

ABOUT THIS PUBLICATION

The National Environmental Policy Act (NEPA) clearly has a role to play in how projects with a federal nexus prepare for climate change. To help agencies improve their consideration of climate change, the Council on Environmental Quality (CEQ) in February 2010 released Draft NEPA Guidance, which addressed both emissions and effects of climate change on agency actions and the affected environment. We analyzed 154 Final Environmental Impact Statements released between July 2011 and April 2012, and found that very few incorporated the climate adaptation elements of the 2010 draft guidance. Even the best-performing EISs tended to incorporate climate change into a limited number of the elements of the affected environment, failed to make a full comparison between the various alternatives, or used short and qualitative statements rather than full analysis based on the best available science. This paper explores possible reasons for these deficiencies and presents recommendations for overcoming these obstacles.

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Defenders of Wildlife is a national, nonprofit membership organization dedicated to the protection of all native wild animals and plants in their natural communities.

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Executive Summary

As the most significant piece of federal legislation guiding environmental analysis and decision-making, the National Environmental Policy Act (NEPA) clearly has a role to play in how projects with a federal nexus prepare for climate change. Since climate change is one of the most important environmental issues to emerge in the past few decades, and promises to remain so for the foreseeable future, it is increasingly critical for agencies to thoughtfully and thoroughly consider climate change, from both an emissions and adaptation standpoint, as part of NEPA analysis, particularly in Environmental Impact Statements.

In order to help agencies improve their consideration of climate change, the Council on Environmental Quality (CEQ) in February 2010 released Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas (GHG) Emissions. The draft guidance addressed both emissions and also effects of climate change on agency actions and the affected environment. While the emissions portion of the guidance received considerable scrutiny, the adaptation section received far less attention from either the media or climate change policymakers.

Defenders of Wildlife analyzed 154 Final Environmental Impact Statements released between July 2011 and April 2012, to determine how well these documents incorporated the climate adaptation elements of the 2010 draft guidance. We formulated a set of ten questions based on the various elements discussed in the guidance narrative, intending to score the EISs on how well they answered the questions.

We found, however, that only 10% of the EISs we analyzed included enough information about climate change to even apply the questions. Even the best-performing EISs tended to incorporate climate change into a limited number of the elements of the affected environment, failed to make a full comparison between the various alternatives, or used short and qualitative statements rather than full analysis based on the best available science.

Of the EISs we assessed, 26 (17%) included limited consideration of climate impacts to the project and affected environment. These had brief discussions of climate change as it impacts their project and resources of concern, but did not give the question the kind of detailed analysis envisioned by the 2010 NEPA Draft Guidance. Eight (5%)

EISs demonstrated a recognition of potential climate change impacts, but considered them only with respect to the outcome of the project itself, while ignoring climate change impacts on the resources affected by the project. In 38 EISs (25%), the discussion of climate change considered only the project's greenhouse gas emissions footprint, with no mention of potential impacts to either the project or affected resources, let alone any consideration of adaptation measures for these impacts.

Nearly one-third of the EISs we reviewed gave a brief mention of climate change somewhere in the EIS. However, these failed to incorporate analysis of either the causes or the effects of climate change within the context of the environmental impacts of any of the alternatives, and most instead provided one of several different rationalizations for why no further analysis was given. Finally, 19 (12%) of the EISs we reviewed did not mention climate change anywhere in the document.

There are probably several reasons that many agencies are not yet implementing the adaptationrelated recommendations in the 2010 Guidance. First, the fact that the Guidance remains in draft form over three years after its initial release has probably reduced its utility for agencies. Second, the number of EISs that cited uncertainty about climate change and its impacts on natural communities suggests a disconnect between the research science community and the planning and analysis community. Finally, the 2010 recommendations themselves lack detail about how to go about conducting a robust analysis of the interaction between a proposed action, various other alternatives, climate change, and other sources of cumulative impacts. We present recommendations for overcoming these obstacles.

Introduction

The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

– National Environmental Policy Act, 1969, 42 USC § 4331

The National Environmental Policy Act (NEPA), passed with overwhelming bi-partisan support in 1969, is one of the most important environmental and government transparency laws in the United States. At its core, NEPA recognizes the importance of a healthy environment to our well-being and our economy and lays out a sound set of procedures to ensure the federal government has thought through the consequences of its actions, explored alternative approaches to achieving its objectives, and involved the public in its decision making. NEPA's approach to federal decision making has remained relevant over the last four decades and has accommodated emerging environmental issues over time. Today, federal agencies need to incorporate the most profound issues of our time into their NEPA implementation: climate change.

Over the past several years, the evidence for anthropogenic climate change has mounted, and the impacts are being felt across more and more of the country in the form of extreme heat, severe weather, and rising seas. The overwhelming majority of scientists now consider that climate change as caused by emissions of greenhouse gases to be an unequivocal fact. While there is a critical need to reduce these emissions and transition to more sustainable sources of energy, agencies are also recognizing the need to incorporate climate change impacts into their operations. It is clear that climate change exposes both projects (roads, infrastructure, etc.) and the environment to direct, indirect, and

cumulative risks that may render a previously practicable project infeasible or imprudent, due to either impacts to the project, impacts to the environment, or in some cases both.



Flamingos, Ding Darling National Wildlife Refuge (USFWS)

This paper focuses on how climate change adaptation, or the process of assessing and reducing climate change risks, can and should be incorporated into agency implementation of NEPA in order to achieve agency programs and to enhance the resilience of communities and ecosystems to climate impacts. We include an analysis of how agencies incorporated climate change adaptation into recent federal environmental impact statements (EISs) developed under NEPA and recommend improved approaches for addressing climate change impacts into NEPA analysis in the future.

NEPA and Decision-making

Congress enacted the National Environmental Policy Act (NEPA) in 1969, creating a framework and process by which federal agencies are required to consider the effects of their actions on the environment. The statute itself lays out several purposes of the Act:

- "[T]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment;
- To promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man;
- [And] to enrich the understanding of the ecological systems and natural resources important to the Nation" (42 U.S.C. § 4321).

NEPA establishes "a set of 'action-forcing' procedures that require that agencies take a 'hard look' at environmental consequences." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). At the same time, however, "NEPA itself does not mandate particular results, but simply prescribes the necessary process." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). This process generally involves three phases:

- Deciding if NEPA applies to an action;
- Conducting a preliminary evaluation, called an Environmental Assessment to determine if the action will "significantly affect the quality of the human environment" 42 U.S.C. 4332(2)(c); and,
- In the event that the action may do so, preparing an Environmental Impact Statement.



Flowering Barrel Cacti (USFWS)



Great Egret (USFWS)

The Environmental Impact Statement (EIS) discloses impacts of a proposed action, evaluates alternatives, and identifies irreversible and irretrievable commitments of resources—for "major actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). An EIS serves two purposes:

"First, [i]t ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts. Second, it guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision." *DOT v. Public Citizen*, 541 U.S. 752, 768 (2004).

An EIS must be prepared early enough "so that it can serve practically as an important contribution to the decisionmaking process and will not be used to rationalize or justify decisions already made." 40 C.F.R. § 1502.5.

Contents of an EIS

NEPA regulations outline the format of the EIS, with key elements including the statement of "purpose and need" outlining the rationale for federal action (40 C.F.R. § 1502.13), details on the "alternatives including the proposed action (1502.14)," a description of the "affected environment" (1502.15), and a thorough discussion of the "environmental consequences" (1502.16) of each alternative.



National Forest System (USFS)

Alternatives

An EIS must include "a detailed statement...on... alternatives to the proposed action. 42 U.S.C. § 4332(2)(c). The alternatives section is the "heart of the [EIS]" and "should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14. Agencies must ensure that the "EIS's selection and discussion of alternatives fosters informed decision-making and informed public participation." California v. Block, 690 F.2d 753 (9th Cir. 1982). "The existence of reasonable but unexamined alternatives renders an EIS inadequate." Ctr. for Biological Diversity v. United States DOI, 623 F.3d 633, 642 (9th Cir. 2010).

Affected Environment

The EIS "shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration" (15012.15). Neither the statue nor the regulation contain a definitive list resources that must be described; however, a number of agencies provide lists of elements, which generally include characteristics of the natural environment (water, air, wildlife and habitat, geologic and aesthetic resources), the built environment (infrastructure, transportation, land use, recreation, and public services), human health (risk of exposure to natural disasters, hazardous materials, and disease), and environmental sustainability (Bass et al. 2001, pp. 111-112).

Environmental Consequences

The Environmental Consequences section "forms the scientific and analytic basis of the comparisons" between the various alternatives, with respect to their impacts on the affected environment. When determining the effects of an action, agencies must consider direct, indirect, and cumulative effects. 40 C.F.R. § 1508.25(c).

Direct effects are caused by the action and occur at the same time and place. 40 C.F.R. § 1508.8. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. 40 C.F.R. § 1508.8. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. 40 C.F.R. § 1508.8.

The cumulative impact of an action 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 taking place over a period of time.

The discussion of environmental consequences should also include "means to mitigate adverse environmental impacts" (1502.16h).



Sonoran Desert Tortoise (USFWS)

NEPA and Climate Change

To date, there has been very little case law pertaining to the adaptation aspect of climate change analysis. An analysis of all 201 climate change litigation cases filed through 2010 found that not a single one addressed "substantive adaptation regulation and enforcement," though the authors assert that "one can reasonably foresee actions being filed to require legislative or agency action on a statute, rule, policy, or permit to require new or more extensive climate change adaptation measures, such as to require a coastal development permittee to retain wetlands as a buffer against sea-level rise" (Markell & Ruhl 2012).

As the most significant piece of federal legislation guiding environmental analysis and decision-making, NEPA clearly has a role to play in how projects with a federal nexus prepare for climate change. Since climate change is one of the most important environmental issues to emerge in the past few decades, and promises to remain so for the foreseeable future, it is increasingly critical for agencies to thoughtfully and thoroughly consider climate change, from both an emissions and adaptation standpoint, as part of NEPA analysis, particularly in Environmental Impact Statements.

In order to help agencies improve their consideration of climate change, the Council on Environmental Quality (CEQ) in February 2010 released Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas [GHG] Emissions. The Draft Guidance indicated that relevant climate information includes two distinct elements:

"(1) The GHG emissions effects of a proposed action and alternative actions; and (2) The relationship of climate change effects to a proposed action or alternatives, including the relationship to the proposal design, environmental impacts, mitigation and adaptation measures."

The draft guidance explicitly states that climate change will affect the decision-making process under

NEPA through both the outcome of the proposed action itself, and by introducing novel stresses to the affected environment:

"For instance, climate change can affect the integrity of a development or structure by exposing it to a greater risk of floods, storm surges, or higher temperatures. Climate change can also increase the vulnerability of a resource, ecosystem, or human community, causing a proposed action to result in consequences that are more damaging than prior experience with environmental impacts analysis might indicate...Climate change can magnify the damaging strength of certain effects of a proposed action."

The guidance clearly indicates that NEPA documentation should take climate change into account for any and all resources for which the effects of a proposed action might interact with climate change impacts. The guidance uses as an example water withdrawals in a warming and drying climate, but it is clear that the guidance envisions the full suite of potential impacts and resources should be considered:

"Agencies should consider specific effects of the proposed action (including the proposed actions' effect on the vulnerability of affected ecosystems), the nexus of those effects with projected climate change effects on the same aspects of our environment, and the implications for the environment to adapt to the projected effects of climate change."

The guidance indicates that the analysis should cover the "no action" alternative as well as to the proposed action and the various other considered alternatives. It provides suggestions for dealing with uncertainty, using current science, inclusion of climate change impacts in monitoring plans, and inclusion of impacts to vulnerable communities, including Tribes and subsistence resources.

Analysis of Recent Federal EISs

The CEQ guidance has received considerable attention since its release, but the interest has revolved primarily around the GHG emissions aspects. For instance, the Columbia University Center for Climate Change Law (CCCL) released an assessment of EIS coverage of climate change issues (Woolsey 2012). CCCL addressed five categories of impacts: 1) direct operational impacts, specifically emissions from on-site operations and management; 2) the use of electricity that was generated off-site; 3) transportation of people and goods to and from the facility during construction and operation; 4) emissions resulting from the production of construction materials; and 5) impact of climate change on the project.

Importantly, from our perspective, this analysis did not assess the impacts of the project on aspects of the affected environment that are also being or likely to be impacted by climate change in the future. In addition to being a clearly articulated aspect of the guidance, we consider this to be very important in order to fully and accurately evaluate impacts, particularly to aquatic and terrestrial habitat and biodiversity, including species protected under the Endangered Species Act. We thus conducted our own analysis of EISs in order to understand in detail how well federal agencies were incorporating the adaptation-related portions of the CEQ climate change guidance.



Endangered Manatee, Crystal River National Wildlife Refuge (Keith Ramos, USFWS)

We assessed 154 Final Environmental Impact Statements that were released from July of 2011 through April 2012. By using a start date nearly 18 months after the publication of the guidance, we sought to maximize the time and opportunity available for agencies to digest and apply the recommendations. We outlined a set of questions based on the various elements discussed in the guidance narrative:

1) Does the EIS include relevant and recent information?

Page 8 of the draft guidance describes sources of "the best scientific information available," including the materials from the U.S. Global Change Research Program. Though not explicitly stated in the guidance, we considered use of the 2007 report of Intergovernmental Panel on Climate Change (IPCC) to be acceptable, or other peer-reviewed sources from the past five years. Most of the EISs that discussed climate change used these; however, one of the EISs that we read used outdated material from the 2001 edition of IPCC report as its main reference.

2) Does the EIS include downscaled modeling?

Downscaled modeling is recommended (page 8) to remove bias and uncertainty, and maximize applicability to local project scales.

3) Are projections made using appropriate timescales?

Page 7 of the guidance contains a reminder that actions with long-term utility or environmental consequences should assess their design parameters and environmental impacts using projections out to these time scales.

4) Does the EIS discuss the impact of climate change on the reasonably foreseeable future condition of affected resources under NO ACTION?

5) Does the EIS discuss the impact of climate change on the reasonably foreseeable future condition of affected resources under the various ALTERNATIVES?

We considered questions 4 & 5 to be of central importance in our assessment. As will be described below, most EISs failed to analyze these questions in detail, and very few did so for more than a small subset of potentially affected resources.

6) Does the EIS discuss the impact of climate change on the success or outcome of proposed action?

This question assesses whether the design elements of the project itself include preparation for future extreme weather events, sea level rise, or other potential climate impacts.

7) Does the EIS identify and work through climate related uncertainties?

While uncertainties about exact impacts may result from scenarios, model outputs, or other sources, the guidance envisions that agencies will clearly identify sources of uncertainty and will discuss reasonably foreseeable future conditions "drawn as distinctly as the science of climate change effects will support."

8) Does the project include a monitoring program adequate to detect effects of climate change?

The guidance strongly encourages that monitoring to understand climate change effects and to guide adaptation efforts be incorporated into the monitoring conducted in accordance with 40 CFR 1505.3.

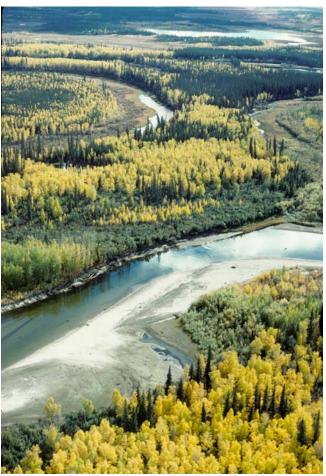
9) Does the agency discuss the impact of climate change on vulnerable human communities?

The guidance specifically refers to Tribal and Alaska Native communities and subsistence resources, but could be applicable to other environmental justice issues as well.

10) Does the mitigation section of the EIS discuss ways to mitigate (*sensu* NEPA, not IPCC) the project's impacts to reduce climate change effects?

As described above, mitigation of impacts is an important aspect of the NEPA decisionmaking process. In this context, mitigation refers to avoiding and minimizing impacts to affected resources or to the project itself. This is distinct from the IPCC's sense of climate change mitigation via reduction of greenhouse gases.

Any assessment of adherence to a set of published guidelines begs the question of whether the guidelines themselves are sufficient to fully address the question at hand. It is our opinion that an ideal approach to climate change planning and adaptation would be broader than that envisioned by the draft guidance, and we will lay out a case for a more comprehensive approach to incorporating climate change into NEPA planning in the Recommendations section at the end.



Fall on the Yukon Flats (Ted Heuer, USFWS)

Results and Discussion

The level of incorporation of climate change in the 154 final EISs varied widely, from completely ignoring the issue, to mentioning it but claiming the impacts were too uncertain for further consideration, to concerted efforts to incorporate climate change adaptation into the analysis of alternatives. None of the EISs comprehensively evaluated climate change impacts across the full range of resources that it could conceivably impact, for the full range of alternatives presented in the analysis. We were, however, able to categorize each EIS's performance on climate change adaptation within one of the following six groups, which will be discussed individually below:

- Moderate to good incorporation of climate change into affected environment & alternatives comparison
- Limited consideration of climate impacts to project and affected environment
- Acknowledge potential impacts to project, but not to affected environment
- Climate change discussion in EIS refers only to emissions, not to impacts
- Mention climate change briefly but no emissions or impacts analysis
- No mention of climate change in the EIS

A complete listing of the EISs, organized by category, can be found in Appendix A. Table 1 summarizes the results across these six categories, organized by lead agency and type of project. Land, coastal and water management agencies accounted for the majority of the final EISs that were released during the time period of our analysis. As mentioned above, this category dominated the group of best-performing EISs; however, actions on these lands also span the full range of levels of analysis. The National Park Service and the U.S. Army Corps of Engineers, for instance, had projects in both the top and bottom categories. Transportation and energy-related EISs, and projects from agencies that don't focus on natural resources, tended to mention

climate change briefly or not at all, or to only consider it with respect to greenhouse gas emissions.

One agency, the U.S. Forest Service, had EISs that fell into all six categories, from fairly thorough analysis to no mention of climate change. This held true when looking across the various types of projects analyzed by agency in the various EISs (see Table 2). For instance, some forest management EISs gave fairly detailed consideration to climate change and its implications for the future of the forest, while others barely or never mentioned it, including one on a national forest that identified drought, fire and bark beetles as ongoing management issues.



California Wildfire (Dennis Rein, InciWeb)

Moderate to good incorporation of climate change into affected environment & alternatives comparison

Fifteen EISs, or ten percent of the ones we analyzed, contained sufficient analysis of climate change adaptation to compare their incorporation of the specific elements within the adaptation section of the 2010 draft guidance. With the exception of one road & transit project, all of the EISs that best addressed climate change adaptation involved federal land management or water or coastal resources management.

It should be reiterated, however, that none of these fully integrated climate change into the alternatives comparison as envisioned by the guidance. No EIS received full marks for all the elements that we assessed. Further, the treatment of "Impact of climate change on reasonably foreseeable future condition of affected resources" under "No Action" and under "Alternatives," was a weakness for many EISs. It was common for this very critical aspect of the analysis to cover only a small subset of the elements of the affected environment, to fail to make a full comparison between the various alternatives, or to use short and qualitative, or pro forma statements rather than full analysis based on the best available science.



Key Deer (USFWS)

2) Limited consideration of climate impacts to project and affected environment

These EISs show some consideration to climate change as it impacts their project and resources of concern, but did not give the question the kind of detailed analysis that the 2010 NEPA Draft Guidance envisions. The majority of the 26 EISs (17% of EISs reviewed) that fell into this category were put forth by natural resources agencies.

The exact nature of the climate change discussion varies widely in this group. Some EISs describe it as something they want to monitor. Some acknowledge it but conclude it's not relevant to their project, due to either the time scale or the type of activity being undertaken. Given, however, that the effects of climate change are being felt already, we did not find this to be a compelling excuse for most projects, with the possible exception of one EIS proposing a temporary art installation. Still other EISs make generalizations that the preferred alternative will be beneficial to resources in question

because it is designed or intended to improve resilience. One argued for instance that:

"Climate change may significantly impact species in the future, but the level of impacts cannot be quantified at this time, nor is the timeframe known in which these impacts will occur. Actions in this document are expected to reduce or cap harvest of species managed by the Council; thus these actions may partially mitigate the negative impacts of global climate change on these species." [Amendment 18A to the Fishery Management Plan for the Snapper-Grouper Fishery of the South Atlantic Region, To Limit Participation and Effort in the Black Sea Bass Pot Fishery, South Atlantic Region, NC, SC FL and GA].

These generalizations may indeed be true; however, the EISs that ended up in this category tended to make such assertions without supportive data or modeling. They were thus not deemed to be top performers with respect to climate analysis.

Acknowledge potential impacts to project, but not to affected environment

Eight EISs (5% of EISs reviewed) demonstrated a recognition of potential climate change impacts, but considered them only with respect to the outcome of the project itself, while failing to acknowledge climate change impacts on the resources affected by the project. This category included road and bridge projects that recognized the increased potential for flooding in the future, a building that noted a need to incorporate higher levels of stormwater management protection, an invasive species removal project that questioned its own prospects for success, and water operations projects that realized a need to plan for wider swings of precipitation in the future.

4) Climate change discussion in EIS refers only to emissions, not to impacts

In one-quarter (38) of the Environmental Impact Statements we assessed, the discussion of climate change considered only the project's greenhouse gas emissions footprint, with no mention of potential impacts to either the project or affected resources, let alone any consideration of adaptation measures for these impacts. This category was dominated by energy and transportation projects, particularly renewable energy generation proposals that touted their emissions-free energy production, and road and public transit projects that aimed to reduce traffic congestion or provide alternatives to car travel. The level of detail in the emissions calculations varied widely among these projects as well.

Mention climate change briefly but no emissions or impacts analysis

Nearly one-third of the 153 Environmental Impact Statements that we reviewed fell into this category: those that gave a brief mention of climate change somewhere in the EIS, but made no effort to incorporate analysis of either the causes or the effects within the context of the environmental impacts of the any of the alternatives.

Many of the statements use one of several different rationalizations to explain why no further analysis was given: uncertainty as to the impacts, not considered relevant based on the time scale, they didn't have a methodology to calculate their emissions, they assumed that the various alternatives were similar in their effects, or claimed climate change is global so their localized project couldn't possibly impact it. For instance, one management plan attempted to dispense with the problem early on in its discussion:

"Although climatologists are unsure about the long-term results of global climate change, it is clear that the planet is experiencing a warming trend that affects ocean currents, sea levels, polar sea ice, and global weather patterns. These changes will likely affect winter precipitation patterns and amounts in the park; however, it would be speculative to predict localized changes in snow water equivalency or average winter temperatures, in part because many variables are not fully understood and there may be variables not currently defined. Therefore, the analysis in this document is based on past and current weather patterns and the effects of future climate change are not discussed further." [Yellowstone National Park Draft Winter Use Plan].



Grizzly Bear with Cubs, Yellowstone National Park (NPS)

6) No mention of climate change in the EIS

While the vast majority of the EISs we reviewed at least acknowledged the existence of climate change, even if many did not handle it in detail (see above), nineteen (12% of EISs reviewed) of the EISs we assessed did not contain any mention of climate change at all. Oddly, this list includes a number of projects for which the impacts of climate change will likely have important consequences for either the success of the project itself or for the resources impacted by the project, including: water management in the Everglades, storm surge damage minimization along the coast of Florida, timber management in a forest with bark beetle infestations, and an application for a hydroelectric license.

Table 1: Number of Environmental Impact Statements in each performance category, organized by lead agency.

		Moderate to good	Limited	Acknowledge	Climate	Mention	No mention
		incorporation of	consideration of	potential	change	climate	of climate
		climate change	climate impacts	impacts to	discussion in	change	change in
	Agency	into affected	to project and	project, but	EIS refers only	briefly but	the EIS
		environment &	affected	not to	to emissions,	no emissions	
		alternatives	environment	affected	not to	or impacts	
		comparison		environment	impacts	analysis	
	U.S. Forest Service	5	11	1	3	12	3
	NOAA	1	3		1 (joint)	7	
	National Park Service	1	3		1	3	2
Land, Water &	U.S. Fish & Wildlife Service	2	2		1 (joint)		
Coastal Management	Bureau of Land Management		1		10	5	1
	NRCS						1
	Bureau of Reclamation	4	1	1			
	U.S. Army Corps of Engineers	1		1	1	4	2
	Federal Highway Admin.	1 (joint)	1	2	3	10	5
Transportation	Federal Transit Authority	1 (joint)		1	5	1	1
	Federal Aviation Authority						1
	Department of Energy				1	2	
	Federal Energy Reg. Cmsn.				1	1	2
Francy Duaduation 0	Nuclear Reg. Commission		1		1	1	
Energy Production &	Tennessee Valley Authority		1		1		
Delivery	Bonneville Power Admin.			1	3		
	Rural Utilities Service				1		
	Bur. Ocean Energy Mgmt.					1	
	Housing & Urban Development				1		
	Department of Defense		2				
	Bureau of Indian Affairs				2		
Human Camilaga	General Services Admin.				2		
Human Services,	National Capital Planning			1			
Development, Financial Sectors	Commission			1			
	National Science Foundation					1	
	National Institutes of Health						1
	Federal Reserve Bank of San				1		
	Francisco				1		
	TOTAL	15 (10%)	26 (17%)	8 (5%)	38 (25%)	48 (31%)	19 (12%)

Table 2: Forest Service EIS performance, organized by type of project analyzed. This table illustrates the wide variation of adaptation coverage within a single agency, and even between similar types of projects.

Forest Service project type	Moderate to good incorporation of climate change into affected environment & alternatives comparison	Limited consideration of climate impacts to project and affected environment	Acknowledge potential impacts to project, but not to affected environment	Climate change discussion in EIS refers only to emissions, not to impacts	Mention climate change briefly but no emissions or impacts analysis	No mention of climate change in the EIS
System-wide planning and actions	1				1	
Forest management (logging, fuels reduction, invasives removal)	2	7	1		3	2
Grazing		1		1	2	
Roads and travel management	2	2			3	
Renewable energy				1		
Fossil fuels		1			1	
Power line				1	1	
Minerals					1	
Special use permit (guide operations)						1
TOTAL	5	11	1	3	12	3

Recommendations

Agencies clearly still have a long way to go in order to effectively incorporate consideration of climate change into their NEPA analyses. Even the best-performing EISs tended to incorporate climate change into either a limited number of the elements of the affected environment, failed to make a full comparison between the various alternatives, or used short and qualitative statements rather than full analysis based on the best available science.

The draft guidance excluded federal natural resource agencies. This was a major omission and needs to be rectified in the final guidance. Natural resource management decisions are some of the most sensitive and vulnerable to climate change impacts, and natural resources agencies need to be provided direction and support for understanding and planning for these impacts. Furthermore, the fact that most of the EISs that did the best job of incorporating climate adaptation were conducted by natural resource agencies and involved land management projects indicates that these agencies are, at least to some extent, willing and able to make these important considerations.

Nonetheless, there is room for improvement in all agencies. It seems likely that there currently exist three major barriers to robust climate change impacts analysis. First, the fact that the guidance remains in draft form more than three years after its initial release has probably reduced its utility for agencies that might be interested in conducting full analyses, and served as an excuse for agencies that are less inclined to do so. We recommend that CEQ issue finalized guidance as soon as possible.

Second, the number of EISs that cited uncertainty about climate change and its impacts on natural communities indicates that there is a disconnect between the research science community and the planning and analysis community. The past several years have seen an explosion of new information about climate change, including detailed projections of future impacts at the regional and local level across much of the country. However, finding and understanding these results can be a challenge. The administration should create a "one-stop shop" for climate change information that collects the latest data and analysis, presents it in a way that's accurate and easy to understand.

Finally, the draft guidance itself lacks detail about how to go about conducting a robust analysis of the interaction between a proposed action, the various other alternatives, climate change, and other sources of cumulative impacts. We present below recommendations for improving the incorporation of such analyses.

Beyond the Draft Guidance:

Defenders of Wildlife's Recommended Best Management Practices

The February 2010 draft NEPA and climate change guidance indicates that during the scoping process, "agencies determine whether climate change considerations warrant emphasis or de-emphasis." We contend that given the rapidly accelerating pace of climate changes and their wide-ranging impacts to many aspects of the human environment, climate change considerations will most likely warrant emphasis in nearly all federal actions (with few exceptions, like some temporary actions). This process should begin as early as the articulation of the purpose and need (40 CFR §1502.13), which should be examined to determine if they are robust in a changing climate. For instance, a project designed to protect a coastal community from storm surge will not be responding to the right "need" if it only accounts for historic sea and surge levels.

CASE STUDY 1: Climate Change in the Purpose and Need

Several of the EISs we analyzed included climate change as part of the Purpose and Need. The EIS for the National Forest Rule, for instance, contains eight purpose statements, and two of these pertain to climate change:

- 1. Emphasize restoration of natural resources to make NFS lands more resilient to climate change, protect water resources, and improve forest health.
- 2. Contribute to ecological, social, and economic sustainability by ensuring that all plans will be responsive and can adapt to issues such as the challenges of climate change; the need for forest restoration and conservation, watershed protection, and species conservation; and the sustainable use of public lands to support vibrant communities.

The Yakima Basin Water Resource Management Plan also indicates in its Purpose and Need that the plan is aimed at addressing climate changedriven "changes in runoff and streamflow patterns, which would increase the need for prorationing and reduce flows for fish."

For the most part, however, climate change enters the analysis later, and most of the analyses did not frame the initial purpose and need in a way that included responding to a changing climate. For instance, the Ross Lake National Recreation Area EIS, while overall quite strong in its analysis of climate change, makes no mention of it in the purpose or need, despite the fact that climate changes have a high likelihood of impacting critical resources in the recreation area over the life of the plan, including wilderness, recreation opportunities, and the Skagit Hydroelectric Project.

The abstract of the Grey's Mountain EIS includes nine ecological restoration goals, including to: "provide sustainable delivery of ecosystem services, such as clean water and

carbon sequestration, in an era of climate change." The purpose and need section, however, discusses multiple objectives related to wildfire risk, without ever mentioning how a warming climate will exacerbate that risk. Snow Basin Vegetation Management also articulates purpose and needs of managing for historical range of variation, improved sustainability, landscape resilience, and forest resource use, all without mentioning the potential for climate change to affect these goals.

The coastal projects also failed to consider at the outset how climate change might affect the purpose and need. The Biscayne Bay project, whose impacts are later analyzed in the context of climate change, summarizes its major objectives as "improving and/or restoring the proper quantity, quality, timing and distribution of water in the natural system while also addressing other concerns such as urban and agricultural water supply and maintaining existing levels of flood protection" (emphasis added). Another coastal wetlands project, Suisun Marsh, sets out a series of objectives related to habitat, land use, flood protection and water quality, but does not put those in the context of sea-level rise until later in the document.



Ross Lake (Flickr / Pictoscribe - Home Again)

Environmental Assessments and Findings of No Significant Impacts

In complying with NEPA, agencies must determine whether to prepare an Environmental Assessment or an Environmental Impact Statement (§1501.4). The decision on whether to prepare an EA or EIS largely rests on an agency's determination of the significance of environmental effects of the proposed action (§1508.13). The significance of the effects of a proposed action must be considered in the context of climate change. Seemingly minor effects in the absence of climate change may in fact be made significant by climate change. This is broadly captured under existing regulations:

"Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts" (§1508.27).



Wildfire, Okanogon-Wenatchee National Forest (NICC)

Additional guidance would benefit agencies in implementing this finding in the context of climate change, in addition to the recommended inclusions of climate change below.

CASE STUDY 2: Climate Change within Cumulative Effects Analysis

The EIS for the Interstate 5 Columbia River Crossing conducted its entire analysis of climate change within the Cumulative Effects section, rather than within the individual impact topic sections. Under this section (3.19.10), the EIS covers both emissions and adaptation, discussing climate change effects both on the project and on affected resources.

The EIS utilized modeling from the Washington State Climate Impacts Group to project changes in temperature, precipitation, sea level rise, and impacts to salmon; however, the section is brief and these projections are presented as bullet points. The EIS asserts that the locally preferred alternative (LPA) is designed to be resilient to climate change effects, particularly sea level rise and flooding.

The LPA outlines project aspects that "consider the anticipated effects of climate change, and/or incorporate elements to improve the project's resilience to anticipated climate change-induced impacts," specifically through avoidance of impacts to floodplains, and by managing stormwater and returning some existing impervious surface to a more natural state.

Climate change is also discussed briefly in the section on cumulative effects to ecosystems (3.19.20), but only with respect to potential impacts to fisheries. Here they conclude that despite potential climate-induced impacts to stream flow, other anthropogenic impacts to various salmon and trout populations are more pressing than climate change.

Preparers, Timeframe, and Scope

Early in the process, the lead agency should ensure that the EIS preparation team includes one or more individuals with expertise in climate change and incorporation of climate change impacts into environmental analysis and planning.

Climate considerations should also be worked appropriately into the temporal and geographic scope of the project. The timeframe of analysis is relevant to how far into the future to analyze "reasonably foreseeable future actions" under Cumulative Impacts (§1508.7) and definition of "Significance," which explicitly includes both long and short term effects (§1508.27).

The draft guidance suggests that "Climate change effects should be considered in the analysis

of projects that are designed for long term utility." However, even shorter duration projects can have effects, like habitat modification, that will interact with climate change over time. Thus, the analysis timeframe should be long enough to cover the period over which the project will potentially be affected by and interact with climate change effects.

Similarly, the geographic scope of the analysis, as referred to under Affected Environment (§1502.45) and Context (§1508.27), should be large enough to account for potential range shifts in affected species and habitats, potential changes throughout an entire watershed, and similar landscape level effects that would affect the project and project impacts.

CASE STUDY 3: Evaluation and selection of climate science and models

The Windy Gap Firming Project (WGFP) EIS did a particularly good job of comparing the available models for projection of future climate impacts, and providing a rationale for the one they selected (pp. 2-49 to 2-51). They considered the Colorado River Water Availability Study and two water resources reports issued by the Bureau of Reclamation, and determined that the former "projects climatic changes on a more appropriate scale to the area being studied for the WGFP." This section also discussed issues such as method of downscaling, the difficulty of accounting for Colorado's topographic complexity, and model agreement over different time frames. The project then summarized the projected results of the selected model.



Colorado River (USFWS)



Lake Michigan Coast (NOAA)

On the other end of the climate science spectrum, the Illinois Coastal Management Plan: while it does include climate change impacts in its analysis and articulates adaptation benefits, it does so with some of the weakest attribution language of any EIS we reviewed: "Climate change may be due to natural external factors, such as changes in the emission of solar radiation or slow changes in the Earth's orbital elements, natural internal processes of the Earth's climate system, anthropogenic forcing, such as an increase in the concentration of greenhouse gases, or combinations of these factors."

Alternatives

As part of the process of development of alternatives to the proposed action (§1502.14), the agency should consider whether climate change may impact the ability of each alternative to meet the purpose and need. This should include an assessment of the vulnerability of the various project alternatives to relevant climate change impacts (higher storm surges, extreme precipitation events, increased heat waves, etc.).

Where possible, agencies should incorporate into alternatives design elements that reduce the likelihood or severity of climate change impacts (build coastal structures at higher elevation; use heat, wind, or water-resistant materials; reduce fire risk at the wildland-urban interface; increase roof reflectivity on urban buildings, etc.). Alternatives that fail to meet the purpose and need due to projected future climate change effects should be eliminated, and this should be noted in the discussion.

Affected Environment

As part of the EIS process, the agency discusses the Affected Environment (§1502.15), laying out which aspects of the natural environment (water, air, biodiversity, soils, aesthetics), built environment, human health, and sustainability of resources might be affected by the alternatives. As this section is the basis for comparisons of consequences, it is critical that this section cover the full range of elements that could face effects (including cumulative effects from climate change). The draft guidance rightly states that "The focus of this analysis should be on the aspects of the environment that are affected by the proposed action and the significance of climate change for those aspects of the affected environment." The agency should ensure that the environmental resources being considered includes the full suite of elements that could face effects from the project, and integrate climate change threats into the discussion of each element. Climate change is expected to worsen over time, and these changing effects on ecosystems should be incorporated into the Affected Environment and no action alternative sections of an EIS.

CASE STUDY 4: Climate Consideration in Development of Alternatives

A few EISs did a good job of crafting alternatives with climate change response in mind. Almost invariably, these were the ones that had recognized climate change as a significant issue or an element of the purpose and need at the outset.

The National Forest Land Management Planning EIS goes into detail about how several alternatives contain provisions for planning, managing and monitoring in the context of climate change. The Biscayne Bay EIS assesses the effect of sea level rise on the success of the preferred alternative, and concludes: "Taking into account sea level rise, the period of maximal project benefits will occur during the period between 10 and 20 years post-construction. After 20 years until the end of project life 30 years later project benefits are expected to decrease as a result of SLR."

The Yakima River Basin water plan EIS also discusses the likelihood of climate change impacting the success of the proposed elements of the project, concluding that "The Integrated Plan would provide multiple benefits to water supply, agriculture, and fish while improving the ability of water managers to adapt to future climate changes."

The Willapa National Wildlife Refuge Comprehensive Conservation Plan also developed its alternatives with the recognition that it must begin preparing for long-term changes: "While this CCP covers a 15-year time span, it is clear that for the Refuge to adequately plan for climate change, staff would have to look further into the future. During the 15-year time span of this CCP, the Refuge would begin a focused effort to plan on how best to address climate change effects in the Willapa Bay estuary."

CASE STUDY 5: Comprehensiveness of issues covered in the climate change discussion.

Another area of difficulty for the EISs that we reviewed was the breadth of coverage of climate change: they either covered only a subset of likely climate impacts, or they were limited in the scope of the resources that were affected.

The Suisun Marsh Restoration Plan was in the first category. This EIS does a good job of analyzing the project with respect to sea level rise: "Within the 30-year planning horizon, the proposed project would result in a beneficial impact compared to the No Action alternative related to the loss of wetland habitat, ecosystem health, and flood risk associated with climate change-induced sea level rise." This EIS is much weaker in discussing other types of climate change impacts, with no assessment of potential changes in precipitation, increased air and water temperature, or the spread of invasive species, all of which could affect the project's success and the condition of resources considered.

Several EISs fell into the second category, covering a wide array of potential climate changes, but only assessing their effects on a limited subset of resources within the affected environment. The Sears Point Watershed Restoration Project mentions a number of projections for climate change effects in California, such as more extreme heat, reduced snowpack, and changes in the distribution of plant communities. However, analysis is silent on the effects these changes might have on the biological resources covered in the EIS. Similarly, the Upper Truckee River Restoration EIS discusses the potential for climate change effects in the sections on Hydrology & Flooding and Geomorphology & Water Quality, but the impacts of climate change are not discussed at all in the Biological Resources section.



Suisun Marsh (CA Department of Fish and Wildlife)

Environmental Consequences

At the heart of the analyses in an environmental impact statement is the Environmental Consequences section (§1502.16), which compares "The environmental effects of alternatives, including the proposed action" (§1502.16d) on various elements of the affected environment that were defined previously. Full incorporation of climate change into this analysis is warranted by the fact that the effects of climate change constitute a cumulative impact of "past, present, and reasonably foreseeable future actions" (§1508.7) that release greenhouse gases.

The 2010 draft guidance offers broad principles but not detailed discussion about how to undertake assessment of these effects:

"Agencies should consider the specific effects of the proposed action (including the proposed action's effect on the vulnerability of affected ecosystems), the nexus of those effects with projected climate change effects on the same aspects of our environment, and the implications for the environment to adapt to the projected effects of climate change.

"An agency typically starts with an identification of the reasonably foreseeable future condition of the affected environment for the "no action" alternative, based on available climate change measurements, statistics, observations, and other evidence... The reasonably foreseeable affected environment should serve as the basis for evaluating and comparing the incremental effects of alternatives" (40 CFR §1502.15).

We recommend that guidance should be provided that requires each EIS, in its analysis of the alternatives' impacts on each aspect of the affected environment, include a discussion of the effects to that resource from climate change, and the extent to which the impacts of the alternative will be exacerbated by climate change impacts, and its interaction with other threats, stressors, and cumulative impacts. For each alternative, this analysis should explicitly answer each of the following questions, using the best available scientific information:

- Will exposure to climate change likely result in impacts to the resource (e.g., species, habitat, or ecosystems of concern)?
- 2. Will the effects of climate change compound the impacts of the alternative on the resource?
- 3. Will climate change compound or exacerbate the cumulative effects of other past, present and reasonably foreseeable actions on the resource?
- 4. Are there reasonably foreseeable human responses to climate change that will themselves be cumulative effects (e.g., increased water withdrawals to meet agriculture demand during drought)?
- 5. Do the various alternatives differ in their aggregate impacts when climate change is factored in?



Desert National Wildlife Refuge (USFWS)

CASE STUDY 6: Comparing Climate Change Effects of Alternatives

Given the centrality of the comparison of alternatives' environmental consequences in the NEPA process, we were particularly interested in how well various EISs documented the climate change adaptation elements of the alternatives presented. Unfortunately, this is an area where significant improvement is needed: none of the documents we reviewed did a thorough job of comparing alternatives, according to the criteria we discuss above.

The Ross Lake NRA EIS was a standout for being explicit about how the preferred alternative would entail climate change adaptation responses, like rerouting of roads that experience increased flooding, revegetating disturbed areas to prevent landslides. Still, the EIS described climate change impacts to various resources as being similar under all alternatives.

Some EISs performed good comparisons, but limited them to certain resources; for instance, the Grey's Mountain Ecological Restoration Project compared outcomes related to Fire & Fuels in a detailed manner. For the other resources, it spent more time discussing how no action and a limited action alternative would lead to resource degradation under climate change, without making an affirmative case that the proposed action would lead to improvements.

The Biscayne Bay Coastal Wetlands EIS did the most systematic effort at comparing the different alternatives to one another. However, this was done with a series of simple statements that lacked references or supportive text: "Alternative O is somewhat less capable of mitigating the effects of climate change-induced reduction in rainfall; however it is less likely to fail due to increased evapotranspiration compared to Alternative Q."

Several EISs only discussed specific climate outcomes for the preferred alternative, instead of comparing all alternatives. The Snow Basin EIS states that: "All three action alternatives manage the forest ecosystem so that it is better able to accommodate climate change and to respond adaptively as environmental changes accrue." The Deschutes and Ochoco national forests' travel management plan also compared the alternatives to no action, but did not differentiate between alternatives.



Opal Creek Wilderness, Oregon (USFWS)

Mitigation and Monitoring

Mitigation as defined by NEPA, includes actions to avoid impacts; minimize impacts; rectify impacts; reduce or eliminate impacts; and compensate for impacts (§1508.20). The draft guidance broadly states that both emissions reductions and adaptive responses are included here, but provides very little detail as to how to proceed: "The agency should identity alternative actions that are both adapted to

anticipated climate change impacts and mitigate the GHG emissions that cause climate change."

In addition to mitigation via greenhouse gas reduction, the EIS should discuss opportunities to further mitigate potential synergistic effects between the preferred alternative and climate change impacts, such as the following suggested for species and habitats:

- 1. Strategies that intervene on a non-climate human activity to help reduce the effects of exposure to climate changes on the species, habitat, ecosystem;
- 2. Strategies that restore species, habitats, ecosystems to be more resilient to climate factors;
- 3. Strategies that protect/restore occurrences of the species, habitat, ecosystem that may be less affected by climate.

Though not required statutorily, an important aspect of successful mitigation is a monitoring strategy to ensure the effectiveness of mitigation measures (§1505.2c). The draft guidance states that "In cases where adaptation to the effects of climate change is important, the significant aspects of these changes should be identified in the agency's final decision and adoption of a monitoring program should be considered. Monitoring strategies should be modified as more information becomes available and best practices and other experiences are shared."

We recommend that the guidance should be strengthened to stipulate that the monitoring plan should be implemented (not just considered), and should focus on indicators relevant to both the implementation of adaptation strategies and the effects of climate change and other threats. Monitoring is particularly critical where uncertainties regarding climate change impacts or interacting effects have been identified. This plan should articulate steps to ensure the effectiveness of mitigation strategies, and a means of identifying and addressing problems that are identified through monitoring.

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CASE STUDY 7: Mitigation and Monitoring

Of the fifteen EISs that gave the most attention to climate change, about half included monitoring programs that either explicitly included climaterelated impacts or appeared adequate to detect such changes. These were not necessarily comprehensive, however: for instance, the Windy Gap project only discussed monitoring of water temperature.

Since a number of the projects did state in the purpose or goals that they were attempting to build resilience to climate change impacts (see above), very few also set forth mitigation (sensu NEPA) efforts aimed at reducing project impacts that might interact with climate change. Only two of the fifteen discussed measures to mitigate the project's impacts to natural resources in light of climate change: Windy Gap discussed mitigation of water temperatures, and the I-5 Columbia crossing project included removal of impervious surfaces and managing stormwater to reduce the project's impacts to wetlands in the event of stronger storms and more intense precipitation.

Conclusion

Given the profound impacts of climate change on wildlife and ecosystems, as well as to communities and infrastructure, it is critical that analysis of these impacts be mainstreamed into all levels of planning and analysis. Though it became law when our understanding of climate change was still nascent, the National Environmental Policy Act (NEPA) nonetheless provides a strong foundation for incorporation of climate change into project and programmatic considerations, through its existing framework.

It is clear, however, that the efforts to date to incorporate climate change into NEPA analysis have fallen short of what is needed to understand the myriad ways that the warming of our world will affect communities, ecosystems, and other resources, not to mention the long-term success of individual projects. We urge the Obama Administration to expand on the guidance to include the best management practices that we have outlined, and to issue final guidance in a timely fashion.



Disappearing Sea Ice (NOAA)

Appendix A: List of all Environmental Impact Statements reviewed, organized by level of effort.

1) Moderate to good incorporation of climate change into affected environment & alternatives comparison. The 15 best performing EIS are listed below in order of how well they incorporated climate change according to our criteria, with Ross Lake and the NFMA Planning Rule being the top among all those we reviewed.

Date	Lead Agency	State	Project Name and URL
12/16/2011	National Park Service	WA	Ross Lake National Recreation Area Project, General Management Plan, Implementation, Skagit and Whatcom Counties, WA http://parkplanning.nps.gov/document.cfm?parkID=327&projectID=16940&documentID=43172
02/03/2012	U.S. Forest Service	Multi	PROGRAMMATIC - National Forest System Land Management Planning, Proposing a New Rule at 36 CFR Part 219 Guide Development, Revision, and Amendment of Land Management Plans for Unit of the National Forest System http://www.fs.usda.gov/detail/planningrule/home/?cid=stelprdb5349164
03/30/2012	U.S. Forest Service	CA	Grey's Mountain Ecological Restoration Project, Proposed Forest Management Treatments to Reduce Fire Hazard and Restore Forest Health, Sierra National Forest, Bass Lake Ranger District, Madera and Mariposa Counties, CA http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/76328 FSPLT2 120867.pdf
01/06/2012	U.S. Army Corps of Engineers	FL	Central and Southern Florida Project, Comprehensive Everglades Restoration Plan, Biscayne Bay Coastal Wetlands Phase I Project, To Restore the Natural Hydrology and Ecosystem in an Area Degraded by Drainage Systems and Land Development, Miami-Dade County, FL http://www.evergladesplan.org/pm/projects/docs-28-biscayne-bay-pir.aspx
03/30/2012	U.S. Forest Service	OR	Snow Basin Vegetation Management Project, Proposal to Implementing Commercial Harvest of Timber, Post Harvest Non-commercial Thinning, Whitman Ranger District, Wallowa-Whitman Forest, Baker County, OR http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=25454
03/02/2012	Bureau of Reclamation	WA	PROGRAMMATIC - Yakima River Basin Integrated Water Resource Management Plan, To Meet the Water Supply and Ecosystem Restoration Needs, Benton, Kittitas, Klickitat and Yakima Counties, WA http://www.usbr.gov/pn/programs/yrbwep/reports/FPEIS/fpeis.pdf
12/16/2011	Bureau of Reclamation	CA	Suisun Marsh Habitat Management, Preservation, and Restoration Plan, Implementation, CA http://www.usbr.gov/mp/nepa/nepa projdetails.cfm?Project ID=781
08/12/2011	U.S. Fish & Wildlife Service	WA	Willapa National Wildlife Refuge Draft Comprehensive Conservation Plan, Implementation, Pacific County, WA http://www.fws.gov/willapa/CCP/CCP%20Final.html
04/20/2012	U.S. Fish & Wildlife Service	CA	Sears Point Wetland and Watershed Restoration Project, To Restore Tidal Wetlands and Rehabilitate Diked Wetlands, Sonoma County, CA http://www.sonomalandtrust.org/publications/plans_reports.html
10/14/2011	Bureau of Reclamation	CA	Upper Truckee River Restoration and Golf Course Reconfiguration Project, To Restore Natural Geomorphic Ecological Process, Lake Tahoe, EL Dorado County, CA http://www.restoreuppertruckee.net/eis_eir.html
11/10/2011	U.S. Forest Service	AZ	Coconino National Forest Travel Management Project, Proposes to Designate a System of Road and Motorized Travel, Implementation, Coconino and Yavapai County, AZ http://www.fs.usda.gov/detail/coconino/landmanagement/projects/?cid=stelprdb5263010

09/23/2011	Federal Highways Admin. & Fed. Transit Authority	Multi	Interstate 5 Columbia River Crossing Project, Bridge, Transit, and Highway Improvements, from State Route 500 in Vancouver, WA to Columbia Boulevard in Portland, OR, Funding, US COE Section 10 & 404 Permits, NPDES Permit http://www.columbiarivercrossing.org/CurrentTopics/FEIS.aspx http://www.columbiarivercrossing.org/Library/Type.aspx?CategoryID=35
09/02/2011	U.S. Forest Service	OR	Deschutes and Ochoco National Forest and the Crooked River National Grassland Travel Management Project, Implementation, Deschutes, Jefferson, Crook, Klamath, Lake, Grant and Wheeler County, OR http://tinyurl.com/3j7y4kt http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5326997.pdf
12/09/2011	Bureau of Reclamation	СО	Windy Gap Firming Project, Construct a New Water Storage Reservoir to Deliver Water to Front Range and West Slope Communities and Industries, Funding, NPDES and US Army COE Section 404 Permit, Grand and Larimer Counties, CO http://www.usbr.gov/gp/ecao/wgfp-feis/index.html
12/23/2011	National Oceanic & Atmosph. Admin.	IL	Illinois Coastal Management Program, To Preserve, Protect, Restore, and Where Possible, Enhance Coastal Resources in Illinois http://coastalmanagement.noaa.gov/mystate/docs/ilfeis.pdf

2) Limited consideration of climate impacts to project and affected environment. These 26 EISs show some consideration to climate change as it impacts their project and resources of concern, but did not give the question the kind of detailed analysis that the 2010 NEPA Draft Guidance envisions. They are listed alphabetically by lead agency.

Date	Lead Agency	State	Project Name and URL
07/29/2011	Bureau of Land Mgmt.	СО	Over The River (OTR) Project, Propose to Install a Temporary Work of Art, Require the Use of Federal, Private and State Lands Adjacent to the River, Western Fremont County and Southeast Portion of Chaffee County, CO http://www.blm.gov/co/st/en/fo/rgfo/planning/otr/otr_final_eis/otr_final_eis_documents.html
08/19/2011	Bureau of Reclamation	CA	Nimbus Hatchery Fish Passage Project, To Create and Maintain a Reliable System for Collecting Adult Fish to Allow Reclamation, Rancho Cordova, Gold River, CA http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=5216
04/06/2012	Federal Highways Admin.	CA	Phase II - CA-11and Otay Mesa East Port of Entry Project, Construction of a New Toll Highway (CA-11) and Port of Entry in the East Otay Mesa Area and Commercial Vehicle Facility, County of San Diego, CA http://www.dot.ca.gov/dist11/Env_docs/SR11/Final_tech.html
09/09/2011	U.S. Fish & Wildlife Service	AL	Beach Club West and Gulf Highlands Condominiums Residential/Recreational Condominium Project, Incidental Take Permits for Construction and Occupancy, Consider Issuance of U.S. Army COE Section 10 and 404 Permits, Baldwin County, AL http://www.knowledgemosaic.com/resourcecenter/refwfinalenvironmentalimpactstatementforcondominium.zip
01/20/2012	U.S. Fish & Wildlife Service	TX	Habitat Conservation Plan for Oncor Electric Delivery Facilities, Application for Incidental Take Permit for 11 Federally List Species in 100 Texas Counties http://www.fws.gov/southwest/es/Documents/R2ES/Final Oncor EIS 12-21-11.pdf
10/28/2011	National Oceanic & Atmosph. Admin.	Multi	Generic - Annual Catch Limits/Accountability Measures Amendment for the Gulf of Mexico Fishery Management Council's Red Drum, Reef Fish, Shrimp, Coral and Coral Reefs, Fishery Management Plans, Implementing the National Standard 1 Guidelines http://www.regulations.gov/#%21documentDetail;D=NOAA-NMFS-2011-0143-0009

02/17/2012	National Oceanic & Atmosph. Admin.	Multi	Amendment 18A to the Fishery Management Plan for the Snapper-Grouper Fishery of the South Atlantic Region, To Limit Participation and Effort in the Black Sea Bass Pot Fishery, South Atlantic Region, NC, SC FL and GA http://www.safmc.net/LinkClick.aspx?fileticket=kS1mDi2YAZw%3d&tabid=415
08/26/2011	National Oceanic & Atmosph. Admin.	NC	Gray's Reef National Marine Sanctuary (GRNMS) Research Areas Designation, Establish a Research Area, Implementation, NC http://graysreef.noaa.gov/management/research/pdfs/grnmsresearchareafeis.pdf
01/13/2012	National Park Service	DC	White-Tailed Deer Management Plan, To Develop a White-Trailed Deer Management that Supports Long-Term Protection, Preservation and Restoration of Native Vegetation and other Natural and Cultural Resource in Rock Creek Park, Washington, DC http://parkplanning.nps.gov/document.cfm?parkID=198&projectID=14330&documentID=44824
10/07/2011	National Park Service	WV	New River Gorge National River Project, General Management Plan, Implementation, Fayette, Raleigh and Summers Counties, WV http://parkplanning.nps.gov/document.cfm?parkID=259&projectID=11040&documentID=43316
08/26/2011	National Park Service	AK	Nabesna Off-Road Vehicle Management Plan, Implementation, Wrangell-St. Elias National Park and Preserve, AK http://parkplanning.nps.gov/document.cfm?parkID=21&projectID=20698&documentID=42805
04/13/2012	Nuclear Regulatory Comm.	WA	Generic - License Renewal of Nuclear Plants, Supplement 47 Regarding Columbia Generating Station (NUREG - 1437), Issuance of a Renewed Operating License for an Additional 20 Years, Benton County, WA http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement47/
07/15/2011	Tennessee Valley Authority	Multi	Natural Resource Plan, To Determine How TVA Will Manage It Natural Resource Over the Next 20 Year, Implementation, AL, GA, KY, MS, NC, TN and VA http://www.tva.com/environment/reports/nrp/index.htm
03/16/2012	U.S. Coast Guard	Multi	PROGRAMMATIC - Ballast Water Discharge Standard, Rulemaking for Standards for Living Organisms in Ships, U.S. Waters http://www.regulations.gov/#ldocumentDetail; D=USCG-2001-10486-0468
08/19/2011	U.S. Forest Service	CA	Keddie Ridge Hazardous Fuels Reduction Project, Implementation, Plumas National Forest, Mt. Hough District, Plumas County, CA http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=19040
04/2012	U.S. Forest Service	CA	Algoma Vegetation Management Project http://www.fs.fed.us/nepa/nepa_project exp.php?project=21152
04/06/2012	U.S. Forest Service	ID	Mill Creek - Council Mountain Landscape Restoration Project, Proposed Landscape Restoration Treatment Activities on 51,975 Acres, Council Ranger District, Payette National Forest, Adams County, ID http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=31297
03/16/2012	U.S. Forest Service	МТ	Cabin Gulch Vegetation Treatment Project, Restore Fire-Adapted Ecosystems, Existing and Desired Conditions, Townsend Ranger District, Helena National Forest, Broadwater County, MT http://www.fs.fed.us/r1/helena/projects/helena content.html?project=12512
08/19/2011	U.S. Forest Service	NV	Mountain City, Ruby Mountains, and Jarbidge Ranger Districts, Combined Travel Management Project, Implementation, Humboldt-Toiyabe National Forest, Elko and White Pine Counties, NV http://www.fs.fed.us/nepa/nepa project exp.php?project=27269
11/18/2011	U.S. Forest Service	OR	Marks Creek Allotment Management Plans, Proposes to Reauthorize Cattle Term Grazing Permits, Construct Range Improvements, and Restore Riparian Vegetation on three Allotments, Lookout Mountain Ranger District, Ochoco National Forest, Crook County, OR http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/73402_FSPLT2_060784.pdf

04/27/2012	U.S. Forest Service	SD	Vestal Project, Commercial and Non-commercial Vegetation Treatments and Prescribed Burning to Reduce Mountain Pine Beetle Risk and Fire Hazard, Hell Canyon Ranger District, Black Hills National Forest, Custer County, SD http://www.fs.fed.us/nepa/project_content.php?project=35919
09/02/2011	U.S. Forest Service	UT	Oil and Gas Leasing on Lands Administered by the Dixie National Forest, Implementation, Garfield, Iron, Kane, Piute, and Washington Counties, UT https://fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5324112.pdf
11/18/2011	U.S. Forest Service	UΤ	Black Fork Salvage Project, Proposal to Treat Timer Harvest, Prescribe Fire, and Mechanical Thinning, Uinta-Wasatch-Cache National Forest, Summit County, UT http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=28317
08/12/2011	U.S. Forest Service	WI	Phelps Vegetation and Transportation Management Project, Proposal to Implement Vegetation and Transportation Management Activities, Eagle River-Florence Ranger District, Vilas County, WI http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/664 21 FSPLT2 054757.pdf
03/16/2012	U.S. Forest Service	OR	Wallowa-Whitman National Forest Travel Management Plan, Designate Roads Trails and Areas for Motor Vehicle User, Baker, Grant, Umatilla, Union and Wallowa Counties, OR http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5357087.pdf
03/30/2012	U.S. Navy	WA	Trident Support Facilities Explosives Handling Wharf (EHW-2), New Information, Construction and Operating, Naval Base Kitsap Bangor, Silverdale, WA https://www.nbkeis.com/ehw/Welcome.aspx

3) Acknowledge potential impacts to project, but not to affected environment. These eight EISs demonstrated recognition of potential climate change impacts, but considered them only with respect to the outcome of the project itself.

Date	Lead Agency	State	Project Name and URL
03/09/2012	Bonneville Power Admin.	WA	Mid-Columbia Coho Restoration Program, Proposal to Fund the Construction, Operation& Maintenance of the Program to help Mitigate for Anadromous Fish, Okanogan County, WA http://efw.bpa.gov/environmental_services/Document_Library/Mid-Columbia_Coho_Restoration_Project/Mid-C%20Coho%20FEIS%20pkg%202-21-12.pdf
03/09/2012	Bureau of Reclamation	СО	Aspinall Unit Operations - Colorado River Storage Project, Modifying Water Flow Operations, Implementation, Gunnison River, Gunnison, Montrose, Delta, and Mesa Counties, CO http://www.usbr.gov/uc/envdocs/eis/AspinallEIS/index.html
02/10/2012	Federal Highways Admin.	NC	Mid-Currituck Bridge Study, Transportation Improvements in the Currituck Sound Area, US-158 and NC 12, USACE Section 404 Permit, Currituck and Dare Counties, NC http://www.ncdot.gov/projects/midcurrituckbridge/#inpagenav-4
07/15/2011	Federal Highways Admin.	WA	Alaskan Way Viaduct Replacement Project, Between S. Royal Brougham Way and Roy Street, To Protect Public Safety and Provide Essential Vehicle Capacity to and through downtown Seattle, Updated Information to 2004 DEIS and 2006 DSEIS, Seattle, WA http://www.wsdot.wa.gov/Projects/Viaduct/library-environmental.htm#2011feis
04/27/2012	Federal Transit Authority	CA	Hercules Intermodal Transit Center, Construction To Improve Access to Public Transit, Funding USACE Section 404 Permit, Contra Costa County, CA http://www.ci.hercules.ca.us/index.aspx?page=604

08/19/2011	National Capital Planning Commsn.	DC	Tier-2 FINAL - Smithsonian Institution National Museum of African American History and Culture (NMAAHC), Construction and Operation, Between 14th and 15th Streets NW and Constitution Avenue, NW and Madison Drive, NW, Washington, DC http://www.nmaahceis.com/documents/NMAAHC TierII Final EIS.pdf
10/07/2011	U.S. Army Corps of Engineers	Multi	Fargo-Moorhead Metropolitan Area Flood Risk Management, To Documents the Analysis of Alternatives Developed to Reduce Flood Risk, Red River of the North Basin, ND & MN ttp://ftp.usace.army.mil/pub/mvp/Fargo Moorhead Final Feas EIS/
02/24/2012	U.S. Forest Service	МО	Integrated Non-Native Plant Control Project, Proposes a Forest-Wide Integrated Management Strategy to Control the Spread of Non-Native Invasive Plant Species, MO http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/62962 FSPLT2 117261.pdf

4) Climate change discussion in EIS refers only to emissions, not to impacts. In one-quarter (38) of the Environmental Impact Statements we assessed, the discussion of climate change considered only the project's greenhouse gas emissions footprint, with no mention of potential impacts to either the project or affected resources, let alone any consideration of adaptation measures for these impacts.

Date	Lead Agency	State	Project Name and URL
10/07/2011	Bureau of Indian Affairs	CA	Manzanita Casino - Manzanita Band of Kumeyaay Indians Fee-To-Trust and Casino Facility/ Hotel Project, Construction and Operation, City of Calexico, Imperial County, CA http://www.calexico.ca.gov/index.php?option=com_content&task=view&id=513&Itemid=98
03/16/2012	Bureau of Indian Affairs	NV	K Road Moapa Solar Facility, Construction and Operation of a 350MW Solar Generation Facility, Approval of Right-of-Way Applications, Clark County, NV http://projects2.pirnie.com/MoapaSolar/index.cfm?fuseaction=FEIS
10/21/2011	Bureau of Land Mgmt.	AZ	Sonoran Solar Energy Project, Construction and Operation of a 3756-megawatt (MW) Concentrated Solar Thermal Power Plant and Ancillary Facilities on 3,702 Areas, Right-of-Way Granting, Maricopa County, AZ http://www.blm.gov/az/st/en/prog/energy/solar/sonoran_solar/maps/feis.html
10/28/2011	Bureau of Land Mgmt.	AZ	Northern Arizona Proposed Withdrawal Project, Proposed 20-Year Withdrawal of Approximately 1 Million Acres of Federal Mineral Estate, Coconino and Mohave Counties, AZ http://www.blm.gov/az/st/en/prog/mining/timeout/feis.html
10/14/2011	Bureau of Land Mgmt.	CA	East County Substation/Tule Wind/Energia Sierra Juarez Gen-Tie Projects, Construction and Operation, Right-of-Way Grants, San Diego County, CA http://www.cpuc.ca.gov/environment/info/dudek/ECOSUB/ECO_Final_EIR-EIS.htm
03/09/2012	Bureau of Land Mgmt.	CA	Ocotillo Express Wind Energy Project, Proposing to Develop a 465-Megawatt Wind Energy Facility, Implementation, Imperial County, CA http://www.icpds.com/?pid=2843
02/03/2012	Bureau of Land Mgmt.	NM	HB In-Situ Solution Mining Project, Proposal to Extract the Potash Remaining in Inactive Underground Mine, NPDES Permit, Eddy County, NM http://www.nm.blm.gov/cfo/HBIS/finalEIS.html
10/21/2011	Bureau of Land Mgmt.	OR	North Steens 230-kV Transmission Line Project, Construction and Operation of a Transmission Line and Access Roads Associated with the Echanis Wind Energy Project, Authorizing Right-of-Way Grant, Harney County, OR http://www.blm.gov/or/districts/burns/plans/steen_trans/feis.php
04/2012	Bureau of Land Mgmt.	OR	Celatom Mine http://www.blm.gov/or/districts/burns/plans/files/celatom-feis.pdf

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03/16/2012	Bureau of Land Mgmt.	UT	Uinta Basin Natural Gas Development Project, To Develop Oil and Natural Gas Resources within the Monument Butte-Red Wash and West Tavaputs Exploration and Developments Area, Applications for Permit of Drill and Right-of-Way Grants, Uintah and Duchesne Counties, UT http://www.blm.gov/pgdata/etc/medialib/blm/ut/vernal-fo/planning/gasco-eis/gasco-folder-7.Pars.81638.File.dat/GASCO%20EIS%20Entire%20Document.pdf
04/06/2012	Bureau of Land Mgmt.	UT	Greater Natural Buttes Area Gas Development Project, Development of Additional Well Pads and Associated Infrastructure, Application Approvals, Uintah County, UT http://www.blm.gov/ut/st/en/fo/vernal/planning/nepa .html
07/29/2011	Bureau of Land Mgmt.	WY	Buckskin Mine Hay Creek II Project, Coal Lease Application WYW-172684, Wyoming Powder River Basin, Campbell County, WY http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/cfodocs/haycreekii/feis.Par.88691.File.dat/00FEIS.pdf
07/15/2011	Bonneville Power Admin.	Multi	Big Eddy-Knight Transmission Project, Proposal to Construct, Operate, and Maintain a 27-28 mile long 500-Kilovolt Transmission Line using a Combination of Existing BPA and New 150-Foot wide Right -of-Way, Wasco County, OR and Klickitat County, WA http://efw.bpa.gov/environmental-services/Document_Library/Big_Eddy-Knight/
04/27/2012	Bonneville Power Admin.	OR	Albany-Eugene 115 kilovolt No. 1 Transmission Line Rebuild Project, Extending from Albany Substation to the Alderwood Tap, Linn and Lane Counties, OR http://efw.bpa.gov/environmental-services/Document Library/Albany-Eugene Rebuild/AlbanyEugene FinalFEIS 2013-03-26.pdf
09/02/2011	Bonneville Power Admin.	WA	Whistling Ridge Energy Project, Construction and Operation of a 75-megawatt (MW) Wind Turbine Facility, City of White Salmon, Skamania County, WA http://www.efsec.wa.gov/Whistling%20Ridge/SEPA/FEIS/FEIS.shtml
08/05/2011	Department of Energy	TX	Texas Clean Energy Project, Construction and Operation of a Coal-Based Electric Power Generation and Chemicals Production Plant, Odessa, Ector County, TX http://www.netl.doe.gov/technologies/coalpower/cctc/EIS/final_eis_texas_clean_energy.html
03/23/2012	Federal Energy Reg. Commsn.	Multi	New Jersey-New York Expansion Project, Propose to Modify and Expand their Existing Natural Gas Transmission Pipeline Systems in New Jersey, New York, and Connecticut http://www.ferc.gov/industries/gas/enviro/eis/2012/03-16-12-eis.asp
11/04/2011	Federal Highways Admin.	CA	6th Street Viaduct Seismic Improvement Project, Retrofitting or Demolition and Replacement of the Existing Viaduct over the Los Angeles river between Mateo and Mill Streets, Los Angeles County, CA http://www.la6thstreetviaduct.org/index.asp
08/19/2011	Federal Highways Admin.	СО	North 1-25 Corridor, To Identify and Evaluate Multi-Modal Transportation Improvement along 61 miles from the Fort Collins - Wellington Area, Funding and US Army COE Section 404 Permit, Denver, CO http://www.coloradodot.info/projects/north-i-25-eis/Final-EIS
12/23/2011	Federal Highways Admin.	СТ	North Hillside Road Extension on the University of Connecticut Storrs Campus, Hunting Lodge Road, US Army COE Section 404 Permit, in the town Mansfield, CT http://www.ct.gov/dot/lib/dot/documents/denviro/UConn FEIS 120911.pdf
11/25/2011	Federal Reserve Bank of SF	WA	1015 Second Avenue Property, Involving Disposition of the Property Either Through Transfer, Donations, or Sale, Downtown Seattle, WA http://www.frbsf.org/news/
09/09/2011	Federal Transit Authority	CA	Crenshaw Transit Corridor Project, Proposes to Improve Transit Services, Funding, Los Angeles County Metropolitan Transportation Authority (LACMTA), Los Angeles County, CA http://www.metro.net/projects/crenshaw_corridor/crenshaw-feis-feir/
01/20/2012	Federal Transit Authority	CA	Regional Connector Transit Corridor Project, Proposes a Light Rail Extension Connecting Metro Gold Line to the Metro Blue Line and the Metro Expo Line, Los Angeles County, CA http://www.metro.net/projects/connector/connector-final-eiseir/
02/03/2012	Federal Transit Authority	CA	Alameda-Contra Transit (AC Transit) East Bay Bus Rapid Transit Project, Implement High Level Bus Rapid Transit Improvements Connecting Berkeley, Oakland and San Leandro, San Francisco Bay Area, Funding, Alameda County, CA http://www.actransit.org/final-environmental-impact-statementfinal-environmental-impact-report-feisfeir/

03/23/2012	Federal Transit Authority	CA	Westside Subway Extension Transit Corridor Project, Extension of the Existing Metro Purple Line and Metro Red Line Heavy Rail Subway, Los Angeles County Metropolitan Transportation Authority, Los Angeles County, CA http://www.metro.net/projects/westside/final-eis-eir/
04/27/2012	Federal Transit Authority	CA	California High-Speed Train (HST): Merced to Fresno Section High-Speed Train, Propose to Construct, Operate, and Maintain an Electric-Powered High-Speed Train (HST), Merced, Madera and Fresno Counties, CA http://www.cahighspeedrail.ca.gov/final-eir-m-f.aspx
03/02/2012	General Services Admin.	DC	Department of Homeland Security Headquarters Consolidation at St. Elizabeth's Master Plan Amendment - East Campus North Parcel, St. Elizabeth's Campus in Southeast Washington, DC http://www.stelizabethsdevelopment.com/document_center.cfm
10/07/2011	General Services Admin.	Multi	International Falls Land Port of Entry Improvements Study, Proposes to Replace the Existing Land Port of Entry, Minnesota along the US and Canada Border http://www.gsa.gov/graphics/pbs/InternationalFallsLPOEImprovementsStudyFEIS.pdf
07/15/2011	Housing & Urban Dvlpmnt.	CA	West Coast Recycling Group Metal Recycling Facility Project, Proposal to Develop and Operate a Scrap Metal Shredding and Recycling Facility at the Port of West Sacramento, Yolo County, CA http://www.cityofwestsacramento.org/civica/filebank/blobdload.asp?BlobID=6651
07/15/2011	NOAA/ FWS	WA	Clark Springs Water Supply Habitat Conservation Plan, Application for Incidental Take Permits, City of Kent, Maple Valley, King County, WA http://ecos.fws.gov/docs/plan_documents/neis/neis/887.pdf
02/24/2012	National Park Service	CA	Extension of F-Line Streetcar Service to Fort Mason Center Project, To Provide High-Quality Rail Transit that Improves Transportation Access and Mobility, Golden Gate National Recreation Area, San Francisco Maritime National Historical Park, CA http://parkplanning.nps.gov/document.cfm?parkID=303&projectID=15547&documentID=45807
03/09/2012	Nuclear Regulatory Commsn.	NC	GE-Hitachi Global Laser Enrichment Facility, Issuance of License to Construct, Operate, and Decommission a Laser-Based Uranium Enrichment Facility, Wilmington, NC http://www.nrc.gov/materials/fuel-cycle-fac/laser.html#enviroimp
12/09/2011	Rural Utilities Service	GA	Biomass Power Plant Project, Application for Financial Assistance To Construction 100 Megawatt (MW) Biomass Plant and Related Facilities, Warren County, GA http://www.rurdev.usda.gov/UWP-OglethorpePower.html
11/18/2011	Tennessee Valley Authority	AL	Muscle Shoals Reservation Redevelopment, Disposal and Potential Redevelopment Approximately 1,400 Acres of its Muscle Shoals Reservation, Muscle Shoals, Colbert County, AL http://www.tva.gov/environment/reports/muscle-shoals/index.htm
03/30/2012	U.S. Army Corps of Engineers	FL	Central and Southern Florida Project, Broward County Water Preserve Areas, Updates Resulting from Policy changes that Occurred since 2007 Civil Works Board Approval, South Florida Water Management District (SFWMD), Comprehensive Everglades Restoration Plan, (CERP), Broward County, FL http://www.evergladesplan.org/pm/projects/docs-45-broward-wpa-final-pir.aspx
04/20/2012	U.S. Forest Service	CA	Kirkwood Meadows Power Line Reliability Project, Proposal to Construct and Operate 34.5 kilovolt (kV) Power Line, Eldorado National Forest, Amador, Eldorado, and Alpine Counties, CA http://www.rci-nv.com/reports/kirkwood-eis/pdfs/kirkwood-eis.zip
09/09/2011	U.S. Forest Service	OR	North End Sheep Allotment Project, Proposes to Authorize Grazing Domestic Sheep, Walla Walla Range District of the Umatilla National Forest, Wallowa, Union, and Umaitlla Counties, OR http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=28354
01/06/2012	U.S. Forest Service	VΤ	Deerfield Wind Project, Updated Information, Application for a Land Use Authorization to Construct and Operate a Wind Energy Facility, Special Use Authorization Permit, Green Mountain National Forest, Bennington County, VT http://data.ecosystem-management.org/nepaweb/fs-usda-pop.php?project=7838

5) Mention climate change briefly but no emissions or impacts analysis. Forty-eight EISs gave a brief mention of climate change somewhere in the EIS, but made no effort to incorporate analysis of either the causes or the effects.

Date	Lead Agency	State	Project Name and URL
09/23/2011	Bureau of Land Mgmt.	AZ	Ironwood Forest National Monument, Resource Management Plan, Implementation http://www.blm.gov/az/st/en/prog/planning/ironwood/reports.html
12/09/2011	Bureau of Land Mgmt.	NM	Taos Resource Management Plan http://www.blm.gov/pgdata/etc/medialib/blm/nm/field_offices/taos/taos_planning/taos_propose d_rmp.Par.3539.File.dat/Volume%20I%20Final.pdf http://www.blm.gov/pgdata/etc/medialib/blm/nm/field_offices/taos/taos_planning/taos_propose d_rmp.Par.51617.File.dat/Volume%20II%20Final.pdf
07/22/2011	Bureau of Land Mgmt.	NV	Three Separate Geothermal Energy and Transmission Projects http://www.blm.gov/nv/st/en/fo/carson_city_field/blm_information/nepa/salt_wells_energy.html
04/20/2012	Bureau of Land Mgmt.	OR	John Day Basin Resource Management Plan http://www.blm.gov/or/districts/prineville/plans/johndayrmp/files/pdo_JDB_PRMP_FEIS_bund le.zip
12/23/2011	Bureau of Land Mgmt.	UT	Greens Hollow Coal Lease Tract Project,http://www.fs.fed.us/nepa/project_content.php?project=25561
01/2012	Bureau of Ocean Energy Mgmt.	Multi	EIS No. 20120004, Final Supplement (Vol. 1, Vol. 2), BOEM, 00, Gulf of Mexico Outer Continental Shelf Oil and Gas Lease Sales: 2012 Central Planning Area Lease Sales: 216 and 222, Potential Changes to the Baseline Conditions, Offshore Marine Environment and Coastal Counties/Parishes of MS, LA, AL, Review Period Ends: 02/21/2012, Contact: Gary Goeke (504) 736–3233. http://www.boem.gov/BOEM-Newsroom/Library/Publications/2012/2012-058 vol 2-pdf.aspx
08/12/2011	Department of Energy	CA	Topaz Solar Farm Project Loan Guarantee https://lpo.energy.gov/?page_id=1506#tsf
02/17/2012	Department of Energy	GA	ADOPTION - Vogtle Electric Generating Plant (Nuclear), Loan Guarantee http://energy.gov/nepa/downloads/eis-0476-final-environmental-impact-statement
02/10/2012	Federal Energy Reg. Commsn.	CA	Eagle Mountain Pumped Storage Hydroelectric Projecthttp://www.ferc.gov/industries/hydropower/enviro/eis/2012/01-30-12.asp
02/10/2012	Federal Highway Admin.	AL	Helena Bypass Construction, USACE Section 404 Permit, Shelby County, AL http://www.dot.state.al.us/dsweb/Environmental/Approved%20Environmental%20Docs.html
10/21/2011	Federal Highway Admin.	CA	Yerba Buena Island Ramps Improvement Project http://www.dot.ca.gov/dist4/envdocs.htm#sanfrancisco
10/21/2011	Federal Highway Admin.	GA	Northwest Corridor Improvements, I-75/I-575 Construction USACE Section 404 Permit, NPDES Permit http://www.nwcproject.com/pages/Docs.htm
07/22/2011	Federal Highway Admin.	IN	I-69 Evansville to Indianapolis Tier 2 Section 4 Project http://www.i69indyevn.org/section-4-feis/
03/09/2012	Federal Highway Admin.	NC	US-1 Transportation Improvements, Updated Information, from Sandhill Road (NC 1971) to just North of Fox Road (NC 1606) to Martson Road (NC 1001), Funding, and COE Section 404 Permit, City of Rockingham, Richmond County, NC www.knowledgemosaic.com/resourcecenter/R-2501%20Final%20Environmenta.zip

04/27/2012	Federal Highway Admin.	OR	Newberg Dundee Bypass Project Four Lane Expressway http://www.oregonjta.org/region2/?p=project-library#FEIS2
07/22/2011	Federal Highway Admin.	TN	Interstate 55 Interchange http://www.tdot.state.tn.us/i55/docs/Approved-I-55Interchange-FinalEIS 6-28-2011.pdf
10/28/2011	Federal Highway Admin.	UT	Provo Westside Connector Project, Improvements to Interstate 15 http://www.provowestsideconnector.com/eis-process/
11/18/2011	Federal Highway Admin.	UT	Bangerter 600 West Project, Proposed Improvements http://www.udot.utah.gov/bangerter600west/documents.html
10/14/2011	Federal Highway Admin.	WI	Zoo Interchange Corridor Study ftp://ftp.dot.wi.gov/dtsd/projects/sezooic/feis.zip
07/01/2011	Federal Tranit Authority	MI	Light Rail Transit Project http://www.woodwardlightrail.com/HomeNew.html
09/23/2011	National Oceanic & Atmosph. Admin.	CA	ADOPTION - Bair Island Restoration and Management Plan, Tidal Action Restoration, Don Edwards San Francisco Bay National Wildlife Refuge, Bair Island State Ecological Reserve, South San Francisco Bay, http://www.southbayrestoration.org/Bair-EIR-EIS-Final.html
07/01/2011	National Oceanic & Atmosph. Admin.	Multi	Atlantic Mackerel, Squid, and Butterfish (MSB), Management http://www.nero.noaa.gov/nero/regs/frdoc/11/11SMBAmend11FEIS.pdf
09/09/2011	National Oceanic & Atmosph. Admin.	Multi	Establish Annual Catch Limits and Accountability Measures for Caribbean Spiny Lobster http://www.gulfcouncil.org/docs/amendments/Final%20Final Spiny Lobster Amendment 10 August 11.pdf
10/28/2011	National Oceanic & Atmosph. Admin.	Multi	Implementation of Annual Catch Limits (ACLs) and Accountability Measures (AMs) for Reef Fish and Queen Conch in the U.S. Caribbean http://sero.nmfs.noaa.gov/sf/pdfs/2010 Caribbean ACL Amendment FEIS 092011.pdf
11/04/2011	National Oceanic & Atmosph. Admin.	Multi	2011 Caribbean Comprehensive Annual Catch Limit (ACL) Amendment for the US Caribbean: Reef Fish, Spiny Lobster, Queen Conch Corals and Reef Associated Plants and Invertebrates http://sero.nmfs.noaa.gov/sf/pdfs/2011 ACL Amendment FEIS 102511.pdf
11/10/2011	National Oceanic & Atmosph. Admin.	Multi	Catch Limits, Management Measures, Red Grouper, Gulf of Mexico http://sero.nmfs.noaa.gov/sf/pdfs/FinalRF32 EIS October 21 2011NoAppendices 20111102091 812.pdf
11/25/2011	National Oceanic & Atmosph. Admin.	Multi	Comprehensive Annual Catch Limit (ACL) Amendment for the South Atlantic Regions: Dolphin Wahoo Fishery; Pelagic Sargassum Habitat; Golden Crab Fishery, and Snapper Grouper Fishery, South Atlantic Region http://sero.nmfs.noaa.gov/sf/pdfs/Comp%20ACL%20Am%20101411%20FINAL.pdf
12/30/2011	National Park Service	IL	Lincoln Home National Historic Site, General Management Plan http://parkplanning.nps.gov/showFile.cfm?projectID=13436&docType=public&MIMEType=application% 252Fpdf&filename=Scan%20of%20Abb%20Final%20GMP%201%2D6%2D12%2Epdf&clientFilename=Scan%20of%20Abb%20Final%20GMP%201%2D6%2D12%2Epdf
11/04/2011	National Park Service	Multi	Yellowstone National Park Draft Winter Use Plan http://parkplanning.nps.gov/document.cfm?parkID=111&projectID=29281&documentID=44049

04/27/2012	National Park Service	SD	South Unit - Badlands National Park, General Management Plan, Implementation, SD http://parkplanning.nps.gov/document.cfm?parkID=117&projectID=17543&documentID=47117
04/2012	Nuclear Regulatory Commission.	FL	Levy Nuclear Plant http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1941/v1/index.html
07/01/2011	National Science Foundation	Multi	PROGRAMMATIC - Marine Seismic Research on Geology and Geophysics of the Seafloor http://www.nsf.gov/geo/oce/envcomp/usgs-nsf-marine-seismic-research/nsf-usgs-final-eis-oeis-with-appendices.pdf
09/01/2011	U.S. Army Corps of Engineers	FL	Martin County Hurricane and Storm Damage Reduction Project http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/DocsNotices_OnLingMartinCo.htm
03/02/2012	U.S. Army Corps of Engineers	FL	St. Lucie County South Beach and Dune Restoration Project http://www.saj.usace.army.mil/Divisions/Regulatory/DOCS/interest/StLucieCo/Draft-EIS/St. Lucie County Final Environmental Impact Statement Feb 2012.pdf
03/30/2012	U.S. Army Corps of Engineers	LA	Louisiana Coastal Area Barataria Basin Barrier Shoreline Restoration http://www.lca.gov/Library/ProductList.aspx?Prodtype=4&folder=3137
04/20/2012	U.S. Army Corps of Engineers	Multi	Savannah Harbor Expansion Project, Navigation Improvements to the Federal Navigation Channel, Chatham County, GA and Jasper County, SC http://www.sas.usace.army.mil/shexpan/EIS.html
04/27/2012	U.S. Forest Service	AK	Tonka Timber Sale Project, Proposed Timber Harvesting, Tongass National Forest http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/39016 FSPLT2 122160.pdf
12/09/2011	U.S. Forest Service	CA	Lake Tahoe Basin Management Unit South Shore Fuel Reduction and Healthy Forest Restoration http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5332487.pdf
04/27/2012	U.S. Forest Service	CA	Rubicon Trail Easement and Resource Improvement Project, Eldorado National Forest http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5364243.pdf
03/30/2012	U.S. Forest Service	FL	City of Tallahassee Southwestern Transmission Line Project, Proposes to Construct, Operate and Maintain a New Overhead 230 - kilovolt (kV), Electric Transmission Line, Special-Use-Permit (SUP), Apalachicola National Forest (ANF), Leon County, FL http://www.talgov.com/you/learn/library/documents/swtl environmental impact statement final. pdf
01/27/2012	U.S. Forest Service	ID	Proposes to Manage Motorized and Mechanized Travel, Clearwater National Forest http://www.fs.fed.us/nepa/nepa_project_exp.php?project=17992
10/28/2011	U.S. Forest Service	Multi	Nationwide Aerial Application of Fire Retardant Project, National Forest System Lands http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/71615_FSPLT2_060686.pdf
07/08/2011	U.S. Forest Service	NM	McKinley County Easement - Forest Roads 191 and 191D http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/50531 FSPLT2 052741.pdf
10/21/2011	U.S. Forest Service	NV	Ely Westside Rangeland Project, Authorization of Livestock Grazing, To Improve the Health of the Land and To Protect Essential Ecosystem Functions and Values, Implementation, Humboldt-Toiyabe National Forest, Lincoln, Nye, and Pine Counties, NV http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=17967
08/05/2011	U.S. Forest Service	SD	Black Hills NF, Proposes to Implement Multiple Resource Management Actions http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/69526_FSPLT2_054888.pdf
03/09/2012	U.S. Forest Service	SD	Section 30 Limestone Mining Project, Black Hills National Forest http://www.fs.fed.us/nepa/project_content.php?project=17657

02/24/2012	U.S. Forest Service	UΤ	South Unit Oil and Gas Development Project, Master Development Plan, Ashley National Forest http://www.fs.fed.us/nepa/nepa project exp.php?project=21014
09/16/2011	U.S. Forest Service	WY	Livestock Grazing and Vegetation Management on Bighorn National Forest http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=28328

6) No mention of climate change in the EIS. Nineteen of the EISs that we assessed did not contain any mention of climate change at all.

Date	Lead Agency	State	Project Name and URL
04/27/2012	Bureau of Land Mgmt.	NV	Phoenix Copper Leach Project, Construction and Operation of a New Copper Benfication Facility http://www.blm.gov/pgdata/etc/medialib/blm/nv/field offices/battle mountain field/blm infor mation/nepa/final environmental.Par.28322.File.dat/Final EIS April 2012.pdf
07/08/2011	Federal Aviation Authority	RI	Airport Improvement Program http://www.vhb.com/pvd/eis/documents.asp
08/26/2011	Federal Energy Reg. Commission.	CA	Kilarc-Cow Creek Hydroeletric Project, Surrender of License http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12734329
09/16/2011	Federal Energy Reg. Commission.	WA	Boundary Hydroelectric Project, Application for Hydroelectric License, http://www.ferc.gov/industries/hydropower/enviro/eis/2011/09-09-11.asp
01/27/2012	Federal Highway Admin.	CA	State Route 76 Highway Improvement Project, Widening and Realignment Including Interchange Improvements, USACE Section 404 Permit, San Diego County, CA http://www.keepsandiegomoving.com/SR-76-Corridor/SR76-intro.aspx
02/03/2012	Federal Highway Admin.	MN	US-14 Reconstruction Project http://www.dot.state.mn.us/d7/projects/14newulmtonmankato/pdfs/hwy14feis2011-12.pdf
07/08/2011	Federal Highway Admin.	UT	Transportation Corridor between North Logan City and Hyde Park http://www.cachempo.org/Projects/200east_north.html
07/22/2011	Federal Highway Admin.	WI	US 41 Improvement Project, road extension http://www.us41wisconsin.gov/overview/special-project-features/envdocsmemorialdrtocountym
08/19/2011	Federal Highway Admin.	MΤ	Russell Street/South 3rd Street Reconstruction Project, To Address Current and Projected Safety and Operational needs, Funding and US Army COE Section 404 Permit, City of Missoula, Missoula County, MT http://www.mdt.mt.gov/pubinvolve/docs/eis-ea/eis-russell.pdf
07/15/2011	Federal Transit Authority	WA	East Link Light Rail Transit Project http://projects.soundtransit.org/Projects-Home/East-Link-Project/East-Link-EIS.xml
02/24/2012	National Institutes of Health	MA	National Emerging Infectious Diseases Laboratories, Construction of National Biocontainment Laboratory http://nihblueribbonpanelbumc-neidl.od.nih.gov/default.asp
04/27/2012	National Park Service	IN	Indiana Dunes National Lakeshore, White-Tailed Deer Mgmt Plan Implementation http://parkplanning.nps.gov/document.cfm?parkID=139&projectID=10814&documentID=47075

03/23/2012	National Park Service	MD	Hampton National Historic Site, General Management Plan, Baltimore http://parkplanning.nps.gov/document.cfm?parkID=243&projectID=11194&documentID=46039
09/02/2011	Natural Resources Cons. Service	UT	Logan Northern Canal Reconstruction Project, rebuilding an irrigation canal http://www.ut.nrcs.usda.gov/programs/EWP/LNCRP/final.html
12/09/2011	U.S. Army Corps of Engineers	FL	Everglades Restoration Transition Plan (ERTP), interim Water Management Operating Criteria http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/Projects ERTP.htm
12/30/2011	U.S. Army Corps of Engineers	FL	Brevard County, Hurricane and Storm Damage Reduction Project, To Reduce the Damages Caused by Erosion and Coastal Storms to Shorefront Structures http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/DOCS/OnLine/Brevard/ShoreProtectionProject/Appendices Final April 2011v2.pdf
03/09/2012	U.S. Forest Service	AK	Tongass NF, Special Use Permit, Authorize Outfitter / Guide Operations http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/69657_FSPLT2_104065.pdf
03/02/2012	U.S. Forest Service	ID	Little Slate Project, Proposes Watershed Improvement, Timber Harvest, Fuel Treatments http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/27900FSPLT2_117692.pdf
02/24/2012	U.S. Forest Service	SD	Steamboat Project, Proposes to Implement Multiple Resource Management Actions, Black Hills National Forest http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=34305