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Mr. Donald Silawsky
Office of Petroleum Reserves (FE-47)
U.S. Department of Energy
1000 Independence Avenue SW
Washington, D.C. 20585-0301

Dear Mr. Silawsky,

Enclosed are the comments of the Houston Regional Group of the Sierra Club (HSC) regarding the Department of Energy's (DOE) Draft Environmental Impact Statement (EIS) for the Strategic Petroleum Reserve Expansion (SPRE). The HSC understands that the deadline for the EIS has passed. Until last week we were not aware where the proposed locations for the SPRE were and that the Stratton Ridge site in Brazoria County would destroy several hundred acres of Columbia Bottomlands ecosystem.

The HSC has been involved with protection of the Columbia Bottomlands ecosystem for over 10 years. We are very concerned that that DOE will choose the Stratton Ridge site and inadequately mitigate damage to the Columbia Bottomlands ecosystem and other wetlands ecosystems.

1) The HSC is appalled that the DOE has no wetlands delineation to document the potential damage. The wetlands delineation for the Stratton Ridge site is needed to create an adequate mitigation plan. This DEIS should be withdrawn or supplemented with a new public comment period when the DOE conducts a wetlands delineation and the Corps of Engineers verifies its accuracy. **The public and decision-makers need the wetlands delineation in the DEIS to review, comment on, and understand the full environmental impacts of the SPRE.**

2) The HSC requests that a 10:1 compensation ratio (in acres) be assigned to any Columbia Bottomlands that are destroyed or damaged by the proposed SPRE. This means that the reported 258 acre loss of Columbia Bottomlands would be mitigated with compensation that results in land acquisition, protection, and management of 2,580 acres of Columbia Bottomlands forested wetlands. The HSC recommends that an amount of money that will buy 2,580 acres of Columbia Bottomlands forested wetlands be earmarked and given to the U.S. Fish & Wildlife Service for the acquisition of this compensation land.

"When we try to pick out anything by itself, we find it hitched to everything else in the universe." John Muir

An EIS is not complete unless it contains "a reasonably complete discussion of possible mitigation measures." Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352, 109 S.Ct. 1835, 104 L.Ed.2d 351 (1989). ("...omission of a reasonably complete discussion of possible mitigation measures would undermine the "action-forcing" function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects.") That requirement is implicit in NEPA's demand that an EIS must discuss " 'any adverse environmental effects which cannot be avoided should the proposal be implemented.' " Id. at 351-52, 109 S.Ct. 1835 (quoting NEPA, 42 U.S.C. § 4332(C)(ii)); see also 40 C.F.R. § 1502.16(h) (stating that an EIS must contain "[m]eans to mitigate adverse environmental impacts").

A "mitigated FONSI" is upheld when the mitigation measures significantly compensate for a proposed action's adverse environmental impacts. Friends of Endangered Species, Inc. v. Jantzen, 760 F.2d 976, 987 (9th Cir.1985); Greenpeace Action, 14 F.3d at 1332-33. See also City of Auburn, 154 F.3d at 1033 (agency may condition its decision not to prepare a full EIS on adoption of mitigation measures). However, although mitigation measures need not completely compensate for adverse environmental impacts, Friends of the Payette v. Horseshoe Bend Hydroelectric Co., 988 F.2d 989, 993 (9th Cir.1993), the agency must analyze mitigation measures in detail and explain how effective the measures would be. Northwest Indian Cemetery Protective Ass'n v. Peterson, 795 F.2d 688, 697 (9th Cir.1986), rev'd on other grounds, Lyng v. Northwest Indian Cemetery Protective Ass'n, 485 U.S. 439, 108 S.Ct. 1319, 99 L.Ed.2d 534 (1988). "A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA." Id. Instead, mitigation measures should be supported by analytical data, Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1151 (9th Cir.1998), even if that data is not based on the best scientific methodology available. Greenpeace Action, 14 F.3d at 1333. The general invocation of a term like "Best Management Practices" does not satisfy the NEPA requirement that the analysis discuss measures to mitigate the proposed action's adverse environmental impacts. Northwest Indian Cemetery Protective Ass'n v. Peterson, 565 F.Supp. 586 (D.C.Cal. 1983).

In other words, the applicable regulations require that a DEIS discuss means to mitigate adverse environmental impacts of the proposed action. Those mitigation measures must be analyzed in detail and must explain, in detail, how effective they will be in mitigating any adverse environmental impacts. Without analytical data to support the proposed mitigation measures they amount to nothing more than a "mere listing" of good management practices. A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA. Simply pointing out, for instance, that BMPs will be followed is not an adequate discussion of means to mitigate adverse environmental impacts.

The DEIS does not analyze any mitigation measures in detail or explain how effective these measures would be. This could hardly qualify as a detailed analysis.

The DEIS does not adequately analyze mitigation measures in detail and lacks an explanation of how these measures would be effective for this particular project. The mitigation measures are not supported by any site-specific analytical data. Therefore the DEIS violates NEPA. Without this analysis and a showing that the mitigation measures will be effective at averting significant environmental effects the DEIS is deficient.

3) The HSC is concerned that cumulative impacts have not been adequately covered in the SPRE DEIS. There is insufficient documentation in the DEIS of cumulative impacts, including direct, indirect, secondary, and connected impacts of past, present, and foreseeable future actions. Yet the NEPA and the CEQ require that analysis, assessment, and evaluation of cumulative impacts be conducted. Please see Chapters 1502.16, 1508.7, and 1508.8 of the CEQ regulations which are binding on all federal agencies to implement. The DOE does not include in its cumulative impacts analysis all past actions.

At minimum, an adequate cumulative effects analysis must:

- 1) Identify the past, present, and reasonably foreseeable actions of DOE and other parties affecting each particular aspect of the affected environment
- 2) Must provide 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 DOE actions
- 3) Must estimate incremental changes in these conditions that will result from DOE 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 DOE actions in combination with actions of other parties
- 5) Must identify specific mitigation measures that will be implemented to reduce or eliminate such effects

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

Some of the especially important quotes from the CEQ document 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 is 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 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 ... 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 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 need 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 from 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, 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 is 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 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 DOE must utilize the CEQ document to the maximum extent possible so that a full and legal cumulative impacts assessment is conducted in the DEIS.

4) If the DOE does not include important information (see wetlands delineation and cumulative impacts comments above) in the DEIS it will hide from the public and decision-makers the magnitude and significance of the SPRE. The need for this information is clearly documented by the following:

1) **CEQ NEPA Regulation, 1500.1(b)**, "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA."

2) **CEQ NEPA Regulation, 1500.1(c)**, "The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences."

3) **CEQ NEPA Regulation, 1500.2(b)**, "Implement procedures to make the NEPA process more useful to decision-makers and the public."

4) **CEQ NEPA Regulation, 1500.2(d)**, "Encourage and facilitate public involvement in decisions which affect the quality of the human environment."

5) **CEQ NEPA Regulation, 1500.4(b)**, "Preparing analytic rather than encyclopedic environmental impact statements."

6) **CEQ NEPA Regulation, 1500.4(f)**, "Emphasizing the portions of the EIS that are useful to decision-makers and the public."

7) **CEQ NEPA Regulation, 1501.2(b)**, "Identify environmental effects and values in adequate detail so they can be compared to economic and technical analyses."

8) **CEQ NEPA Regulation, 1502.2**, "EISs shall be analytic rather than encyclopedic."

9) **CEQ NEPA Regulation, 1502.4(a)**, "Agencies shall make sure the proposal which is the subject of an EIS is properly defined."

10) **CEQ NEPA Regulation 1502.16**, "This section forms the scientific and analytic basis for the comparisons ... environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot

be avoided should the proposal be implemented, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and irreversible or irretrievable commitments of resources."

11) **CEQ NEPA Regulation, 1502.21**, "No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment."

12) **CEQ NEPA Regulation, 1502.24**, "Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in EISs. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement."

13) **CEQ NEPA Regulation, 1506.6(a)**, "Agencies shall make diligent efforts to involve the public in preparing and implementing their NEPA procedures."

14) **CEQ NEPA Regulation, 1508.3**, "Affecting means will or may have an effect on."

15) **CEQ NEPA Regulation, 1508.14**, "Human Environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment ... When an EIS is prepared and economic or social and natural or physical environmental effects are interrelated then the EIS will discuss all of these effects on the human environment."

16) **CEQ NEPA Regulation, 1508.18**, "Major Federal action includes actions with effects that may be major and which are potentially subject to Federal control and responsibility. Major reinforces but does not have a meaning independent of significantly ... Actions include new and continuing activities, including projects ... approval of specific projects, such as construction or management activities located in a defined geographic area."

17) **CEQ NEPA Regulation, 1508.27**, "Significantly as used in NEPA requires considerations of both context and intensity ... Context means that the significance of an action must be analyzed in several contexts ... For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as whole ... Intensity refers to the severity of impact ... impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believe that on balance the effect will be beneficial ... Unique characteristics of the geographic area (like the Lone Star Hiking Trail) ... The degree to which the effects on the quality of the human environment are likely to be highly controversial ... The degree to which the possible effects ... are highly uncertain or involve unique or unknown risks ... Whether the action is related to other actions with individually insignificant but cumulatively significant impacts ... Whether the action threatens a violation of

Federal, State, or local law or requirements imposed for the protection of the environment."

Examples of where the DOE is deficient in determining cumulative impacts include but are not limited to:

- 1) The DOE does not examine the cumulative impacts due to the U.S. Army Corps of Engineers not implementing Section 404 as required by the Clean Water Act.
- 2) The DOE does not examine the cumulative impacts due to the Intercoastal Waterway (for instance the continued loss of wetlands due to the widening of the Intercoastal Waterway via boat wakes).
- 3) The DOE does not examine the cumulative impacts due to implementation or lack of implementation of Federal Emergency Management Administration's floodplain and storm surge regulations and development in the 100 year floodplain and the hurricane storm surge areas.
- 4) The DOE does not list all Federal Highway Administration, Texas Department of Transportation, Brazoria County, and Brazoria County cities actions (projects) and discuss in detail the cumulative impacts they have on Columbia Bottomlands forested wetlands and other sensitive environmental receptors.

The HSC requests that the DEIS be revised and put out again for a 60 day public review and comment period. The HSC appreciates this opportunity to comment. Thank you.

Sincerely,

Brandt Mannchen
Chair, Forestry Subcommittee
Houston Sierra Club
Lone Star Chapter