

ADAPTIVE MANAGEMENT AND NEPA IN THE COURTS

Suzanne Hart¹, Robert Glicksman¹ and Natalie Snider Peyronnin²

¹George Washington University Law School

²Environmental Defense Fund

Introduction

Adaptive management is an iterative decisionmaking process wherein agencies monitor a management plan's implementation and adjust it based on feedback.¹ From an ecological perspective, adaptive management seems like an appropriate natural resource management strategy, since it involves iterative evidence-based decisionmaking that is driven by how the ecosystem is responding to present management techniques. Adaptive management has its skeptics, however, which include those who are suspicious that agencies are using this decisionmaking technique to defer decisionmaking and avoid the analysis required under the National Environmental Policy Act ("NEPA").

Federal resource management agencies have been sued under NEPA for their use of adaptive management plans, which has given courts the opportunity to analyze the compatibility of adaptive management plans with the requirements of NEPA. This Memorandum briefly discusses how courts have ruled on agencies' adaptive management plans, and discusses how courts might rule on the use of adaptive management in the climate change context.

Adaptive Management in the Courts

Courts have generally been open to agencies utilizing adaptive management strategies. Courts have tended to uphold adaptive management plans that describe with sufficient specificity

¹ J.B. Ruhl & Robert L. Fischman, *Adaptive Management in the Courts*, 95 MINN. L. REV. 424, 424 (2010).

(1) monitoring protocols, (2) thresholds at which particular actions must be considered, and (3) the mitigation measures that will be utilized when the thresholds are met.² In other words, a court will be more likely to uphold an adaptive management plan that is reasonably fleshed out and supported, and is less likely to uphold one that is not.³ When monitoring, triggers, and appropriate mitigation measures are described in sufficient detail and justified, a court will most likely consider the agency's NEPA obligations satisfied.

Courts have ruled in favor of the agencies on the basis of adaptive management more often than against them, but where courts have ruled against the agencies it has primarily been because an element of the adaptive management plan was missing, or because an element of the plan was not sufficiently described or supported.⁴ In rarer instances, agencies have lost because

² See, e.g. *Theodore Roosevelt Conservation P' ship v. Salazar*, 616 F.3d 497 (D.C. Cir. 2010) (upholding adaptive management plan that outlined measurable goals and identified detailed, site-specific mitigation measures); *Powder River Basin Res. Council v. U.S. Bureau of Land Mgmt.*, 37 F. Supp. 3d 59 (D.D.C. 2014) (upholding adaptive management plan that included measurable performance standards, a monitoring program, and detailed mitigation measures). *But cf.* *Western Watersheds Project v. U.S. Forest Serv.*, 2006 WL 292010 (D. Idaho 2006) (striking down adaptive management plan that did not describe the monitoring techniques or protocols that would be used); *Natural Res. Def. Council, Inc. v. U.S. Army Corps of Eng'rs*, 457 F. Supp. 2d 198 (S.D.N.Y. 2006) (striking down adaptive management plan that did not provide for monitoring or give sufficient assurance that the mitigation measures would be effective).

³ See *Mayo v. Jarvis*, 117 F. Supp. 3d 91 (D.D.C. 2016), *aff'd*, 875 F. 3d 11 (D.C. Cir. 2017) (concluding that gaps in the agency's EIS due to the use of an adaptive management plan were permissible, and that an EIS need only be "reasonably complete," containing "sufficient detail" to evaluate environmental impacts).

⁴ See *Western Watersheds Project v. U.S. Forest Serv.*, 2006 WL 292010 (D. Idaho 2006) (striking down agency's adaptive management plan for failing to describe with sufficient specificity the monitoring techniques or protocols that would be used). Courts have also evaluated adaptive management plans under the Endangered Species Act, and the reasoning courts have given for ruling against the agencies in those cases is instructive in the NEPA context as well. See *Greater Yellowstone Coalition v. Servheen*, 665 F. 3d 1015 (9th Cir. 2011) (striking down adaptive management plan that did not include sufficiently specific triggering mechanisms or response actions, and noting that "just as it is not enough simply to invoke 'scientific uncertainty' to justify an agency action, it is not enough to invoke 'adaptive management' as an answer to scientific uncertainty"); *Natural Res. Def. Council v.*

the court found that the agency had used adaptive management to avoid undertaking proper NEPA analysis.⁵ The following four examples illustrate how courts have evaluated adaptive management plans, and what management measures courts see as sufficient or insufficient.

Upholding a Plan for Natural Gas Development: Theodore Roosevelt Conservation Partnership v. Salazar

The Court in *Theodore Roosevelt Conservation Partnership v. Salazar*⁶ upheld a Bureau of Land Management (“BLM”) plan utilizing adaptive management to mitigate adverse effects on species and the environment during natural gas development in Wyoming’s Great Divide Resource Area.⁷ In its decision, the court noted that the BLM had developed measurable performance goals for the project and listed numerous specific mitigation measures to be considered for each drill plan.⁸ The court did not discuss triggering mechanisms because the BLM applied an adaptive management approach to approving and managing drill plans, where the submission of a drill plan was essentially the trigger for considering mitigation measures.⁹

The BLM’s Record of Decision (“ROD”) for the project outlined performance goals, including maintaining functional migration routes for affected wildlife, providing an “adequate amount of suitable, undisturbed crucial winter range for big game animals,” and maintaining adequate water quality for sensitive fish populations.¹⁰ A review team made up of representatives

Kemphorne, 506 F. Supp. 2d 322 (E.D. Cal. 2007) (striking down adaptive management plan for failure to include mitigation measures that had “definite, certain, or enforceable criteria or standards”).

⁵ See *Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F. 3d 549 (9th Cir. 2006).

⁶ 616 F.3d 497 (D.C. Cir. 2010), *aff’g* 605 F. Supp. 2d 263 (D.D.C. 2009).

⁷ *Id.* at 504–05. For this project, the BLM prepared an EIS for its decision to approve new natural gas wells in the project area. *Id.* at 505. The adaptive management plan and conditions for approving drill plans were articulated in both the EIS and the accompanying ROD. *Id.* at 506.

⁸ *Id.* at 504–05.

⁹ *Id.* at 506.

¹⁰ *Id.* at 516.

from the BLM and other interested parties was tasked with developing quantifiable criteria to evaluate whether the project met these performance goals.¹¹

The project included fixed mitigation measures, applicable to all drill plans, as well as a thirteen-page list of specific adaptive management mitigation measures that would be determined on a case-by-case basis.¹² These mitigation measures included requiring operators to surround drill pads with hay or mulch to prevent erosion, and limiting disturbance around sage grouse habitats, and were each accompanied by justifications for including them.¹³ The court concluded that the BLM's adaptive management plan satisfied NEPA's "hard look" requirement, given the level of detail present in the BLM's discussion of goals and mitigation measures.¹⁴

Upholding an Oil and Gas Development Plan: Powder River Basin Resource Council v. United States Bureau of Land Management

*Powder River Basin Resource Council v. U.S. Bureau of Land Management*¹⁵ dealt with the BLM's Environmental Assessment ("EA") on its decision to allow oil and gas development activities, and subsequent finding of no significant impact, in the Powder River Basin in Wyoming.¹⁶ The EA set performance standards for oil and gas development that operators' plans were required to comply with, and provided for monitoring by the BLM to ensure the operators met performance standards.¹⁷ The primary contention in the case was that the BLM's adaptive management plan failed to adequately protect an elk herd found within the plan area, but the

¹¹ *Id.* The ROD also discussed adapting the monitoring efforts themselves in response to observation, and how funding would be obtained for monitoring. *Id.*

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.* at 517.

¹⁵ 37 F. Supp. 3d 59 (D.D.C. 2014).

¹⁶ *Id.* at 67–70.

¹⁷ *Id.* at 70–71.

court found that the goals, monitoring plan, and mitigation measures articulated in the EA were sufficiently detailed and justified to satisfy its obligations under NEPA.¹⁸

The BLM's adaptive management plan included seven measurable performance standards, including standards related to "the elk herd population size, the number of calves born, calf survival rates, the amount of security habitat, and the level of habitat effectiveness."¹⁹ A monitoring team made up of BLM and State of Wyoming officials were to use the performance standards to assess the welfare of the herd and determine whether management changes were needed.²⁰

If the monitoring team concluded that management changes were needed, the team would choose from six recommended mitigation measures.²¹ The measures primarily addressed activities of oil and gas operators, and included requiring lease operators to "locate ancillary facilities . . . outside of crucial ranges, reduce metering and other production related visitation, close and reclaim redundant and otherwise unnecessary roads, limit operations within crucial seasonal ranges . . . and work with BLM and [state officials] to incorporate forage and habitat enhancements into plans of development."²² The measures were supported by studies indicating that elk avoid infrastructure such as roads and discussing the importance of certain habitat attributes for elk.²³

The court noted that, in creating the plan, the BLM took the advice of state officials to establish a monitoring team to review the data and incorporate measurable trigger points into the

¹⁸ *Id.* at 82–83.

¹⁹ *Id.* at 81.

²⁰ *Id.*

²¹ *Id.*

²² *Id.*

²³ *Id.*

plan.²⁴ The court also found that the very use of an adaptive management plan incorporating measurable standards and defined mitigation measures weighed in favor of finding that the BLM had satisfied NEPA.²⁵

Striking Down a Dredging Plan: Natural Resources Defense Council v. United States Army Corps of Engineers

In a relatively early case, the court in *Natural Resources Defense Council v. U.S. Army Corps of Engineers*²⁶ struck down the Corps' use of an adaptive management approach in a project to deepen channels in the New York-New Jersey Harbor.²⁷ The Court found that, in preparing an EA and reaching a finding of no significant impact on the channel-deepening proposal, the Corps' failure to develop any standards that monitoring data could be assessed against and lack of assurance about the efficacy of the mitigation measures represented violations of NEPA.²⁸

The Corps developed monitoring protocols, but did not create any performance standards with which to evaluate the project.²⁹ The Corps promised to evaluate the need to alter its dredging practices, but did not propose any alternative practices that could be used if the current practices needed to be changed.³⁰ At the same time the Corps was undertaking dredging, the U.S. Environmental Protection Agency ("EPA") was remediating contaminated sediment in the Harbor.³¹ The Corps asserted that it would mitigate the effect of dredging on EPA's remediation

²⁴ *Id.* at 81–82.

²⁵ *Id.* at 82–83 (“BLM’s handling of the mitigation measures satisfies the hard look requirement, particularly in light of the fact that BLM is using an adaptive management approach . . .”).

²⁶ 457 F. Supp. 2d 198 (S.D.N.Y. 2006).

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.* at 215, 233.

³⁰ *Id.* at 233–34.

³¹ *Id.*

activities, but the EPA Project Manager informed the Corps that the dredging activities would likely delay EPA's remediation—casting serious doubt on whether the Corps' plans would actually mitigate the impacts of dredging.³²

The court expressed concern about the Corps' failure to sufficiently develop monitoring and mitigation plans, which were essentially only "plans" in name.³³ The plans were not detailed and did not provide for evaluation or steps to take to adapt the project in response to monitoring data. Aside from the structure of the plans themselves, the court admonished the agency for relying on "incomplete data, faulty, assumptions, and unreliable averages."³⁴ The court's focus on monitoring and mitigation in this case highlights the importance of the inclusion in an agency's adaptive management plans of (1) a detailed monitoring program that provides information on how well the plan is working and whether it needs to be changed, and (2) a selection of feasible and justified mitigation measures developed prior to commencing the project that the agency commits to implementing if the monitoring data warrants it.

Enjoining a Timber Sale for a Failure to Properly Amend: Klamath Siskiyou Wildlands Center v. Boody

In *Klamath Siskiyou Wildlands Center v. Boody*,³⁵ the BLM downgraded species protection standards for the red tree vole in a land use plan prepared by the BLM and the Forest Service to govern management of forests in the northwest without formally amending the plan. The BLM then initiated NEPA analysis for a timber sale in the plan area, and due to the lower management requirements, did not conduct the red tree vole surveys that it would have been

³² *Id.* at 234.

³³ *Id.*

³⁴ *Id.*

³⁵ 468 F. 3d 549 (9th Cir. 2006)

required to conduct had it not downgraded the protections.³⁶ The Ninth Circuit rejected the BLM’s argument that the adaptive management features built into the plan and contemplated by a supplemental EIS the agency had prepared on the plan revisions allowed the agency to avoid formal amendment procedures under the Federal Land Policy and Management Act.³⁷ It did not help the BLM’s argument that, in downgrading the vole’s protection standards, the agency had effectively adopted an alternative that it had rejected at an earlier stage of the planning process because a substantial amount of the relevant data was not yet available.³⁸ The court concluded that the BLM’s change in position could not be justified by the use of adaptive management, and enjoined the timber sale because it relied on the unlawful decision to change species protection standards.³⁹

Required Documentation under NEPA

Agencies are not required to complete any particular type of NEPA analysis to have an adaptive management plan upheld. Courts have approved adaptive management plans contained in EAs⁴⁰ and EISs alike.

The very nature of an adaptive management plan requires that management strategies change over time. NEPA, however, requires supplemental analysis in the face of major changes.

³⁶ *Id.* at 553.

³⁷ *Id.* at 558.

³⁸ *Id.* at 559.

³⁹ *Id.* at 563.

⁴⁰ *See, e.g.* Natural Res. Def. Council v. National Park Serv., 250 F. Supp. 3d 1260, 1292 (M.D. Fla. 2017) (“a finding of no significant impact based on mitigation measures is permissible.”); Powder River Basin Res. Council v. U.S. Bureau of Land Mgmt., 37 F. Supp. 3d 59 (D.D.C. 2014) (upholding adaptive management plan described in a resource management plan and accompanying EA); *see also* Izaak Walton League of America, Inc. v. Tidwell, 2015 WL 632140 (D. Minn. 2015) (ruling the Forest Service’s failure to describe its adaptive management plan in the EIS was harmless error because the agency had outlined the plan in the EA and later record of decision)

A Supplemental Environmental Impact Statement (“SEIS”) is required if “the agency makes substantial changes in the proposed action that are relevant to environmental concerns,” or “there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”⁴¹ Courts have not required supplemental analysis in every instance,⁴² but agencies cannot use adaptive management as a tool to avoid properly amending existing plans.⁴³

Deference to Agency Decisionmaking

NEPA itself does not provide for citizen suits, and NEPA challenges are instead brought under the Administrative Procedure Act (“APA”). NEPA requires agencies to follow a particular process, not choose a specific outcome, and under the APA, a court cannot substitute its own judgment for that of the agency.⁴⁴ Courts also do not make determinations about which scientific

⁴¹ 40 C.F.R. § 1502.9(c).

⁴² *See, e.g.* Theodore Roosevelt Conservation P’ship v. Salazar, 616 F. 3d 497, 517 (D.C. Cir. 2010) (“The procedural requirements of NEPA do not force agencies to make detailed, unchangeable, mitigation plans for long-term development projects. . . . Allowing adaptable mitigation measures is a responsible decision in light of the inherent uncertainty of environmental impacts, not a violation of NEPA.”), *Western Watersheds Project v. Salazar*, 766 F. Supp. 2d 1095 (D. Mont. 2011) (determining that SEIS was not required because initial adaptive management plan anticipated the management changes at issue); *National Parks Conservation Ass’n v. Jewell*, 965 F. Supp. 2d 67, 78 (D.D.C. 2013) (“new information that provides significant beneficial environmental effects triggers the supplemental EIS requirement, but new information which results in [effects] within the scope of the EIS’ analysis do not require supplementation.”); *Oregon Natural Res. Council v. U.S. Forest Serv.*, 59 F. Supp. 2d 1085 (W.D. Wash. 1999) (deferring to agency’s decision not to prepare an SEIS because adaptive management plan was sufficient to adapt to the relevant change in information). In at least one case, the court determined that the inclusion of an adaptive management strategy in an EIS prevented the EIS from becoming outdated. *High Sierra Hikers Ass’n v. U.S. Dep’t of Interior*, 848 F. Supp. 2d 1036 (N.D. Cal. 2012).

⁴³ *See Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F. 3d 549 (9th Cir. 2006) (concluding that the BLM could not use adaptive management as an excuse for not properly amending a resource management plan or conducting supplemental NEPA analysis). This case specifically discussed forest plans, but the court did not confine its analysis of when supplemental NEPA analysis is required in connection with implementation of forest plans. *Id.*

⁴⁴ *Protect Our Communities Found. v. Jewell*, 825 F. 3d 571 (9th Cir. 2016).

methods agencies should use, and generally leave that choice to the agency's discretion.⁴⁵ Courts have viewed adaptive management as a kind of scientific method, and thus will defer to a reasonable agency decision on whether to use adaptive management or not.⁴⁶

Adaptive Management and Climate Change

Few existing cases discuss the use of adaptive management to handle the future effects of climate change.⁴⁷ Adaptive management is well-suited to climate change issues because of the amount of uncertainty agencies face in this area, which the court in *Oregon Wild v. Cummins* noted.⁴⁸ Given what courts have already decided about adaptive management, utilizing adaptive management to deal with climate change issues is likely to be upheld so long as the monitoring, triggers, and mitigation measures are sufficiently specific. Interestingly, the District Court of the District of Oregon noted that in one particular instance, adaptive management might have been the only way to carry out a project,⁴⁹ and it is possible that other courts may see the use of adaptive management in the climate change context this way in future cases. Adaptive

⁴⁵ *Lands Council v. McNair*, 537 F. 3d 981, 988 (9th Cir. 2008), *overruled on other grounds by* *Winter v. Natural Res. Def. Council, Inc.*, 555 U.S. 7 (2008).

⁴⁶ *People of California ex rel. Lockyear v. U.S. Dep't of Agric.*, 2008 WL 3863479 (E.D. Cal. 2008).

⁴⁷ *But see Oregon Wild v. Cummins*, 239 F. Supp. 3d 1247 (D. Or. 2017) (upholding the Forest Service's use of adaptive management to flexibly respond to effects of climate change); *Friends of the Wild Swan v. Jewell*, 2014 WL 418 2702 (D. Mont. 2014) (concluding that EIS, which included adaptive management measures, sufficiently discussed how the agency would deal with effects of climate change).

⁴⁸ 239 F. Supp. 3d at 1276.

⁴⁹ *Oregon Natural Desert Ass'n v. Bureau of Land Mgmt.*, 2011 WL 5830435 (D. Or. 2011) (“with a project this size, adaptive management is the only logical way the BLM can proceed to undertake habitat restoration, providing the agency with the flexibility to respond to on-the-ground circumstances when they arise.”).

management is an appropriate tool for agencies to use when dealing with uncertainty,⁵⁰ and attempting to plan for the effects of climate change involves quite a bit of uncertainty.

In the *Cummins* case, the plaintiffs challenged the Forest Service’s issuance of grazing permits in the Fremont-Winema National Forests, alleging that grazing would harm endangered fish species endemic to the Klamath Basin.⁵¹ The Forest Service examined the environmental effects of the project in its EA, including those related to the effects of climate change, and ultimately issued a finding of no significant impact.⁵² Plaintiffs challenged the Forest Service’s discussion of climate change’s impact on the species as too general, but the court found that the EA’s plan to routinely monitor the impacts of drought and climate change on the ecosystem and flexibly address the impacts through adaptive management was sufficient.⁵³ The Forest Service noted in the EA that it was difficult to predict the effects that climate change would have on the species, but did discuss possible future scenarios (such as more frequent droughts) and its plan to create more resilient habitat in the area.⁵⁴ Given the uncertainty of climate change, the court found the Forest Service’s approach to be sufficient.⁵⁵

⁵⁰ Theodore Roosevelt Conservation P’ ship, 616 F. 3d at 517 (“Allowing adaptable mitigation measures is a responsible decision in light of the inherent uncertainty of environmental impacts”).

⁵¹ 239 F. Supp. 3d at 1254–55.

⁵² *Id.* at 1257.

⁵³ *Id.* at 1276.

⁵⁴ *Id.*

⁵⁵ *Id.*

APPENDIX A

LIST OF ADAPTIVE MANAGEMENT CASES

Protect Our Communities Foundation v. Jewell, 825 F. 3d 571 (9th Cir. 2016), *aff'g* 2014 WL 1364453 (S.D. Cal. 2014)

Environmental group challenged the BLM's grant of a wind energy right of way, arguing that the adaptive management plan in the agency's EIS was not sufficiently detailed and impermissibly deferred decisionmaking. The court found the plan to be sufficiently specific and detailed to direct the agency's management decisions, and found that the BLM's use of adaptive management was permissible under NEPA.

Theodore Roosevelt Conservation Partnership v. Salazar, 616 F.3d 497 (D.C. Cir. 2010), *aff'g* 605 F. Supp. 2d 263 (D.D.C. 2009)

Environmental groups brought suit against the BLM, arguing that the agency's ROD allowing natural gas development violated NEPA. The D.C. Circuit ruled in favor of the BLM, finding that the agency's adaptive management plan described with sufficient specificity performance goals, monitoring procedures, and decisionmaking processes. The BLM's plan also included fixed mitigation measures applicable to all plans, as well as a selection of specific adaptive management mitigation measures that would be applied on a case-by-case basis.

Klamath Siskiyou Wildlands Center v. Boody, 468 F. 3d 549 (9th Cir. 2006), *rev'ing* 2006 WL 448714 (D. Or. 2006).

Environmental groups brought suit to enjoin a timber sale proposed by the BLM, arguing that management changes constituted amendments. The Ninth Circuit enjoined the sale, concluding that the BLM could not use adaptive management as a justification for not properly conducting supplemental NEPA analysis. The BLM contended that its decision to change its management strategy was permissible within an adaptive management framework; the court rejected this argument, as the change the BLM sought to implement was very similar to an alternative it had rejected in an earlier stage of NEPA analysis.

Natural Resources Defense Council v. National Park Service, 2017 WL 1438238 (M.D. Fla. 2017)

Environmental groups brought suit against the National Park Service for its finding of no significant impact and approval of a private oil and gas exploration plan within a National Reserve. The court noted that a FONSI based on mitigation measures is permissible, provided that the measures are integrated into the proposed action and the agency supports its conclusion that the mitigation measures will actually reduce environmental impact. NPS's mitigation measures had met that standard, and the court concluded that NPS had complied with NEPA and an EIS was not required.

Oregon Wild v. Cummins, 239 F. Supp. 3d 1247 (D. Or. 2017)

Environmental groups brought suit challenging the Forest Service's finding of no significant impact from permitted grazing. The plaintiffs argued that the EA did not sufficiently consider the effects of climate change, but the court found that the agency's examination of the

environmental effects of climate change was sufficient, and the use of adaptive management was appropriate in the face of future environmental uncertainties.

Save Our Cabinets v. U.S. Department of Agriculture, 254 F. Supp. 3d 1241 (D. Mont. 2017)

Environmental groups brought suit against the Forest Service challenging the adequacy of the agency's NEPA analysis where future environmental impacts of a proposed mining operation were uncertain. The court found that the use of adaptive management was appropriate in the face of uncertainty, because it allowed the Forest Service to adjust its practices as the effects became clear. The court noted that although the Forest Service's analysis was compliant with NEPA, the analysis presented shortcomings in the context of NFMA and other statutes.

Mayo v. Jarvis, 117 F. Supp. 3d 91 (D.D.C. 2016), *aff'd* 875 F. 3d 11 (D.C. Cir. 2017)

Wildlife photographers challenged a National Park Service elk reduction program, arguing NEPA required the agency to prepare a new, site-specific NEPA analysis each year before authorizing an elk hunt. The plaintiffs pointed out gaps in the agency's EIS, which the court determined were a result of the use of adaptive management. The court upheld the EIS, finding the gaps were modest and an EIS need only be "reasonably complete," containing "sufficient detail" to fairly evaluate environmental consequences.

Izaak Walton League of America, Inc. v. Tidwell, 2015 WL 632140 (D. Minn. 2015)

Environmental groups challenged the Forest Service's determination of snowmobile routes on the grounds that the agency adopted an adaptive management plan that was included in the ROD, but not the EIS. The court found the agency's adaptive management plan sufficiently detailed, thorough, and well-analyzed, but noted that NEPA required the agency to discuss the adaptive management strategy in the EIS, which it had not. However, the court found that this compliance failure was harmless error.

Friends of the Wild Swan v. Jewell, 2014 WL 4182702 (D. Mont. 2014)

Environmental group challenged a Department of Interior habitat conservation plan, arguing the agency did not adequately consider the effects of climate change in approving the plan. The court concluded that the agency had complied with NEPA and that the EIS, which included adaptive management measures, sufficiently described how the agency would handle the effects of climate change.

Powder River Basin Resource Council v. U.S. Bureau of Land Management, 37 F. Supp. 3d 59 (D.D.C. 2014)

Conservation groups challenged the BLM's EA and finding of no significant impact for oil and gas development. The BLM's plan included measurable performance standards, a monitoring plan that assessed compliance with those standards, and specific recommended mitigation measures to implement in the event a performance threshold was crossed. The court found this sufficient to satisfy NEPA, and also noted that the use of adaptive management to manage future impacts weighed in favor of finding that the BLM had complied with NEPA.

Klamath Siskiyou Wildlands Center v. Grantham, 2013 WL 1420259 (E.D. Cal. 2013), *aff'd in part* 642 Fed. Appx. 742 (9th Cir. 2016) (directing the agency to prepare a new NEPA analysis

including the impact of drifting cattle, which had been mentioned as a major issue but not discussed in the original NEPA analysis)

Environmental groups brought suit challenging the Forest Service's EA allowing the issuance of grazing permits in Klamath National Forest. The court found that the Forest Service's detailed monitoring plan evaluating multiple indicators, accompanying action thresholds, and "reasonably complete discussion of mitigation measures" satisfied NEPA.

National Parks Conservation Association v. Jewell, 965 F. Supp. 2d 67 (D.D.C. 2013)

Environmental groups brought suit against the National Park Service, arguing the agency's approval of a right of way for electric transmission lines through national park areas violated NEPA. The court found that the agency had satisfied NEPA, and the mitigation measures in the adaptive management plan were thoroughly considered and discussed. The court also noted that new information resulting in environmental effects that were within the scope of the EIS did not trigger NEPA's supplementation requirement.

High Sierra Hikers Association v. U.S. Department of Interior, 848 F. Supp. 2d 1036 (N.D. Cal. 2012)

Environmental group brought suit against the National Park Service, alleging that general management plans for two national parks were not compliant with NEPA. The court found the agency's adaptive strategy sufficiently detailed to satisfy NEPA, and also determined that the agency's use of adaptive management prevented the EIS from becoming outdated.

Center for Biological Diversity v. Bureau of Land Management, 2011 WL 4551175 (D. Ariz. 2011)

Environmental group brought suit against the BLM, arguing that its resource management plans for a district in Arizona, particularly as they related to grazing, violated NEPA. The court found that the BLM's discussion of mitigation and monitoring for the grazing allotments was sufficient to satisfy NEPA, and noted that the court cannot substitute its judgment for that of the agency.

Oregon Natural Desert Ass'n v. Bureau of Land Management, 2011 WL 5830435 (D. Or. 2011)

Environmental group challenged the BLM's EIS for a large-scale habitat restoration project, arguing that the agency's adaptive management implementation required supplemental NEPA analysis. The court found the BLM's discussion of the adaptive management plan sufficiently detailed to guide future actions without requiring supplementation, and also noted that the flexible approach provided by adaptive management was necessary to execute such a large-scale project.

Western Watersheds Project v. Salazar, 766 F. Supp. 2d 1095 (D. Mont. 2011), *aff'd in part* 494 Fed. Appx. 740 (9th Cir. 2012)

Environmental groups challenged adaptive management changes in a bison management plan, arguing the Department of Interior and Forest Service failed to properly supplement under NEPA. The court found that the adaptive management changes fit within plan's framework and would not have environmental effects not previously considered.

Wilderness Society v. U.S. Bureau of Land Management, 822 F. Supp. 2d 933 (D. Ariz. 2011), *aff'd* 526 Fed. Appx. 790 (9th Cir. 2013).

Environmental groups challenged BLM's EIS and Resource Management Plans for two National Monuments on the grounds that the agency's mitigation measures were inadequate and its adaptive strategy was impermissible under NEPA. The court found that the BLM had formulated a sufficiently detailed monitoring plan and mitigation measures, and noted that adaptive management is permissible under NEPA in the programmatic context.

Biodiversity Conservation Alliance v. Bureau of Land Management, 2010 WL 3209444 (D. Wyo. 2010)

Environmental group brought suit against the BLM, arguing the agency relied on adaptive management to compensate for NEPA deficiencies in approving natural gas drilling in a BLM project area in Wyoming. The court found that BLM had developed appropriate mitigation measures, and the use of adaptive management would compensate for any unforeseen circumstances that could not have been anticipated in the final EIS.

National Wildlife Federation v. Harvey, 574 F. Supp. 2d 934 (E.D. Ark. 2008)

Conservation group challenged the Department of Interior's decision not to supplement its EIS in connection with a water pumping project. The court found the agency's monitoring plan and use of adaptive management to correct any unforeseen harm sufficient under NEPA, and upheld the agency's adaptive management under the deferential review standard set out by the APA.

People of California ex rel. Lockyer v. U.S. Department of Agriculture, 2008 WL 3863479 (E.D. Cal. 2008), *aff'd* 646 F.3d 1161 (9th Cir. 2011)

California attorney general, on behalf of the people of California, brought suit against the Forest Service challenging the 2004 Sierra Nevada Forest Plan Amendment as violating NEPA. In particular, the plaintiff objected to the scientific utility of adaptive management as applied to the 2004 Amendment. The court noted that it is outside of the court's role to choose between competing scientific methodologies, of which adaptive management is one. The court also found NEPA to be satisfied because the supplemental EIS included detailed discussion of monitoring and surveying strategies.

Natural Resources Defense Council, Inc. v. U.S. Army Corps of Engineers, 457 F. Supp. 2d 198 (S.D.N.Y. 2006)

Environmental groups and concerned citizens challenged an Army Corps of Engineers channel dredging project as noncompliant with NEPA. The court found the Corps's adaptive management plan outlined in the agency's EA deficient because it although it developed monitoring protocols, it did not create any standards for evaluation or offer sufficient assurance that the mitigation measures would be effective. The court also concluded that the agency relied on "incomplete data, faulty assumptions, and unreliable averages" in its NEPA analysis.

Western Watersheds Project v. U.S. Forest Service, 2006 WL 292010 (D. Idaho 2006)

Environmental group brought suit against the Forest Service, challenging the agency's statement in its EIS that it would use adaptive management to develop specific protocols if the

particular action was selected. The court struck down the adaptive management strategy, finding it did not sufficiently describe the monitoring techniques or protocols that would be used.

In re Operation of the Missouri River System Litigation, 363 F. Supp. 2d 1145 (D. Minn. 2004), *aff'd in part* 421 F.3d 618 (8th Cir. 2005)

States and conservation groups challenged the Army Corps of Engineers' EIS for water allocations from the Missouri River, alleging that the Corps's adaptive management approach allowed the Corps to circumvent NEPA "when policy choices are modified" The Corps had acknowledged that the agency would have to comply with NEPA if a major policy change occurred, and the court concluded that without evidence from the plaintiffs that the Corps would evade NEPA, the Corps' approach complied.

Oregon Natural Resources Council Action v. U.S. Forest Service, 59 F. Supp. 2d 1085 (W.D. Wash. 1999)

Environmental groups challenged timber sale on the grounds that the Forest Service failed to properly supplement its NEPA analysis in response to new information about environmental conditions. The court found that the Forest Service's adaptive management plan could adequately deal with the new information that plaintiffs argued required supplementation, and concluded the decision not to supplement was not arbitrary and capricious.