to be in "(Feet)". Because of this problem It is difficult to understand how many total feet and miles have been cut in BTNP due to seismic surveys. The Sierra Club added together the total line length in feet provided by the NPS in this table. The total line length in feet comes to 312,060 feet or 59.07 miles. The Sierra Club added together the total square miles of line length provided by the NPS in this table. This total line length in square miles comes to 77 square miles. The Sierra Club requests that NPS use the same unit of measure (feet) for this table in the column labeled (Total Line Length (Feet)" and convert 77 46	**127.** Two-dimensional (2-D) seismic surveys are measured in linear feet; 3-D seismic surveys are measured in areal extent, i.e., in square miles. Table 3.3 was divided into two separate tables, one for 2-D surveys and one for D-3 surveys, in the Final Plan/EIS.

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127. Cont. square miles to feet so that the public can understand the magnitude of impacts that have occurred to BTNP due to the cutting of seismic surveys.	
128. 10) **On pages 3-11 through 3-13, Table 3.4, Existing Transpark Oil and Gas Pipelines within Big Thicket National Preserve,** it is of great concern to the Sierra Club that the NPS does not know the date of construction for all pipelines in BTNP. According to this table the NPS does not know the date of construction for: a. 24. Chevron Pipe Lone Company, Not in Service b. 28. Sun Pipe Line Company, Abandoned c. 31. Unknown, Unknown d. 43. Mobil Pipe Line Company e. 56. El Paso Field Services f. 57. Black Lake Pipeline g. 1. Houston Pipe Line Company The NPS must estimate the age of the seven unknown pipelines so that the public understands and can review, comment on, and understand this information. Decision-makers also need to know this information.	**128.** The table was updated in the Final Plan/EIS. The age of some of the pipelines is still unknown; however, it is known that these pipelines were constructed prior to the establishment of the Preserve in 1974.
129. 11) **On pages 3-11 through 3-13, Existing Transpark Oil and Gas Pipelines within Big Thicket National Preserve,** NPS must define what it means by **"Abandoned"** and **"Not in Service"** so the public can review, comment on, and understand what these terms mean. Decision-makers also need to know this information.	**129.** The term "Abandoned" denotes a permanent cessation of operations. "Not in Service" denotes the pipeline is not active, but has the potential to be brought back into active service.
130. 12) **On page 3-12, Existing Transpark Oil and Gas Pipelines within Big Thicket National Preserve,** the Sierra Club is concerned that NPS does not know the operator, product, size, and date constructed of the pipeline labeled 31. Without this basic information how can NPS determine the risk of the pipeline leaking or if it has leaked the danger it poses to natural resources? NPS must find out this information so the public can review, comment, and understand this information. Decision-makers also need to know this information.	**130.** See Response 128.
131. 13) **On pages 3-11 through 3-15, Existing Transpark Oil and Gas Pipelines and Associated Rights-of-Way,** NPS does not state the condition that each pipeline is in. For instance, two Crude Oil pipelines were constructed in 1929-1930 (8. Pure Transmission Company and 44. Unocol Corporation) which means they are 75 years old. There are 25 other pipelines that are at least 50 years old. The pipeline material used in the 1930's through the 1950's is not as good as the pipeline material that is used today. What is the lifetime of each pipeline; the material that was used to construct it; the condition of each pipeline; how often are the pipelines checked; and what are the results of the last integrity checks for each pipeline? NPS	**131.** Please refer to the section "Regulation of Transpark Oil and Gas Pipelines and Activities in Associated Rights-of-Way," on pages 1-9 and 1-10, that explains that the NPS has no authority to regulate the below-ground pipeline activities.

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131. Cont. needs to discuss in detail the condition of pipelines and how it will ensure that they do not leak. Relying on operators is not the way to ensure that leaks do not occur and pipelines remain in good condition.	
132. 14) **On pages 3-14 and 3-15, Administration of Nonfederal Oil and Gas Program,** NPS states that "additional staff support for the program is needed to ensure timely processing of plans of operations, and to protect Preserve resources and visitor experience." NPS does not discuss how many additional people are needed; what the additional staff will cost; and when the additional staff will be hired. This information must be placed in the DOGMP/DEIS so that the public can review, comment on, and understand it. Decision-makers also need to know this information. The Sierra Club is less concerned with ensuring the "timely processing of plans of operation" than with protecting BTNP natural resources and visitor safety and experience. The most important thing the NPS can do is protect BTNP resources from the impacts of oil/gas activities. NPS must make this statement very clear in the DOGMP/DEIS. Otherwise NPS will send the message that oil/gas operators can get away with doing less than the best.	**132.** Currently, there are no funds available to hire additional staff. In the future, if funding becomes available, an additional staff person could assist with processing new proposals, and monitoring operations.
133. 15) **On page 3-30, Hydrochemical Regime, Neches River,** NPS states that "Alkalinity appeared to peak in the fall; and sulfate and manganese concentrations seemed to reach the highest levels in the spring." What is the cause of these water quality problems? What is NPS doing to reduce or stop them?	**133.** The NPS disagrees with the commenters' characterization of "water quality problems." This paragraph is meant to describe the seasonal variation of the hydrochemical regime in the river, not to point out instances where water quality levels exceeded federal or state standards.
134. 16) **On page 3-34, Hydrochemical Regime for Menard Creek,** why are data "not available for Menard Creek from water quality assessment reports published by the Trinity River Authority? What will it take to acquire these data? Will NPS acquire and analyze these data?	**134.** The NPS cannot respond on behalf of the Trinity River Authority. At present, the NPS has no funding to conduct a water quality assessment for Menard Creek. The Preserve would conduct an assessment when this particular data need reaches a priority level over other Preserve data needs.
135. 17) **On page 3-47, Figure 3.4, Wetlands Map,** does not show any wetlands in the Loblolly Unit and the Hickory Creek Savannah Unit. The Sierra Club has visited the Loblolly Unit and the Hickory Creek Savannah Unit on a number of occasions. The Loblolly Unit has baygall and bottomland hardwood wetland vegetation types. The Hickory Creek Savannah Unit has baygalls and pitcher plant bog wetland types. Please note what is said on page 3-46 where National Wetlands Inventory maps underestimate wetlands in forested regions. This may explain why no wetlands are shown on Figure 3.4, Wetlands Map, for the Loblolly Unit and Hickory Creek Savannah Units.	**135.** See Response 109.
136. 18) **On page 3-50, Edge Habitat,** the NPS states that for the impacts due to edge effects that "there is no generally accepted threshold of significance." The Sierra Club disagrees. Studies have shown that the edge effect, in forests, extends about two or three tree lengths into the forest when considering changes in temperature, humidity, sunlight, and moisture retention in leaf litter. In addition	**136.** "Although edge effect is an important concept in wildlife management, and is often emphasized in wildlife management texts, relatively little empirical justification for edge effect is available." (Kroodsma, 1987) A substantial portion of the research done on edge effects comes from studies of birds. When considering edge effect on the nesting success of birds, a review of studies from a mix of habitat types in Central and North America, as well as Europe, found that, "Researchers investigating this question have been inconsistent in their experimental designs, making generalizations about edge effect patterns difficult." (Paton, 1994) Discounting the difficulty of generalization about edge effects, NPS feels that it is irresponsible to assume that studies of edge effects done elsewhere can be applied to the Preserve. There is evidence that, "Edge effects depend, at least in part, on the landscape context, indicating that

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136. Cont. the edge effect can be calculated, when dealing with roads or other linear clearings by calculating the number of miles of road/square mile of forest or other habitat.	results obtained from locally conducted studies should be evaluated in light of landscape-scale forest cover." (Donovan et al., 1997) There have been no detailed studies of edge effects in the Preserve. Also, adding to the problem of generalization even on a landscape scale, local factors have been shown to produce differences in edge effects. For example, whether an edge faces north or south was shown to affect edge effect penetration when studying floral species composition in North Carolina mixed hardwood forests. (Fraver, 1994)
137. 19) **On page 3-54, Paddlefish,** NPS states that Texas Parks and Wildlife Department (TPWD) has annual stocking of Paddlefish. The Sierra Club understands that the TPWD no longer is hatchery raising and stocking Paddlefish because previous stocking efforts have not succeeded and there is not enough spawning habitat to sustain a population especially with the impacts that dams have had and create as obstacles to Paddlefish migration.	**137.** The text refers to the recovery plan including annual stocking; however, TPWD is not stocking paddlefish in the lower Neches River. This was clarified in the Final Plan/EIS.
138. 20) **On page 3-59, Park User/Affinity Groups,** although NPS states that it consults with the Alabama and Coushatta tribes, in the past this has been discounted when dealing with slant wells drilled adjacent to BTNP. NPS must discuss how it will ensure that it fully consults with the Alabama and Coushatta tribes in the future and how this DOGMP/DEIS will change, improve, and assist in that process.	**138.** The NPS consults with the Tribes under Section 106 of the National Historic Preservation Act of 1966, as amended, as described on pages C-17 and C-18. Chapter 4, Environmental Consequences, analyzes impacts on cultural resources.
139. 21) **On page 3-64, Birding Hot Spots,** NPS states that the more sought after birds in BTNP include the "Red-cockaded Woodpecker". However, on page 3-53, NPS states that the RCW is no longer found in BTNP. Please clarify this statement.	**139.** Please see page 3-53 of the Draft Plan/EIS that describes that until the mid-1990's, active colonies of Red-cockaded Woodpeckers had been documented in the Big Sandy Unit; and that through pine forest regeneration and periodic prescribed fire, favorable habitat should be created so that this species could recolonize in the future. Therefore, while there are no known colonies of Red-cockaded Woodpeckers currently within the Preserve, many birdwatchers are still drawn to the area in hopes of sighting a Red-cockaded Woodpecker.
140. 22) **On page 3-68, Visual Quality, including Night Sky, as a Component of Visitor Experience,** NPS states that "Oil and gas operations ... are not expected to appreciably add to sky glow from outdoor lighting or air pollution." NPS does not say why this is true. Please provide a discussion of this statement as well as a definition for "appreciably add".	**140.** This statement was deleted in the Final Plan/EIS. It did not belong in this section of the Draft Plan/EIS. The assessment of effects is found in Chapter 4, Environmental Consequences.
141. 23) **On page 3-69, Visitor Perception of Oil and Gas Operations,** NPS states that "Overall, past and current levels of public use do not appear to have adversely affected Preserve resources, and conflict between public uses or between public uses and nonfederal oil and gas operations has been minimal." NPS provides no information on which to base this statement. The public has a right to review, comment on, and understand the bases for NPS analyses statements. NPS must provide the public with this information in this DOGMP/DEIS. Decision-makers also need to know this information.	**141.** The Preserve staff received a single complaint from a visitor many years ago regarding a well near the Turkey Creek Trail in the northern part of the Unit. This well is now gone.
142. 24) **On page 3-70, Visitor Perception of Oil and Gas Operations,** NPS states that "there have been few complaints registered at the Preserve about oil and gas operations." How many complaints have been registered? What were the complaints about? NPS needs to discuss clearly and fully what the public's concerns have been about oil/gas activities in BTNP.	**142.** See Response 141.
143. 25) **On pages 3-71 and 3-72, Wild Character – Solitude,** NPS only discusses "solitude" with respect to Wilderness designation, of which there is none in	**143.** See Responses 87 and 97.

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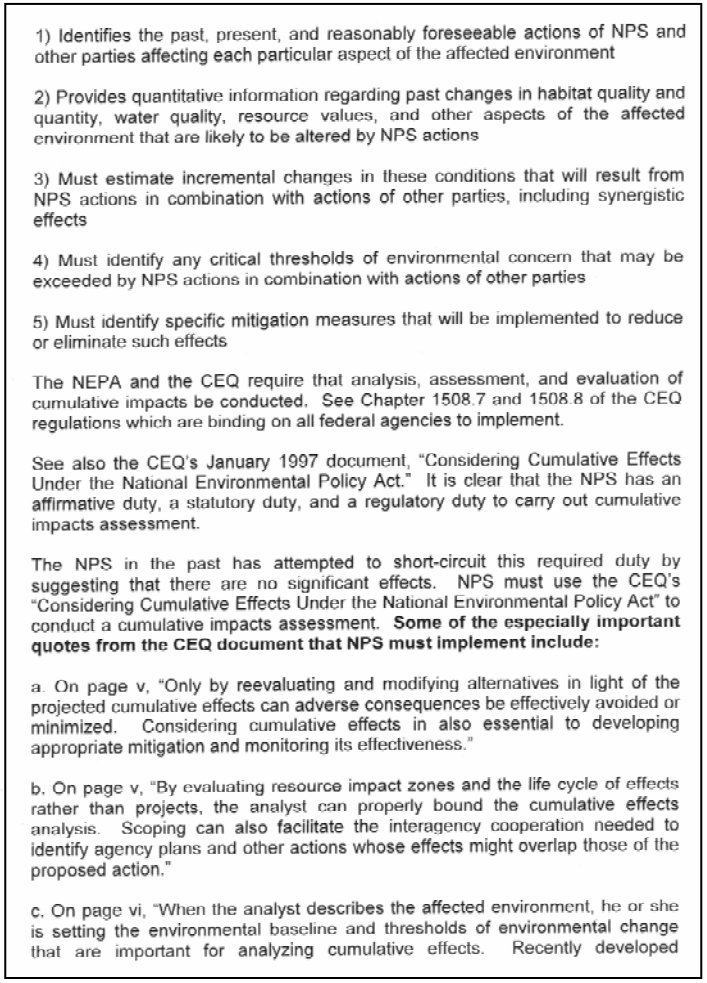
143. Cont. BTNP. People value "solitude" outside of Wilderness also. NPS must discuss the opportunities for "solitude" in BTNP that visitors can find and how oil/gas operations affect "solitude" currently and how they will in the foreseeable (cumulative impacts) future.	
144. 26) **On page 3-72, Adjacent Land Uses and Resources,** NPS does not discuss the foreseeable future impacts that development will have in East Texas and areas around the BTNP. We are seeing the urbanization of East Texas and in the next 15-20 years the effects of urbanization will get worse. The average size of a parcel of land in East Texas has dropped to 50 acres. With the divestment of 1.5 million acres by Louisiana-Pacific and International Paper in East Texas many of the parcels sold will be subdivided and developed. BTNP has expressed concern to the Texas Department of Transportation about the fragmentation and development influence that construction of a new and wider U.S. 69 will have on BTNP and particularly the Hickory Creek Savannah and Turkey Creek Units. NPS supported the recent acquisition of about 700 acres next to the visitor center which links it to Village Creek and the Turkey Creek Unit and thus protects this area from subdivision development. NPS must look at the most recent data on development in the BTNP area and discuss what the foreseeable future will look like including environmental impacts. This has not been done adequately on this page in this DOGMP/DEIS.	**144.** The cumulative impact analyses are found in Chapter 4, Environmental Consequences.
Chapter 4 – Environmental Consequences	
145. 1) **On page 4-8, Cumulative Impacts, Alternative A,** the NPS states that "there should be no cumulative adverse impacts on oil and gas development". This is not true. Implementation of Alternative A has resulted in the Sierra Club filing a lawsuit against the NPS which could result in the stoppage of all or a portion of the drilling that occurs in, under, or through the BTNP. In addition, the lawsuit will cost the NPS money to defend against and has brought adverse publicity to the NPS. The reinterpretation of the 9B regulations has resulted in uncertainty and poor decision-making. Sanchez has proposed the drilling of one well. Comstock proposes drilling three wells. Davis Brothers has drilled 4 wells and the NPS has proposed or approved 12 more wells for Davis. Many other wells have been drilled both in the BTNP and adjacent to it on private lands. Many pipelines, roads, logging operations, prescribed burning, and other actions have occurred in the past, present, and reasonably foreseeable future in BTNP and adjacent to BTNP but NPS has not assessed all the cumulative impacts of these actions in EAs in the past. **At minimum, NPS must prepare an adequate cumulative effects analysis that:** 50	**145.** Impacts on nonfederal oil and gas development were assessed in the Draft Plan/EIS because provisions in the plan could affect how, where and to what extent an operator could conduct oil and gas operations in the Preserve. The analysis area for this impact topic is Railroad Commission District 3 which includes 29 counties in East Texas. Through its analyses, the NPS has determined that the projected drilling activity in the Preserve would not have measurable cumulative impacts on the overall drilling activity in RRC District 3 (meaning minor or less effects) and therefore concluded that there should be no cumulative, adverse impacts on oil and gas development. The underlined text was corrected in the Final Plan/EIS, on the last line under the heading "Cumulative Impacts" (Alternative A) on page 4-7, in the Cumulative Impacts conclusion statement (Alternative A) on page 4-8, on the first line under the heading "Cumulative Impacts" (Alternative B) on page 4-9, in the Cumulative Impacts conclusion statement (Alternative B) on page 4-9, on the first line under the heading "Cumulative Impacts" (Alternative C) on page 4-11, and in the Cumulative Impacts conclusion statement (Alternative C) on page 4-11, to: "…negligible, cumulative adverse impacts…" The outcome of the lawsuit filed by Sierra Club does not limit or prevent the ability of the holders of nonfederal oil and gas rights under Big Thicket National Preserve to exercise those rights. Further, as noted above in Response 74, the District Court for the District of Columbia issued an order on September 1, 2005 in Sierra Club v. Mainella, (Civ. No. 04-2012, 2005 U.S. Dist. LEXIS 18911), affirming the NPS's interpretation of its regulations. This decision affirms to the public that the NPS is acting within the limits of its regulatory authority, which does not extend beyond park boundaries. With respect to cumulative impacts, the NPS has sufficiently discussed and analyzed them in the Draft Plan/EIS. The NPS included both quantitative and qualitative analysis of impacts. The NPS

COMMENTS	RESPONSES
145. Cont. 	performed a quantitative analysis where it had the specific information to do so. Some examples of the quantitative analysis performed in the Draft Plan/EIS include: 1) Chapter 3 includes 12 tables and 6 figures, to support narrative describing each of the impact topics assessed in this Plan/EIS. To list just some of these include: a table of total acreages of four slope classes by unit (0-3%, 3-5%, 5-12% and >12%), ambient sound levels at various locations in the Preserve along with a sound level comparison chart depicting how the recorded sound levels in the Preserve relate to sound level measurements at varying distances from a drilling rig and other equivalent sounds, visitor use statistics, wetlands, floodplains, and vegetation classes. 2) Chapter 3 also includes tables that list each existing oil and gas operation located inside or outside the Preserve that is extracting hydrocarbons from under the Preserve, transpark oil and gas pipeline segments, and 2-D and 3-D seismic surveys that have been conducted in the Preserve. Specific measurements are provided of the direct area of surface impacts from past activities that continue to have effects, existing activities, and reasonably foreseeable development to support impact analyses in Chapter 4. 3) Chapter 2 provides maps and acreages of Protected Areas and Special Management Areas. 4) Chapter 2 also describes the Reasonably Foreseeable Development scenario and provides specific acreages of anticipated direct disturbance for geophysical and drilling operations. Quantitative analyses are provided in the impact analyses in Chapter 4 as much as reasonably possible for a programmatic management plan. An example is under the topic "Visitor Use and Experience" where anticipated elevated noise levels from nonfederal oil and gas activities and other activities are provided to describe impacts. Where specific information was lacking to perform a quantitative analysis, the NPS believes that its qualitative analysis is adequate to satisfy NEPA. NPS technical specialists (regulatory specialists, petroleum engineer, petroleum geologist, resources specialists, etc.) listed in Chapter 6 of the Draft Plan/EIS provided input on the qualitative assessment of effects presented in the draft Plan/EIS. Also see Responses 69 and 173.

1) Identifies the past, present, and reasonably foreseeable actions of NPS and other parties affecting each particular aspect of the affected environment

2) Provides quantitative information regarding past changes in habitat quality and quantity, water quality, resource values, and other aspects of the affected environment that are likely to be altered by NPS actions

3) Must estimate incremental changes in these conditions that will result from NPS actions in combination with actions of other parties, including synergistic effects

4) Must identify any critical thresholds of environmental concern that may be exceeded by NPS actions in combination with actions of other parties

5) Must identify specific mitigation measures that will be implemented to reduce or eliminate such effects

The NEPA and the CEQ require that analysis, assessment, and evaluation of cumulative impacts be conducted. See Chapter 1508.7 and 1508.8 of the CEQ regulations which are binding on all federal agencies to implement.

See also the CEQ's January 1997 document, "Considering Cumulative Effects Under the National Environmental Policy Act." It is clear that the NPS has an affirmative duty, a statutory duty, and a regulatory duty to carry out cumulative impacts assessment.

The NPS in the past has attempted to short-circuit this required duty by suggesting that there are no significant effects. NPS must use the CEQ's "Considering Cumulative Effects Under the National Environmental Policy Act" to conduct a cumulative impacts assessment. **Some of the especially important quotes from the CEQ document that NPS must implement include:**

a. On page v, "Only by reevaluating and modifying alternatives in light of the projected cumulative effects can adverse consequences be effectively avoided or minimized. Considering cumulative effects in also essential to developing appropriate mitigation and monitoring its effectiveness."

b. On page v, "By evaluating resource impact zones and the life cycle of effects rather than projects, the analyst can properly bound the cumulative effects analysis. Scoping can also facilitate the interagency cooperation needed to identify agency plans and other actions whose effects might overlap those of the proposed action."

c. On page vi, "When the analyst describes the affected environment, he or she is setting the environmental baseline and thresholds of environmental change that are important for analyzing cumulative effects. Recently developed

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indicators of ecological integrity (e.g., index of biotic integrity for fish) and landscape conditions (e.g., fragmentation of habitat patches) can be used as benchmarks of accumulated change over time ... GIS technologies provide improved means to analyze historical change in indicators of the condition of resources, ecosystems, and human communities, as well as the relevant stress factors.

d. On page vi, "Most often, the historical context surrounding the resource is critical to developing these baselines and thresholds and to supporting both imminent and future decision-making."

e. On page vi "... the consequences of human activities will vary from those that were predicted and mitigated ... therefore, monitoring the accuracy of predictions and the success of mitigation measures is critical.

f. On page vi, "Special methods are also available to address the unique aspects of cumulative effects, including carrying capacity analysis, ecosystem analysis, economic impacts analysis, and social impact analysis.

g. On page vii, Table E-1, "CEA Principles ... Cumulative effects analysis ...Address additive, countervailing, and synergistic effects ... Look beyond the life of the action.

h. On page 1, "The range of actions that must be considered includes not only the projects proposal but all connected and similar actions that could contribute to cumulative effects.

i. On page 3, "The purpose of cumulative effects analysis, therefore is to ensure that federal decisions consider the full range of consequences of actions ... If cumulative effects become apparent as agency programs are being planned or as larger strategies and policies are developed then potential cumulative effects should be analyzed at that times.

j. On page 3, Cumulative effects analysis necessarily involves assumptions and uncertainties, but useful information can be put on the decision-making table now ... Important research and monitoring programs can be identified that will improve analyses in the future, but their absence should not be used as a reason for not analyzing cumulative effects to the extent possible now ... adaptive management provisions for flexible project implementation can be incorporated into the selected alternative."

k. On page 4, "The Federal Highway Administration and state transportation agencies frequently make decisions on highway projects that may not have significant direct environmental effects, but that may induce indirect and cumulative effects by permitting other development activities that have significant effects on air and water resources at a regional or national scale. The highway

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145. Cont.

and other development activities can reasonably be foreseen as "connected actions.

l. On page 7, "Increasingly, decision makers are recognizing the importance of looking at their projects in the context of other development in the community or region (i.e., of analyzing the cumulative effects) ... Without a definitive threshold, the NEPA practitioner should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant ... Cumulative effects results from spatial (geographic) and temporal (time) crowding of environmental perturbations. The effects of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the effect of the first perturbation."

m. On page 8, Table 1-2, lists 8 principles of cumulative effects analysis. **A summary of summary of these principles includes:**

1) Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions.

2) Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken no matter who has taken the actions.

3) Cumulative effects needs to be analyzed in terms of than specific resource, ecosystem, and human community being affected.

4) It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.

5) Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.

6) Cumulative effects may result form the accumulation of similar effects or the synergistic interaction of different effects.

7) Cumulative effects may last for many years beyond the life of the action that caused the effects.

8) Each affected resource, ecosystem, and human community must be analyzed in term of its capacity to accommodate additional effects, based on its own time and space parameters.

n. On page 19, "The first step in identifying future actions is to investigate the plans of the proponent agency and other agencies in the area. Commonly,

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145. Cont.

analysts only include those plans for actions which are funded or for which other NEPA analysis is being prepared. This approach does not meet the letter or intent of CEQ's regulations ... The analyst should develop guidelines as to what constitutes "reasonably foreseeable future actions" based on planning process within each agency ... In many cases, local government planning agencies can provide useful information on the likely future development of the region, such as master plans. Local zoning requirements, water supply plans, economic development plans, and various permitting records will help in identifying reasonably foreseeable private actions ... These plans can be considered in the analysis, but it is important to indicate in the NEPA analysis whether these plans were presented by the private party responsible for originating the action. Whenever speculative projections of future development are used, the analyst should provide an explicit description of the assumptions involved ... NEPA litigation ... has made it clear that "reasonable forecasting" is implicit in NEPA and that it is the responsibility of federal agencies to predict the environmental effects of proposed actions before they are fully known.

o. On page 23, "Characterizing the affected environment in a NEPA analysis that addresses cumulative effects requires special attention to defining baseline conditions. These baseline conditions provide the context for evaluating environmental consequences and should include historical cumulative effects to the extent feasible.

p. On page 29, "Lastly, trends analysis of change in the extent and magnitude of stresses in critical for projecting the future cumulative effects.

q. On page 29, "Government regulations and administrative standards ... often influence developmental activity and the resultant cumulative stress on resources, ecosystems, and human communities.

r. On page 31, "Cumulative effects occur through the accumulation of effects over varying periods of time. For this reason, an understanding of the historical context of effects is critical to assessing the direct, indirect, and cumulative effects of proposed actions. Trends data can be used ... to establish the baseline for the affected environment more accurately (i.e., by incorporating variation over time) ... to evaluate the significance of effects relative to historical degradation (i.e., by helping to estimate how close the resource is to a threshold of degradation) ... to predict the effects of the actions (i.e., by using the model of cause and effects established by past actions)."

s. On pages 38-40, "Using information gathered to describe the affected environment, the factors that affect resources (i.e., the causes in the cause-and-effect relationships) can be identified and a conceptual model of cause and effect developed ... The cause-and-effect model can aid in the identification of past, present, and future actions that should be considered in the analysis ... The cause-and effect relationships for each resource are used to determine the

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magnitude of the cumulative effect resulting from all actions included in the analysis ... one of the most useful approaches for determining the likely response of the resource ... to environmental change is to evaluate the historical effects of activities similar to those under consideration.

t. On page 41, "The analyst's primary goal is to determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative effects of other past, present, and future actions ... The critical element in this conceptual model is defining an appropriate baseline or threshold condition of the resource.

u. On page 43, "Situations can arise where an incremental effect that exceeds the threshold of concern for cumulative effects results, not from the proposed action, but the reasonably foreseeable but still uncertain future actions.

v. On page 45, "The significance of effects should be determined based on context and intensity ... Intensity refers to the severity of effect ... As discussed above, the magnitude of an effect reflects relative size or amount of an effect. Geographic extent considers how widespread the effect might be. Duration and frequency refers to whether the effect is a one-time event, intermittent, or chronic.

w. On page 45, "Determinations of significance ... are the focus of analysis because they lead to additional (more costly) analysis or to inclusion of additional mitigation (or a detailed justification for not implementing mitigation) ... the project proponent should avoid, minimize, or mitigate adverse effects by modifying alternatives ... in most cases, however, avoidance or minimization are more effective than remediating unwanted effects."

y. On page 51, "different resource effects that cumulatively affect interconnected systems must be addressed in combination."

The NPS must utilize the CEQ document referenced above to the maximum extent possible so that a full and legal cumulative impacts assessment is conducted.

There is no specific quantitative cumulative impact analysis for all past, present, and reasonably future foreseeable actions. NPS is deficient in its cumulative impacts assessment. What are the impacts from other oil/gas activities? What are the impacts from past logging? What are the impacts from past grazing? What are the impacts from roads? What are the impacts from prescribed burning? Where is an assessment, evaluation, and analysis that take all of these past impacts into account? NPS must prepare an EIS that assesses all cumulative impacts in addition to all potential impacts from each of the estimated 29 wells that will be drilled in the future plus all past and present impacts.

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2) **On pages 4-6, 4-8, 4-9, 4-11, 4-17 through 4-21, 4-27, 4-28, 4-30, 4-31, 4-34, 4-40, 4-43, 4-45, 4-46, 4-48, 4-49, 4-53, 4-55, 4-58, 4-60, 4-61, 4-66, 4-68 through 4-72, 4-79, 4-81 through 4-83, 4-85, 4-86, 4-93, 4-95, 4-97, 4-99, 4-100, 4-106, 4-109, 4-112, 4-113, 4-116, 4-120, 4-122 through 4-124, 4-126, 4-133, 4-135, 4-137, 4-138, 4-140, 4-144, 4-146 through 4-148, and 4-150, Cumulative Impacts,** NPS provides a flawed cumulative impacts assessment. Not only is the assessment not quantified, when it could be, it is so general that it does not give the reader a clear understanding of the degree that actions that have occurred outside and inside BTNP.

See in the section of this letter entitled "**DOGMP/DEIS Poorly Defined Words and Phrases**" which relates specifically how words and phrases used, because they are not defined or are poorly defined, make it unclear to the reader the degree that environmental impacts have on BTNP resources.

See in the section in this letter entitled "**DOGMP/DEIS Poorly Defined Words and Phrases" pages 2-3,** the problem with **"best professional judgment"** when it is only used to define intensity, context, and significance and quantitative requirements in the CEQ's NEPA implementing regulations are not implemented.

Some specific examples of how cumulative impacts could have been quantified follow along with specific comments on Chapter 4. **These are simply examples and other measures of cumulative impacts could have been used by NPS to determine the impact intensity thresholds.**

3) See 1) above, which begins this section of the letter about **Impacts on Nonfederal Oil and Gas Development** cumulative impacts.

4) **On pages 4-16, 4-17, 4-18, 4-19, and 4-20, for Air Quality,** the actual federal or state health based concentration levels for each pollutant considered (for example: ozone, hydrogen sulfide, carbon monoxide, volatile organic compounds, nitrogen oxides, particulates with an aerodynamic diameter of 10 micrometers, particulates with an aerodynamic diameter of 2.5 micrometers, sulfur dioxide), in BTNP and the region due to oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) and all other activities are not given in the cumulative effects sections. This information is easily found in the literature. The concentration levels for each pollutant that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. Concentration levels could have been developed using "best professional judgment" but were not.

5) **On pages 4-27, 4-28, 4-30, 4-31, and 4-34, for Geologic Resources,** the actual amount of erosion and compaction for soil in BTNP and the region due to oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) and all other activities, are not given in the cumulative effects sections. This information can be found in the literature. The

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levels for erosion and compaction that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. Such erosion and compaction levels for soil could have been developed using "best professional judgment" but were not.

Although the number of acres that may be affected by oil/gas operations is provided no acreages that are related to the impact intensity thresholds of negligible, minor, moderate, and major are given. These acreages could have been developed using "best professional judgment" but were not. No acreages are given for all other activities that affect cumulative effects.

6) **On pages 4-4, 4-43, 4-45, 4-46, 4-48, and 4-49, for Water Resources,** the actual federal or state water quality standards for water quality parameters (for example: total suspended solids, dissolved oxygen, pH, fecal coliform, etc.) in BTNP and the region due to oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) and all other activities are not given in the cumulative effects sections. This information is easily found in the literature. The concentrations for each pollutant that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. Concentrations could have been developed using "best professional judgment" but were not.

The same procedures could have been used for duration of flows and frequency of flows into the 100 year floodplain; for groundwater level changes; and for levels of saltwater intrusion. The actual effects; the amount of times that the duration of flows and frequency of flows have been impacted; and the specific degree to which this has occurred are not mentioned in the cumulative effects sections.

No mention is made of the proposals to raise the levels of Steinhagen and Sam Rayburn Reservoirs by the Corps of Engineers and supported by the Lower Neches River Authority. The NPS does not mention that Region H, the official water planning group for the Houston Area and the Lone Star Groundwater Conservation District are actively considering alternatives that transfer water from East Texas to the Houston in their updated Region H water plan that is due out in June 2005.

7) **On pages 4-53, 4-55, 4-58, 4-60, and 4-61, for Floodplains,** although total acres are given for oil/gas activities, the acreages that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. Acres are not estimated for other cumulative effects actions. This could be done by looking at development and population growth for the past ten years and the estimates of development and population growth for the next 10-20 years. Such estimates could have been developed using "best professional judgment" but were not.

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The same duration and frequency changes that are mentioned in 4 above should also be assessed quantitatively under Floodplains or referred to under Water Resources.

8) **On pages 4-66, 4-68, 4-69, 4-70, 4-71, and 4-72, for Vegetation,** the acreages that will be destroyed for each vegetation type in BTNP and the region due to oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) and all other activities are not given in the cumulative effects sections. This information is easily found in the literature or can be estimated from the literature. The vegetation type acreages that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. These acreages could have been developed using "best professional judgment" but were not.

9) **On pages 4-79, 4-81, 4-82, 4-83, 4-85, and 4-86, for Wetlands,** the acreages that will be destroyed for each wetlands type in BTNP and the region due to oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) and all other activities are not given in the cumulative effects sections. This information is easily found in the literature or can be estimated from the literature. The wetlands type acreages that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. Acreages could have been developed using "best professional judgment" but were not.

10) **On pages 4-93, 4-95, 4-97, 4-99, and 4-100, for Fish and Wildlife,** the acreages that will be destroyed for habitat for management indicator species in BTNP and the region due to oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) and all other activities are not given in the cumulative effects sections. This information is easily found in the literature or can be estimated from the literature. The fish and wildlife habitat acreages that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. Acreages could have been developed using "best professional judgment" but were not.

11) **On pages 4-106, 4-109, 4-112, 4-113, and 4-116, for Species of Special Concern,** the acreages that will be destroyed for habitat for species of special concern in BTNP and the region due to oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) and all other activities are not given in the cumulative effects sections. This information is easily found in the literature or can be estimated from the literature. The species of special concern acreages that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. Acreages could have been developed using "best professional judgment" but were not.

12) **On pages 4-120, 4-122, 4-123, 4-124, and 4-126, for Cultural Resources,** the number of cultural resource sites damaged or destroyed in BTNP and the

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145. Cont. region due to oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) and all other activities are not given in the cumulative effects sections. This information is easily found in the literature or can be estimated from the literature. The number of cultural resource sites damaged or destroyed that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. The number of cultural resource sites damaged or destroyed could have been developed using "best professional judgment" but were not. 13) **On pages 4-133, 4-135, 4-137, 4-138, and 4-140, for Visitor Use and Experience,** the number of visitors that would not come to BTNP and the region due to oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) and all other activities are not given in the cumulative effects sections. This information is easily found in the literature or can be estimated from the literature. The number of visitors that would not come that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. These numbers could have been developed using "best professional judgment" or surveys of visitors to BTNP or the region but were not. NPS could also have used the increase in decibel levels to determine impact intensity thresholds for visitor use and experience. These increases in decibel levels could have been developed using "best professional judgment" but were not. 14) **On pages 4-144, 4-146, 4-147, 4-148, and 4-150, for Adjacent Land Uses and Resources,** the number of oil/gas activities (geophysical, drilling and production, and plugging/abandonment/reclamation) that impact adjacent land uses and resources due to the alternative BTNP oil/gas management policies in this DOGMP/DEIS and the number of such actions that occur in the region are not given in the cumulative effects sections. This information is easily found in the literature or can be estimated from the literature. The numbers of these activities that are related to the impact intensity thresholds of negligible, minor, moderate, and major are not given. These numbers could have been developed using "best professional judgment" but were not.	
146. 15) **On page 4-3, and elsewhere in the DOGMP/DEIS,** NPS states that 1-3 years is short duration for environmental impacts. The Sierra Club disagrees. Up to 1 year shows a short duration for environmental impacts. From 1-3 years shows a moderate level of duration for environmental impacts. NPS does not provide the background data that was used during its "best professional judgment" method to determine that 1-3 years is short duration.	**146.** The NPS disagrees with the comment's interpretation of "short-term" duration. The 1 to 3-year term is an appropriate duration for describing short-term oil and gas impacts.
147. 16) **On page 4-3, Organization of Impact Discussions, Cumulative Impacts,** NPS states that, "Cumulative impacts are based on incremental actions from any type of development that is foreseeable over the life of the Plan." This statement is not entirely. The CEQ NEPA implementing regulations have a definition for	**147.** This text was changed in the Final Plan/EIS to read: "Cumulative Impacts – A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions (in the NPS, major actions are synonymous with significant actions) actions taking place over a period of time (see 40 CFR Part 1508.7). The cumulative impact analysis area for each resource topic may cover a different geographic area, depending on the specific resource being evaluated."

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147. Cont. "Cumulative impact" in Section 1508.7 which states, "Cumulative impact is the impact on the environment which results from the incremental impact of the action when **added to other past, present, and reasonably foreseeable future actions ... Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.**" NPS leaves out the past and present portion of the definition for cumulative impact in this statement although it mentions the past and present portion of cumulative impact in the sentence before this one.	
148. 17) **On page 4-3, Directional Drilling from Outside the Preserve,** NPS states that "The NPS's regulatory authority ... is limited in scope to only that portion of the operations occurring inside the Preserve." While the Sierra Club disagrees about how limited NPS's authority is, the NPS forgets to add to this sentence that its responsibility to assess environmental impacts outside of BTNP is required by NEPA and not limited.	**148.** See Response 46.
149. 18) **On page 4-4, Directional Drilling from Outside the Preserve,** meeting minimum state and federal requirements for directional drilling outside BTNP does not mean that the drilling does not result in "major adverse impacts" and therefore does not require an EIS. As NPS is aware, but does not state, the regulation of oil and gas activities is mostly the State of Texas' responsibility. The Railroad Commission is the state regulatory agency for oil/gas drilling and has no requirements for environmental protection on private lands except those dealing with some requirements to protect surface or groundwater. Environmental impacts on endangered species, vegetation, wetlands, etc. are not the Railroad Commission's responsibility or it has decided not to exercise its responsibility over impacts on these natural resources on private lands. The Corps of Engineers has responsibility regarding wetlands but has issued nation-wide permits; allows the dredging and filling of many wetlands; and does not regulate many wetlands which it should. The U.S. EPA has responsibility for water pollution and has National Pollutant Discharge Elimination System (NPDES) nation-wide permits. These are usually boiler plate and there is little regulatory oversight from the EPA and the Texas Commission on Environmental Quality (TCEQ) which implements the NPDES permit system in Texas. The TCEQ also implements air quality controls over oil/gas activities but allows many such operations to operate with either a permit by rule or standard permit which are much less protective and onerous than an air permit. The amount of regulation that oil/gas activities receive in Texas does not necessarily reduce the potential for "major adverse impacts" and the need for an EIS.	**149.** Comment noted. In the past, the NPS has never found a directional drilling proposal that qualifies for the exemption determination under 36 CFR § 9.32(e) to pose "major adverse impacts" and the need for an EIS.
150. 19) **On page 4-4, Impacts on Nonfederal Oil and Gas Development, Introduction,** what type of NEPA process must the issuance of special use permits for access and maintenance of pipeline rights-of-way undergo? The	**150.** Depending on the level of the project's effects, there are four NEPA pathways the NPS may follow: 1) prepare a memo to files for projects with previously prepared NEPA documentation; 2) apply a categorical exclusion; 3) prepare an EA; or 4) prepare an EIS. NPS allows for public comment on the last three and will note your comment where applicable.

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150. Cont. Sierra Club requests that it be notified of any consideration of special use permits in BTNP so that we can comment on these.

151. 20) **On page 4-4, Methodology for Assessing Impacts,** NPS states that "Because of the uncertainties of the petroleum industry and the financial considerations inherent in each operation, it is not possible to quantify the impacts on oil and gas development." This statement is not correct. The impacts that past geophysical exploration, drilling and production, and well plugging/abandonment/reclamation have had on BTNP are known. Therefore it should not be difficult estimate into the future what the impacts may be in the future. NPS is copping out and is not quantifying impacts as required by NEPA.

152. 21) **On page 4-5, Alternative A, Project Planning,** NPS states that "it has been difficult to consistently apply Current Legal and Policy Requirements to operations throughout the Preserve." NPS must provide an analysis and give examples of its difficulty in consistently applying legal and policy requirements using Alternative A so the public can review, comment on, and understand exactly what this means. Decision-makers also need to know this information.

153. 22) **On page 4-5, Alternative A, Project Planning,** NPS states that continued implementation of Alternative A "could result in project delays". NPS must provide an analysis and give examples of where this has occurred, how often it has occurred, and why the delays occurred so that the public can review, comment on, and understand exactly what this means. Decision-makers also need to know this information.

154. 23) **On page 4-5, Alternative A, Geophysical Exploration, on page 4-6, Alternative A, Plugging/Abandonment/Reclamation, page 4-7, Geophysical Exploration, page 4-8, Drilling and Production and Plugging/Abandonment/Reclamation,** NPS states that there would be increased costs for operators or operations would be "more costly" due to Alternative A. NPS must provide an analysis and give examples of where this has occurred, how often it has occurred, and the amount of the increased costs so that the public can review, comment on, and understand exactly what this means. Decision-makers also need to know this information.

155. 24) **On page 4-6, Alternative A, Drilling and Production**, NPS states that operator's costs "could be reduced outside of the Preserve, because fewer resource protection measures may be required". At the same time, because fewer resource protection measures may be required there would be less resource protection and presumable more resource damage outside the BTNP. NPS must mention this as a negative environmental impact of slant drilling outside the BTNP and estimate the costs of the greater resource damage.

156. 25) **On pages 4-22 through 4-35,** NPS never states in the EIS why subsidence and surface or subsurface fault activation due to slant drilling under BTNP or

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151. Pages 4-4 through 4-11 of the Draft Plan/EIS include an assessment of impacts of each of the three alternative management strategies on nonfederal oil and gas development. Specific impacts on Preserve resources and values carried forward for further analysis are described under the specific impact heading later in chapter 4. Page 4-4 of the Draft Plan/EIS explains that the NPS cannot quantify impacts on oil and gas development in the Preserve because of the uncertainties in the petroleum industry and the financial considerations inherent in each operation. Whether an operator chooses to conduct an oil and gas operation in the Preserve is dependant upon many factors including financial considerations of their respective companies, project risks, costs to implement mitigation specific to each operation, and the current price of oil and gas. For these reasons, the NPS did not quantitatively analyze impacts on oil and gas development and focused on the relative costs of conducting operations in the Preserve, such as the cost to prepare a plan of operations, implement mitigation, and to comply with all other current legal and policy requirements.

152. The referenced statement is an acknowledgement of the inherent difficulties of maintaining consistency in a case-by-case management process when operator representatives, NPS representatives, and involved public change over time and from project to project. The difficulties can cause extra time and effort for all concerned. The statement is not an evaluation of the consistency with which Current Legal and Policy Requirements have been applied, but rather an evaluation of the process by which it has been accomplished. The NPS does not track these particular nuances of the permitting process, but decision-makers can understand the basis of the statement noted on page 4-5 of the Draft Plan/EIS.

153. The referenced statement is an acknowledgement that the planning and evaluation necessary in the permitting process can contribute to delays when operator representatives, NPS representatives, and interested public change with over time and from project to project. The nonfederal oil and gas permitting process timeline shown on page 2-18 of the Draft Plan/EIS is the target timeline used by the NPS when working with an operator on a proposed plan of operations. Under Alternative A (current conditions), NPS staff currently spend considerable time with operators explaining where operations may be sited, operating stipulations, 9B regulations, and other legal and regulatory requirements. With a comprehensive oil and gas management plan, this information would be available to operators prior to contacting the NPS, eliminating many of the uncertainties of operating in the Preserve, thus reducing the time required to do project planning and permitting by both the NPS and operator. The NPS does not track these particular nuances of the permitting process, but decision-makers can understand the basis of the statement noted on page 4-5 of the Draft Plan/EIS.

154. It would be more costly for operators to conduct operations in the Preserve under any of the alternatives presented in the Plan/EIS. The NPS 9B regulations and other federal laws and regulations impose certain operating requirements on federal lands that are not required on private lands. Operating requirements on private lands are developed in collaboration with the landowner and are specified in surface use agreements. Several requirements that would increase the cost of an operation in the Preserve are: surveying the project area for natural and cultural resources, preparing a plan of operations, spill prevention and containment and waste handling/disposal requirements, and reclaiming the site to predisturbance conditions. Other requirements are described throughout the impact analyses in Chapter 4. In addition, many but not all of the federal operating stipulations are listed for geophysical operations in Table 2.20, drilling and production operations in Table 2.21, and well plugging and surface reclamation in Table 2.22. Also see Response 20.

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156. Cont. other drilling in BTNP will not occur or what the risk is of subsidence and surface or subsurface fault activation in different units of BTNP.

157. 26) **On page 4-6, Alternative A, Plugging/Abandonment/Reclamation,** NPS states that "specific plugging requirements ... for directional sells only is the proposed well-bore would intersect usable quality groundwater zones beneath the Preserve". NPS does not acknowledge that by allowing pollution on non-usable quality groundwater zones today that it ensures that in the future, if these zones can be used due to new treatment technology that clean-up either will not be able to be accomplished or will be more expensive to accomplish. NPS is removing from future generations the choice to use this water or use it more easily if it were not polluted due to oil/gas actions now. This is a negative environmental impact.

158. 27) **On page 4-7, Cumulative Impacts,** NPS states that "During the past 4 years, there has been an average of two wells drilled per year on prospects underlying Big Thicket". This is not true. About 19 wells have been approved since May 2002 and 19 of those have been drilled according to the NPS's EA Famcor Oil, Inc. Roberts/Duke #1 Flowline, page 15, which states, "From 1990 through 2004, there were no wells drilled within the Preserve. However, 19 directional wells were drilled from surface locations outside the Preserve to reach bottomholes inside the Preserve." Which statement is correct?

159. 28) **On page 4-7, Cumulative Impacts,** it is silly to say that "an overall decline in oil and gas drilling and production is expected over the long-term ... 3-D seismic in the region, would essentially be offset by the overall decline of drilling activity (and production) in the region, resulting in no cumulative, adverse impacts on oil and gas development." The cumulative impacts are that there will be decreased drilling but that in the short-term there will be more drilling as has been shown from May 2002 through the end of 2004.

160. 29) **On pages 4-7, 4-8, 4-9, 4-10, 4-11,** NPS states that implementation of a comprehensive management plan for Alternatives A and or B would facilitate project oversight. NPS must provide an analysis and examples of how this will occur so the public can review, comment, and understand exactly what NPS means. Decision-makers also need to know this information.

161. 30) **On pages 4-13 and 4-15, Alternative A, Air Quality,** NPS states that pollution control devices are used on exhaust systems (catalytic converters). What operations will these devices be used on and how often are these devices used?

162. 31) **On pages 4-13 and 4-14, Alternative A, Geophysical Exploration and Drilling and Production,** NPS should list particulate matter as an air pollutant emitted during these oil/gas activities.

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155. Impacts of directional drilling from surface locations outside the Preserve to reach bottomhole targets beneath the Preserve are assessed under each impact topic in Chapter 4, Environmental Consequences, in the drilling and production sections.

156. The following text was added in Chapter 4, under the impact topic "Geologic Resources," under the drilling and production subheading for all three alternatives: "Surface subsidence caused by fluid withdrawals from beneath Big Thicket National Preserve is not expected because of the properties (depth, porosity, compaction, hydropressure, etc.) of the target reservoirs and adjacent overlying sediments. There is no evidence that past production has contributed to any subsidence in the Preserve. While subsidence related to oil and gas withdrawals is possible, conditions conducive to it occurring (very shallow, high porosity reservoirs combined with high fluid withdrawal volumes, or fractures extending from reservoir depths to the surface) are not known to exist in or near the Preserve."

157. Where directional wells do not intersect usable quality water zones inside the Preserve, the NPS does not impose drilling, completion, or plugging standards stricter than those of the State of Texas. Texas standards are designed to keep fluids within zones that are capable of flowing during drilling, production, and after the well is plugged. Therefore, the properties of water or brine water in all zones penetrated by the well are not expected to be affected.

158. The text on page 4-7 was replaced with new text from Response 99.

159. Production data for the past 10 years, from the extensively drilled Western Gulf Oil and Gas Province encompassing the Preserve, shows a steady decline in oil and gas production (RRC 2005). When the price of oil and gas increases and operators identify drilling targets with exploration technologies such as 3-D seismic, there will be increases in the number of wells drilled and the resultant discovery of hydrocarbons, but due to the overall depletion of the reservoirs in the western Gulf Coast, an overall long-term decline in hydrocarbon production in the region is still expected to occur.

160. Project oversight will improve with implementation of the Oil and Gas Management Plan at the Preserve because it will provide operators necessary upfront information to help them better plan and conduct operations in the Preserve. During the EIS planning effort, the interdisciplinary team developed information that would help the NPS gain job efficiencies and facilitate and maintain quality project oversight in the Preserve, and will help the operator understand the NPS requirements they need to comply with and assist operators to plan and conduct their operations. Prior to preparing this Plan/EIS this information was available during project planning and permitting on a case-by-case basis, which requires considerable time and effort on the part of NPS staff and the operator. Information in the Draft Plan/EIS that will be available prior to planning an operation includes maps showing areas where no surface use and timing stipulations will apply (Figures 2.1 through 2.17 and Tables 2.6 through 2.16), a listing of operating stipulations and recommended mitigation measures (Tables 2.20 through 2.22), summaries of applicable current and legal policy requirements (Appendix C), and guidelines for sampling and detecting contamination in the Preserve (Appendix F). Also see Response 152.

161. Catalytic converters are used on vehicles that use unleaded gasoline. These vehicles will be primarily used by oil and gas personnel during drilling and production operations, but could also be used during geophysical exploration and plugging and reclamation activities. The text noted on pages 4-13 and 4-15 of the Final Plan/EIS is changed to clarify that these types of exhaust systems are used on vehicles.

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163. 32) **On page 4-15, Alternative A, Drilling and Production,** the cumulative impacts on air quality from particulates due to oil/gas used in refineries and other uses which comes from BTNP is not provided. These are regional air cumulative impact issues that should be discussed in this section.	**162.** Particulates or particulate matter emissions are discussed at the bottom of page 4-13, under "Geophysical Exploration;" and in paragraph on page 4-14 that begins "Particulate matter emissions…" under the heading "Drilling and Production."
164. 33) **On page 4-16, Alternative A, Cumulative Impacts,** NPS states that "impacts would be distributed over time." These impacts will last 20 years or more and there should be estimates of air pollutant emissions that are emitted over this time period cumulatively and for each well to be drilled. Emission factors can be used and to generate reasonable estimates.	**163.** The third paragraph in the cumulative impact analysis describes cumulative effects from particulate matter emissions. **164.** The sentence referenced reads: "As some operations are developed, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time." Because wells will be drilled to different depths, and technology and equipment used will vary, it is not possible to calculate with accuracy the total emissions of pollutants. The cumulative impact analysis concludes: "with adherence to State and federal ambient air quality standards, air pollution control requirements, and air quality management programs specified in State Implementation Plans, air quality in regional airsheds are expected to be maintained or improved."
165. 34) **On pages 4-23, 4-35, 4-50, 4-73, and 4-143, for Geologic Resources, Water Resources, Floodplains, Wetlands, and Adjacent Land Use and Resources,** NPS uses "regional scale" to define "Major". There are impacts that can occur which are not of a "regional scale" but which are significant and "Major". For instance, burning on the boundary of or within BTNP could produce smoke that would cause one or more people to go to the hospital. This is a "Major" impact because one or more person's health was directly affected by air pollution. An oil or toxic material spill could occur on the Neches River or a tributary, which covered a relatively short distance but resulted in a "Major" fish kill. Using "regional scale" sets the bar so high for defining "Major" impact that no matter what oil/gas or cumulative developments occur they will not be defined as "Major" by NPS. NPS must change the definition of "Major" to ensure that it fits what this word actually means.	**165.** The NPS routinely uses an increasing context and/or duration to define major effects.
166. 35) **On page 4-29, Alternative B, Geophysical Exploration,** NPS says that "Seismic shot-holes would not be permitted within 25 to 50 feet of the highest point in a center of a mound." Why does NPS not simply ban shot-hole placement on sand mounds? If a sand mound is larger than 25-50 feet a shot-hole will still be allowed under Alternative B. NPS states on page 3-22 that sand mounds "vary in diameter from 6 feet to 180 feet." This means that from 130-155 feet of a sand mound could be unprotected from impacts that shot-hole use entails. NPS is incorrect to say that "The designation of a SMA … would eliminate any direct impacts on these unique geologic features." Therefore the protectiveness of alternative B is less than stated and sand mounds are not fully protected. The Sierra Club supports protection of all sand mounds by banning shot-hole use on any portion of a sand mound.	**166.** Due to public comment and a re-evaluation of its merit by the NPS, the Sand Mounds SMA is removed from the Final Plan/EIS. Also see Response 44.
167. 36) **On page 4-30, Alternative B, Cumulative Impacts,** NPS states that Alternative B "would provide consistent protection of geologic resources in the SMAs". This is incorrect. As already mentioned above sand mounds are not fully protected by Alternative B. Because NPS uses the phrase "less than" before total area with operating stipulations for each unit and for BTNP and the total area with drilling and production operations no surface use (pages S-7, 2-25, 2-32, 2-34, 2-36, 2-38, 2-40, 2-42, 2-44, 2-46, 2-48, 2-50, and 2-52) for each unit and for BTNP, the different acreages that NPS will protect or allow impacts 63	**167.** See Responses 51 and 83.

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167. Cont. on in SMAs are not known to the public, from one oil/gas activity to another. Alternative B is not that different from the "case-by-case" method that Alternative A uses yet NPS states that it is without clearly defining the differences. NPS does not provide the consistency that is needed for the public to know what it will allow for resource protection and impacts, from oil/gas proposal to proposal.	
168. 37) **On pages 4-35 through 4-49, Water Resources,** NPS never states how long plugged wells last before they leak. Because NPS is relying on this form of operational stipulation to prevent groundwater contamination it must reveal to the public for review, comment, and to understand how long such wells are expected to stay leak free due to plugging. Decision-makers also need to know this information. The wells that are in the Neches River (page 4-39), should be plugged to ensure that surface water is not contaminated with brine, produced waters, and other water pollutants and to ensure that groundwater is not contaminated with surface water that is polluted.	**168.** Well plugging is designed to provide for permanent sealing and isolation of zones capable of flowing contaminants (brine or hydrocarbons). Decision-makers should be comfortable in knowing that once a well is properly plugged and abandoned, the probability that a leak will develop is extremely low. On the rare occasion that a plugged well develops a leak, it is generally an indicator that the job was not well done, and not an indicator that a well done job deteriorated over time. Also see Response 125.
169. 38) **On page 4-40, Plugging/Abandonment/Reclamation,** as noted in previous comments in this letter, reclamation is on-going from more than the 2-5 years claimed by NPS on this page. Therefore NPS must explain what is the maximum amount of time reclamation will take and the time that reclamation is currently taking (pages 3-4 through 3-7).	**169.** See Response 120.
170. 39) **On pages 4-38, 4-42, 4-44, 4-48, 4-51, 4-57, 4-58, 4-60, 4-63, 4-67, 4-69, 4-72, 4-76, 4-78, 4-80, 4-82, 4-83, 4-85, 4-86, 4-90, 4-95, 4-96, 4-97, 4-99, 4-100, and 4-105, 4-144, 4-146, 4-145, 4-147, 4-148, 4-149, and 4-150,** NPS states that a spill or other actions "**could result in** major" adverse impacts. But then NPS states that with the application of mitigation measures these impacts **could be** less than major. Because NPS cannot guarantee that the mitigation measures will be applied and will work it cannot state on **pages 4-43, 4-46, 4-49, 4-55, 4-58, 4-61, 4-68, 4-70, 4-72, 4-81, 4-83, 4-86, 4-95, 4-97, 4-98, 4-100, 4-146, 4-148, and 4-151, Cumulative Impacts and Impairment Analysis,** that "there would be no major adverse impacts". NPS must state under **Cumulative Impacts and Impairment Analysis** that in the case that mitigation measures are not applied or do not work that cumulative impacts will be "major" and impairment will occur.	**170.** The impact analysis referenced is for operations under approved plans of operations for which the NPS can require and enforce the mitigation measures.
171. 40) **On page 4-50, Impacts on Floodplains under Alternative A,** NPS states that "Interpretation and application of CLPR, and project-specific considerations, could result in variations in how, where, and to what extent resource protection is applied." NPS must provide an analysis and examples of how this has occurred so the public can review, comment on, and understand this. Decision-makers also need to know this information.	**171.** See Response 174. Specific examples of how guidance documents can be interpreted and applied differently by different practitioners, with varying levels of experience, is not necessary for the reader to understand the flexibility that Alternative A provides.
172. 41) **On pages 4-74 and 4-77, Drilling and Production,** a 1:1 or 2:1 mitigation/compensation is not sufficient to replace destroyed bottomland	**172.** As described in the cited pages, wetland restoration proposals must, at a minimum, provide one-for-one (1:1) wetland function replacement (i.e., focus on no net loss of wetland functions, not just wetland acreage). Final compensation ratios may need to be greater than 1:1 in cases where: (1) the functional values of the site being impacted are determined to be high and the restored wetlands will be of lower functional value; (2) it will take a number of years for the restored site to become fully functional (e.g., reestablishment of forested wetlands); or (3) the likelihood of full restoration success is unclear. Conversely, the replacement ratio may simply be 1:1 for areas where the functional values associated with the area being impacted are determined to be low relative to the replacement site and the likelihood of fully successful, timely replacement of functions at the restoration site is high. Wetland compensation decisions are made on a project-by-project basis. (NPS Procedural Manual 77-1, 5.2(C), Compensating for Wetland Impacts).

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172. Cont. hardwood and cypress swamp forest wetlands. The compensation ratio should be at least 7:1 to account for fragmentation, hydrological flow regime alterations, and other functions and because humans cannot create forested wetlands that function as well as naturally created forested wetlands. Recently the Corps of Engineers, Galveston District, told a permit applicant that a 7:1 ratio to mitigate for wetlands destroyed was necessary (see enclosed Corps permit sheet). **See Attachment 8.**	
173. 42) **On pages 3-69, 3-70, 4-105, and 4-128 through 4-142,** NPS talks about the impacts of noise. However, NPS does not give the decibel levels that cause negligible, minor, moderate, and major impacts. This could be done simply by using a range of decibel limits based on information in the literature regarding the effects that noise has on wildlife and human visitors. NPS must provide an analysis and examples of noise impacts with decibel levels so the public can review, comment, and understand exactly what NPS means when it says there are negligible, minor, moderate, and major noise impacts. Decision-makers also need to know this information.	**173.** Pages 3-68 and 3-70 of the Draft Plan/EIS describe ambient sound levels at various locations within the Preserve ranging from 36 to 61 decibels. Impact analyses in Chapter 4, Environmental Consequences, describe the effects of elevated noise on some impact topics. The NPS does not use a change in decibels to define impact intensity levels because impacts are not simply determined by decibel change but also by the particular uses that would be affected within the analysis area. The NPS does use decibel levels to describe impacts. For example, in the 4th paragraph on page 4-105, "Drilling operations introduce noise with the highest measurements in the 90 dBA range for a period of 30 to 90 days, with noise coming most from multiple diesel engines." The impacts of drilling and production operations on visitor use and experience under Alternative A, No-Action, is described on page 4-130, 5th paragraph, as follows: "As noted in Chapter 3, background noise levels at many visitor use areas in the Preserve have been recorded, with most falling at or just below 40 dBA. Figure 3.6 shows that a drill rig at a distance of 1,500 feet is associated with a noise level of about 40 dBA, while near the drill rig, sound levels are approximately 80 dBA. The 500-foot offset required for visitor use and administrative areas under NPS's 36 CFR 9B regulations would result in reducing the adverse impacts from a drilling rig, but would not reduce sounds to background levels. Localized, moderate, adverse impacts could result if drilling or other loud noises occur close enough to a visitor use area to cause interference with the enjoyment or use of the area."
174. 43) **On pages 4-116 through 4-127,** NPS has not fully protected cultural resources for the past two years. For instance, an August 23, 2004 letter from the Texas Historical Commission states for the Comstock Oil and Gas, Crown Petroleum Corporation, Northup and Associates, and others, Multiple Drill Projects that, "These impacts have the potential to impact significant cultural resources. We believe that the well pad and access road construction constitutes an undertaking as defined in the National Historic Preservation Act ... The NPS Directional Drilling Provision, which exempts these well pad locations from review under Section 106 of the NHPA, cannot supercede federal law. Although the well pad locations are not under federal control, they would not be constructed were it not for the federal minerals present beneath the BTNP. Therefore, in our opinion, any adverse effects to historic properties caused by their construction in an effort to extract federal minerals is a federal undertaking that must be addressed by the NPS ... We have contacted the Advisory Council on Historic Preservation for guidance on this issue." Because of problems like this one the NPS must discuss how it will conduct itself so that it fully complies with the National Historic Preservation Act and how it will do business in a different way than the example given above. **See Attachment 9.**	**174.** The Texas Historical Commission (THC) believed that the NPS had authority under Section 106 of the National Historic Preservation Act of 1966, as amended, to require directional drilling applicants that qualified for the 36 CFR § 9.32(e) exemption determination to perform archeological surveys on private property. The THC referred the issue to the Advisory Council on Historic Preservation (ACHP). The ACHP determined that issuing a § 9.32(e) exemption determination is not a federal undertaking by the NPS; therefore, the NPS has no Section 106 authority or responsibility.
175. 44) **On pages 4-127 through 4-141, Visitor Use and Experience,** NPS states that "Oil and gas operations would have the most adverse impact on visitors who come to BTNP to seek solitude or a quiet nature experience." But then NPS provides no information on the negligible, minor, moderate, and major impacts that oil/gas activities have specifically on "solitude". The impacts on "solitude" that oil/gas activities have should be provided in this EIS so that the public can	**175.** Impact intensity threshold definitions for negligible, minor, moderate, and major impacts on visitor use and experience are provided on page 4-128 of the Draft Plan/EIS. Impacts from elevated noise on visitor use and experience is described in the 5th paragraph on page 4-130 (Alternative A), the 5th paragraph on page 4-136 (Alternative B); and the 2nd paragraph on page 4-139 (Alternative C).

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review, comment, and understand what the impacts are. Decision-makers also need to know this information.	
175. Cont. 45) **On page 4-145, Cumulative Impacts,** NPS states that "Since the majority of adjacent land uses are ongoing private and commercial logging activities, it is likely that impacts associated with these activities would continue over the foreseeable future." This would have been a true statement in 1998, when the preparation of this EIS began, but it is not true today. With Louisiana-Pacific and International Paper selling 1.5 million acres in East Texas, much of which is near or next to BTNP, there is no assurance that this land will continue in logging activities. In fact the land is being broken up and sold and is not in the process of being developed. NPS must discuss this very real threat to the BTNP in detail.	
176.	**176.** The lands adjacent to the Preserve remain predominantly in private and commercial timber production, as described.
46) **On pages 4-61 through 4-72 and 4-147 and 4-149, Geophysical Exploration and Drilling and Production,** an impact that is not discussed is the destruction of sensitive ecosystems. The kinds and amounts of sensitive ecosystems that would be destroyed, both from oil/gas activities, and **Cumulative Impacts,** must be detailed here so that the public can review, comment, and understand exactly what may occur. Decision-makers also need to know this information. NPS must assess, analyze, and evaluate the full impacts of losing vegetation types for the full life of the oil/gas well or reclamation of the oil/gas well site and or field on either NPS land and or private lands. Depending on the age and composition of the vegetation, the impacts will be long lasting from several decades to several hundred years. If the vegetative composition is altered from what exists today and the likelihood of it growing back is not great then the impact could be almost permanent. Such assessments of impacts need to be stated clearly and fully in this EIS.	
177.	**177.** Impacts on vegetation in the Preserve are assessed on pages 4-61 through 4-72 of the Draft Plan/EIS. Impacts on vegetation on adjacent lands are assessed on pages 4-141 through 4-151. The analyses describe the context, duration, and intensity of impacts. Because the Draft Plan/EIS is a programmatic management plan, it is not intended to analyze project-level impacts. Scoping will be carried out for each project to identify important issues for consideration in a project-specific analysis.
47) **On page 4-151, Impairment,** NPS states that "Even if there were a catastrophic spill, the site would be re-mediated and would not likely result in an impairment of Preserve resources and values." NPS offers no data to support this assertion. In fact a major spill of oil in a cypress swamp or bottomland hardwood forested wetland would be virtually impossible to re-mediate and would result in an impairment of those resources for a long time to come. Scientists have studied the impacts that oil has on wetlands and found that well-fouled wetland areas are especially hard hit and may take decades to recover.	
178.	**178.** The Draft Plan/EIS describes how wetlands will be avoided under Current Legal and Policy Requirements and the additional operating stipulations prescribed under Alternatives B and C. If there is no practicable alternative to avoid locating nonfederal oil and gas operations in a wetlands, appropriate mitigation measures will be applied. See also Response 177.
48) **On page 4-151, Impairment, Alternatives B and C,** these two alternatives should not be grouped together since they have very different levels of environmental protection and potential impacts. Alternative C has definite no drill zones that are much more extensive than Alternative B and which do not use the caveat of "less than" for number of acres covered. By grouping these two alternatives together NPS blurs their differences and does not make them clear	
179.	**179.** For the discussion of impairment as described on pages 4-151 and 4-152 of the Draft Plan/EIS, combining Alternatives B and C is appropriate.
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179. Cont. and distinct for the public to review, comment on, and understand. Decision-makers also need to understand the distinctions between alternatives.	
180. 49) **On pages 4-152 and 4-153, Alternatives B and C, Impairment, last paragraph and Unavoidable Adverse Impacts that Cannot be Avoided Should the Action be Implemented, first paragraph,** NPS is overly strict in limiting what oil/gas activities it considers qualify for the preparation of an EIS. This strictness of when an EIS is required plus NPS's strict definition of what constitutes a "Major" impact ensure that an EIS will probably never be required for an individual drilling well site.	**180.** Comment noted.
181. 50) **On page 4-152, Enhancement of Long-term Relationship between Local Short-term Uses of the Environment and Maintenance and Productivity,** NPS states that "continuation of the existing management program as discussed above under Alternative A could led to impairment of these resources." **On pages 4-17, 4-28, 4-43, 4-55, 4-68, 4-81, 4-95, 4-110, 4-122, and 4-135,** NPS states that the "selection of Alternative A would not result in an impairment". NPS cannot have it both ways. Which statement is correct?	**181.** The word "could" merely implies that Alternative A has greater potential to lead to impairment than Alternatives B and C.
182. 51) **On pages 4-152 and 4-153, Enhancement of Long-term Relationship between Local Short-term Uses of the Environment and Maintenance and Productivity and Unavoidable Adverse Impacts that Cannot be Avoided Should the Action be Implemented,** NPS states that if wetlands cannot be avoided and the mitigation required is not successful in compensating for the original productivity of areas lost, there could be a loss in long-term productivity in these areas or unavoidable adverse impacts. What will NPS do, under this DOGMP/DEIS if this scenario occurs? Will NPS require compensation via the purchase of equivalent wetlands? What is NPS's recourse if this scenario comes true?	**182.** The Plan/EIS is not intended to provide direction in dealing with unsuccessful wetlands restoration. In the event that wetlands restoration is not successful, the NPS will work with the operator under the NPS's DO 77-1, and with the U.S. Army Corps of Engineers under the Section 404 process, to determine the correct course of action.
183. 52) **On page 4-153, Irreversible or Irretrievable Commitments of Resources,** NPS states that "The potential for these lands to produce vegetation or be viewed in an undisturbed state would be irretrievably committed for the duration of the oil and gas development operations, and until the site(s) have been reclaimed." This is an understatement of what the impacts will be. The impacts will last, not until the site has been "reclaimed", but until the vegetation type has reached the age that it was when it was cleared. Even this may underestimate the length of the impacts because the vegetation type that was cleared from the site may not be the vegetation type that grows back at the site. Impacts could last for several centuries or may be permanent if the vegetation type that originally grew on the site never grows back. In addition, NPS also does not include the unavoidable adverse impacts of the loss of solitude, quiet, clean air, and the destruction of ecosystems.	**183.** The opening text to this section states "Irreversible impacts are those effects that cannot be changed over the long term or are permanent. An effect to a resource is irreversible if it (the resource) cannot be reclaimed, restored, or otherwise returned to its pre-disturbance condition." Elevated noise levels and air pollution would not result in an irreversible impact because when the oil and gas operation ceases, the impacts cease. Please note the NPS's goal for reclamation is defined by reclamation requirements in 36 CFR § 9.39(a)(2) (see Appendix B), and is to restore natural conditions and processes.

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184. 53) The Sierra Club does not find in Chapter 4 where the NPS has assessed the impacts that additional traffic will have on the BTNP and its visitors and or private property via air pollution, noise, and destruction of the road surface by heavy vehicles. NPS must also reveal the impacts on all roads and bridges that are used to access the well site, the pipeline, and any associated activities.

Appendices

185. 1) **On page C-31, Appendix C,** NPS should list 30 TAC 106 and 116 for permit by rule and permit requirements for air quality.

186. 2) **On page E-1, Introduction Appendix E,** the use of 1995 data for oil/gas plays means the estimation of oil/gas reserves that are left in BTNP is 10 years old. A more recent estimation is needed to take into account the finds that have occurred in the last 10 years.

187. 3) **On page 1, Introduction, Appendix E,** what is the percent error for the Monte Carlo simulation model?

188. 4) **On page 2, Tertiary Oil and Gas Play, Appendix E,** the fact that BTNP only makes up 0.6% of the total play area indicates how minor the oil/gas resources under BTNP.

189. 5) **On page 3, Upper Cretaceous Oil and Gas Play, Appendix E,** the fact that BTNP only makes up 0.32% of the total play area indicates how minor the oil/gas resources under BTNP.

190. 6) **On page 4, Step 2. Oil and Gas Data Allocation and Evaluation, Appendix E,** NPS should tell the public how well predictions matched reality in the past so that the public can review, comments on, and understand this information. Decision-makers also need to know this information.

191. 7) **On pages C-5 and E-6, Appendix E,** because of new seismic technologies this reserve estimate underestimates the amount of finds that will be discovered and thus the number of wells that will be drilled. This reserve estimate document states that if a deeper pool were discovered in an existing salt-dome field, for example, that the pool would fall under the category of reserves in an existing field and would not be reflected in this estimate. Therefore the DOGMP/DEIS, since it relies on the RFD, underestimates the environmental impacts that will occur inside and outside BTNP. A better estimate of total drilling activity needs to be developed for this DOGMP/DEIS.

192. 8) **On page F-1, I. What is the Purpose of this Document, Appendix F,** NPS states that owner/operators are supposed to collect samples. How will NPS know that owners/operators have collected samples correctly? NPS should trust,

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184. Impacts from the use of heavy equipment and vehicles, and construction and maintenance of access roads are assessed under all resource topics in Chapter 4, Environmental Consequences. Because the Draft Plan/EIS is a programmatic management plan, it is not intended to analyze project-specific impacts. The RFD scenario in the Plan/EIS has been used to assess impacts associated with oil and gas operations within and outside of the Preserve. Table 2.1 on page 2-8 of the Final Plan/EIS illustrates projected surface disturbances associated with these operations. Of the 241 acres projected to be developed in the Preserve, 145 acres could be disturbed to construct new oil and gas access roads. Scoping would be carried out for each project to identify important issues for consideration in a project-specific environmental analysis.

185. Comment noted. The NPS focused on selected Texas Laws and Regulations in Appendix C on Texas Administrative Code chapters directly related to oil and gas operations. The air quality permits noted in the comment as well as other general construction permitting requirements may apply to oil and gas operations. It is the responsibility of the operator to determine which permits are applicable to each specific operation.

186. See Response 81.

187. The USGS and NPS acknowledge the geologic uncertainties associated with estimating undiscovered oil and gas underlying the Preserve. There is no percent error associated with the Monte Carlo simulation; rather, the Monte Carlo simulation generates a probability distribution of oil and gas resources ranging from a low case of having a 95% probability of that amount or more occurring to a high case of having a 5% probability of that amount or more occurring. The NPS used the mean estimate when preparing its RFD scenario for the Draft Plan/EIS and has updated the RFD scenario for the Final Plan/EIS using the 25% probability distribution (see Chapter 2 – Reasonably Foreseeable Development Scenario and Appendix E, Table 1 in the Final Plan/EIS).

188. The commenter is correct in stating that the Preserve encompasses only 0.6% of the Tertiary play area defined by the USGS for the Western Gulf Oil and Gas Province. In order to accurately depict future activities that could occur to develop the projected oil and gas resources underlying the Preserve, all of the productive and potentially productive reservoirs were included in the NPS's RFD scenario, including the Tertiary oil and gas play.

189. The commenter is correct in stating that the Preserve encompasses only 0.32% of the Cretaceous play area defined by the USGS by the USGS for the Western Gulf Oil and Gas Province. In order to accurately depict future activities that could occur to develop the projected oil and gas resources underlying the Preserve, all of the productive and potentially productive reservoirs were included in the NPS's RFD scenario, including the Cretaceous gas play.

190. The USGS assessment is an estimate of undiscovered oil and gas resources underlying the Preserve. Since the oil and gas exploration and development described in the plan is projected to occur over the next 15 to 20 years, and it may take even longer to produce the hydrocarbons, it is not possible in this EIS to compare actual production figures with the USGS estimate of undiscovered resources in the Preserve.

191. See Response 81.

192. The NPS requires operators to use the guideline in the following situations: 1) to establish baseline conditions prior to beginning operations, 2) following a spill, to characterize the type and areal extent of contaminants prior to developing remediation techniques and clean-up levels, or 3) at the completion of operations or remediation to ensure reclamation/remediation has been

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but verify. NPS should conduct split samples and audits to keep owners/operators honest. Does NPS do this and if so for how many well sites?

192. Cont.

9) **On pages F-1 and F-2, I. What is the Purpose of this Document, Appendix F,** NPS must define **"contaminating substance"** so that the public can review, comment on, and understand what this term means. Decision-makers also need to know this information.

193.

10) **On page F-5, III. What Contaminants to Test for, Appendix F,** NPS must define **"clean-up activities"** so that the public can review, comment on, and understand what this term means. Decision-makers also need to know this information.

194.

11) **On page I-2, III. Well Plugging Goals, Appendix I,** NPS does not state how long a well is allowed to be unplugged before well plugging must occur. NPS should provide this information.

195.

12) **On page I-4, Zones Containing liquid or Gas with the Potential to Migrate, Appendix I,** it is not clear how these requirements address lateral fractures and ensure that they do not cause water contamination. NPS should provide this information.

196.

Final Comment

The NPS should not be surprised by the issues and concerns that the Sierra Club has brought up in this comment letter. Many of these concerns and issues were first brought up in the December 17, 1998 scoping comments that the Sierra Club submitted to the NPS. Other issues and concerns have been brought up in our scoping and EA comments regarding the 19 oil/gas wells that have been proposed or approved by the NPS since 2002. **See Attachment 10.**

The Sierra Club, Big Thicket Association, TexPIRG, and Texas Committee on Natural Resources request:

1) That no further oil/gas activities are allowed in the BTNP until the Final OGMP/FEIS/ROD is complete, with full public input, and approved in the ROD.

2) That the DOGMP/DEIS for BTNP be withdrawn and not re-released until a complete qualitative and quantitative cumulative effects analysis, assessment, and evaluation based on the CEQ document, "Considering Cumulative Effects Under the National Environmental Policy Act".

3) That NPS no longer re-interpret the 9B regulations for any oil/gas wells in or outside of BTNP and the National Park System unless it enters into an administrative rule change process in the Federal Register with a public review and comment period of at least 60 days.

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satisfactorily achieved. The guideline includes guidance for Quality Assurance/Quality Control. The NPS reviews plans for sampling/analysis and remediation prior to implementation by an operator. The NPS uses the guideline for collecting soil and surface/groundwater samples at abandoned oil and gas sites as funding is available. See also Response 120.

193. "Contaminating substances" is defined in the glossary on page Glossary-2. The definition derives from the 36 CFR 9B regulations. The 36 CFR § 9.31(n) reference was added at the end of the definition.

194. Clean up activities are designed for a specific operations site or spill event, and depend upon many factors, including the type of contaminating substance, areal extent of contamination, and environmental receptors.

195. See Response 122.

196. The requirement applies to zones containing liquid or gas with the potential to migrate whether the flowing capacity of the zone is the result of matrix permeability or the presence of fractures, or a combination of the two.

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4) That the DOGMP/DEIS for BTNP be withdrawn until NPS updates its United States Geological Service cumulative impacts analysis for the number of oil/gas wells estimated to be drilled in or next to the BTNP for the next 20-30 years using current oil/gas drilling data and information because that number has been underestimated.

5) That the public be notified when each special use permit for right-of-way activities is requested so that the four organizations that have endorsed these comments and the public can comment on each special use permit.

6) The four organizations that have endorsed these comments request that they be notified in writing when the 60-day data collection permits are proposed pursuant to 36 CFR 9.52(a), so that they can respond, if necessary, with comments as to their appropriateness.

The Sierra Club, Big Thicket Association, TexPIRG, and Texas Committee on Natural Resources appreciate this opportunity to comment. Thank you.

Sincerely, Brandt Mannchen

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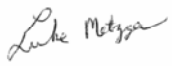
Mr. Luke Metzger Advocate U.S. TexPIRG 700 West Avenue Austin, Texas 78701 512-479-7287  71	

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59 letters were received from Sierra Club members that included the following standard comments:	
197. 1) Support and request environmental analysis for alternatives that buy all oil/gas private mineral rights in BTNP and/or do not allow the surface use of BTNP for new oil/gas activities.	**197.** See Response 82.
198. 2) Withdraw and revise the DOGMP/DEIS to include a complete qualitative/quantitative cumulative effects analysis, assessment, and evaluation based on the document, “Considering Cumulative Effects under the National Environmental Policy Act.”	**198.** See Responses 73 and 145.
199. 3) State that Alternative C, the environmentally preferred alternative, is the best of the three alternatives presented in the DOGMP/DEIS and should be adopted if buying mineral rights or not allowing surface use alternatives are not chosen.	**199.** See Response 2.