

BIODIVERSITY CONSERVATION IN THE NATIONAL FORESTS, AND THE 2012 PLANNING RULE

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Abstract

The U.S. Forest Service is required to manage the national forests for multiple use, including outdoor recreation, timber production, and more recently, biodiversity conservation. National forest management plans throughout the country are currently being revised under the 2012 Planning Rule. As will be discussed, the 2012 rule provides the Agency with high levels of discretion and management flexibility. The rule does not require maintaining viable populations of all native plant and animal species. The Agency is required to conserve viable populations of “species of conservation concern,” yet the Regional Forester is granted sole discretion in designating these species. The 2012 rule is highly controversial, primarily for the reason that it grants the Agency too much discretion. Wildlife management and policy experts are concerned that the biodiversity provisions within the rule will prove ineffective in the conservation of native wildlife.

On closer examination, the conservation mandates presented by the 2012 rule regarding species of conservation concern, and other at-risk species, are actually quite strong, and if strictly followed would influence every aspect of national forest management and effectively constrain agency discretion. Properly understood, the 2012 Planning Rule provides a mix of strong biodiversity provisions with agency discretion and management flexibility. The key to effective biodiversity conservation in the national forests, and an equitable balance of interests, is to ensure that the conservation mandates for at-risk species are genuinely met, at both the management plan and individual project levels. The National Environmental Policy Act (NEPA) plays an essential role. NEPA regulations remove biodiversity conservation in the national forests from the high levels of discretion and subjectivity granted the Agency by the 2012 rule, providing the strong biodiversity provisions within the rule the strength they have. The 2012 Planning Rule, in the context of NEPA, provides a potentially effective means of conserving native biodiversity in the national forests.

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I. INTRODUCTION

National forests managed by the U.S. Forest Service make up approximately 10% of the land area of the United States.¹ National forests are legally protected, but they are not protected to the same extent as the national parks. There is no general requirement to maintain natural conditions and processes in the national forests. By law and agency policy, the Forest Service is required to manage these forests for multiple use, including outdoor recreation, timber production, and, more recently, the conservation of native biodiversity.² Finding a proper balance of uses in these forests is especially difficult. According to federal regulations and agency policy, the Forest Service is required to maintain viable or sustainable populations of all native plant and animal species in the national forests.³ It is debatable whether the Agency is meeting this standard. With respect to its management of national forests in the Sierra Nevada Mountains of California, the Agency has faced a series of lawsuits that seek to compel

1. See MICHAEL P. DOMBECK ET AL., FROM CONQUEST TO CONSERVATION: OUR PUBLIC LANDS LEGACY xvi (2003).

2. See *id.*; see also Multiple-Use Sustained-Yield Act of 1960, 16 U.S.C. §§ 528–531 (2012). The National Forest System includes specially designated areas that *are* managed to retain their natural conditions and processes. These include wilderness areas and research natural areas. These areas are not managed for multiple use. See, e.g., FOREST SERV., U.S. DEP'T OF AGRIC., FOREST SERVICE MANUAL § 2320, WILDERNESS MANAGEMENT 7–9, 11 (2007).

3. See, e.g., FOREST SERV., U.S. DEP'T OF AGRIC., FOREST SERVICE MANUAL § 2670, THREATENED, ENDANGERED AND SENSITIVE PLANTS AND ANIMALS 4 (2005).

more effective protection of California spotted owls and other native species.⁴

In its practice, the Forest Service seeks to conserve native biodiversity as this is appropriately balanced with the provision of timber and other required forest products and services. Within the national forests, native species *are* protected, but to an extent consistent with providing desired levels of timber, grazing range, recreational opportunities, etc. The levels of protection provided native species are subject to this balancing. This Forest Service practice can be called “multiple-use biodiversity conservation.” As will be discussed, this practice is consistent with the traditional agency practice of fitting together, in the management of a national forest, the many diverse interests in the forest. In this balancing of interests, compromise is expected on all sides.

National forest management plans throughout the country are currently being revised under the 2012 Planning Rule.⁵ We are in a transition period. As scholars have claimed, this planning rule codifies or formalizes agency practices that have been in place for many years.⁶ As will be discussed, the 2012 rule provides high levels of agency discretion and management flexibility. The biodiversity conservation mandates presented by the 2012 rule are heavily qualified. This rule does not require maintaining viable populations of all native plant and animal species.⁷ The Agency is required to conserve viable populations of “species of conservation concern,” yet the Regional Forester is granted sole discretion in designating these species.⁸ The 2012 Planning Rule is highly controversial.

4. See, e.g., Complaint at 7, Ctr. for Biological Diversity v. Skalski, 61 F. Supp. 3d 945 (E.D. Cal. 2014) (No. 1:14-cv-01382) [hereinafter Ctr. for Biological Diversity Complaint].

5. See JONATHAN HABER, CREATING THE NEXT GENERATION OF NATIONAL FOREST PLANS 3–4 (2015); see also *Welcome to the U.S. Forest Service Planning Rule Revision!*, FOREST SERV., U.S. DEP'T OF AGRIC., <https://www.fs.usda.gov/planningrule> [<https://perma.cc/L2H8-8XVZ>] (last visited Jan. 18, 2018).

6. The 2012 rule has been incorporated into federal regulations at 36 C.F.R. pt. 219 (2017). See HABER, *supra* note 5, at 4; see also Courtney A. Schultz et al., *Wildlife Conservation Planning Under the United States Forest Service's 2012 Planning Rule*, 77 J. WILDLIFE MGMT. 428, 442 (2013).

7. See 36 C.F.R. § 219.9 (2017).

8. *Id.* The Regional Forester is in charge of a broad geographical area of the country, a region, which usually includes several states. There are nine regions. The supervisor of each national forest within a region reports to the Regional Forester. See, e.g., *Regional Overview: Pacific Southwest Region*, FOREST SERV., U.S. DEP'T OF AGRIC.,

Wildlife management and policy experts are concerned that the biodiversity provisions within the rule are too ambiguous, grant the Agency too much discretion, and will prove ineffective in the conservation of native wildlife.⁹

On closer examination, however, the conservation mandates presented by the 2012 rule regarding species of conservation concern, and other at-risk species, are actually quite strong, and if strictly followed would influence every aspect of national forest management and effectively constrain agency discretion. Properly understood, the 2012 Planning Rule provides a mix of strong biodiversity provisions with agency discretion and management flexibility. The rule indeed codifies or formalizes agency practices that have been in place for many years, yet the rule is intended to standardize and improve agency practices as these are brought into a formal system. The 2012 rule allows compromises in species protections where necessary to achieve an equitable balance of ecological, social, and economic interests in the forests. This is multiple-use biodiversity conservation, but under definite constraints.

The key to effective biodiversity conservation in the national forests, and an equitable balance of interests, is to ensure that the conservation mandates regarding species of conservation concern, and other at-risk species, are genuinely met, at both the management plan and individual project levels. The National Environmental Policy Act (NEPA) plays an essential role. We must insist that, within environmental impact statements and other required documents prepared in accordance with NEPA, the analyses of impacts on native species are thorough, accurate, and well reasoned, using the best available scientific information, as required by NEPA regulations.¹⁰ NEPA and its implementing regulations remove biodiversity conservation in the national forests from the high levels of discretion and subjectivity granted the Agency by the 2012 Planning Rule, providing the strong biodiversity provisions within the rule the strength they have. As the Agency complies with its conservation mandates concerning at-risk species, by means of impact analyses that satisfy NEPA

<https://www.fs.usda.gov/main/r5/about-region/overview> [<https://perma.cc/4X36-FG5F>]
(last visited Jan. 18, 2018).

9. Schultz et al., *supra* note 6, at 442.

10. 40 C.F.R. §§ 1500–1508 (2017).

requirements, the balance of interests in the national forests will become less skewed toward resource provision and more truly equitable. The 2012 Planning Rule, in the context of NEPA regulations, provides a potentially effective means of conserving native biodiversity in the national forests.

II. THE VIABLE POPULATIONS MANDATE

Biodiversity conservation was a later addition to mandates placed upon the Forest Service by federal law. Early legislation required that the national forests be managed primarily for watershed protection and timber production.¹¹ The explicit mandate to conserve biodiversity arose with the National Forest Management Act of 1976 (NFMA) and its implementing regulations.¹² According to the NFMA regulations issued in 1979: “Ensure that fish and wildlife habitats are managed to maintain viable populations of all existing native vertebrate species and to improve habitat of selected species . . . to the extent practicable”¹³ In addition:

[P]rovide for diversity of plant and animal communities and tree species to meet the overall multiple-use objectives of the planning area. Diversity of plant and animal communities and tree species will be considered throughout the planning process. . . . [M]anagement prescription, where appropriate and to the extent practicable, will preserve and enhance the diversity of plant and animal communities¹⁴

This biodiversity conservation mandate is heavily qualified. According to these regulations, agency managers are to maintain viable populations of all existing native vertebrate species “to the extent practicable.”¹⁵ Managers are to “preserve and enhance the diversity of plant and animal communities,”

11. See, e.g., DOMBECK, *supra* note 1, at 20, 24; Jack Tuholske & Beth Brennan, *The National Forest Management Act: Judicial Interpretation of a Substantive Environmental Statute*, 15 PUB. LAND L. REV. 53, 57–59 (1994).

12. 16 U.S.C. §§ 1600–1687 (2012).

13. 36 C.F.R. § 219.13(b)(8) (1982).

14. *Id.* § 219.13(g).

15. *Id.* § 219.13(b)(8).

again to the extent practicable.¹⁶ Managers are merely to consider the diversity of plant and animal communities during the planning process.¹⁷

Biodiversity conservation in the national forests was considerably strengthened by the revision of the NFMA regulations issued in 1982.¹⁸ NFMA requires that a land and resource management plan be developed for each national forest, and the 1982 regulations—known as the 1982 Planning Rule—specify the general content of these plans.¹⁹ Land management plans currently in place for national forests throughout the country are subject to this 1982 rule.²⁰ According to this rule:

Fish and wildlife shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.²¹

16. *Id.* § 219.13(g).

17. *Id.*

18. 36 C.F.R. pt. 219 (2000).

19. 16 U.S.C. § 1604(a) (2012); 36 C.F.R. § 219.11 (2000).

20. *See Planning Rule 101*, FOREST SERV., U.S. DEPT OF AGRIC., <https://www.fs.usda.gov/main/planningrule/101> [<https://perma.cc/EUV8-BYYT>] (last visited Jan. 18, 2018). Revised planning rules were issued in 2000, 2005, and 2008, but the courts set aside the 2005 and 2008 rules. The Agency has returned to the 2000 rule. The transition section of this rule allows continued use of the 1982 rule, however, for management plan development and revision. The Agency has continued to use the 1982 rule for this purpose. *See History of Forest Planning*, FOREST SERV., U.S. DEPT OF AGRIC., <https://www.fs.usda.gov/main/planningrule/history> [<https://perma.cc/UM2X-YXVL>] (last visited Jan. 18, 2018); *see also* National Forest System Land Management Planning, 77 Fed. Reg. 21,162, 21,163 (Apr. 9, 2012) (codified at 36 C.F.R. pt. 219) [hereinafter Preamble 2012 Rule].

21. 36 C.F.R. § 219.19 (2000).

As Robert Keiter has pointed out, this viability mandate is “neither qualified nor tempered.”²² In accordance with the 1982 rule, the Agency must manage fish and wildlife to ensure that at least viable populations of existing native vertebrate species are maintained in the national forests.²³ Populations must be large enough and sufficiently well distributed to ensure continued survival of native fish and wildlife in the planning area (a national forest).²⁴

In 1983, the U.S. Department of Agriculture (USDA) issued a departmental regulation, USDA 9500-4, which includes a stronger biodiversity mandate for the national forests.²⁵ The U.S. Forest Service is under USDA authority.²⁶ According to this regulation: “Habitats for all existing native and desired non-native plants, fish, and wildlife species will be managed to maintain at least viable populations of such species.”²⁷ This requirement is not limited to vertebrates. The viable populations mandate is here extended to all existing native plant and animal species.²⁸ The regulation continues: “[H]abitat must be provided for the number and distribution of reproductive individuals to ensure the continued existence of a species throughout its geographic range.”²⁹ “Each USDA agency,” the regulation states, “will review programs that will be affected by this regulation annually, and make the necessary administrative changes to bring agency programs into compliance with its provisions.”³⁰

Agency policies presented in the *Forest Service Manual* are consistent with this USDA regulation and the 1982 Planning

22. Robert B. Keiter, *Ecological Concepts, Legal Standards, and Public Land Law: An Analysis and Assessment*, 44 NAT. RESOURCES J. 943, 947 (2004).

23. 36 C.F.R. § 219.19 (2000).

24. *Id.*

25. U.S. DEP'T OF AGRIC., DEPARTMENTAL REGULATION 9500-4 (1983).

26. *See Agencies*, U.S. DEP'T OF AGRIC., <https://www.usda.gov/our-agency/agencies> [<https://perma.cc/G8T2-U28Z>] (last visited Jan. 18, 2018).

27. U.S. DEP'T OF AGRIC., DEPARTMENTAL REGULATION 9500-4 § 3(a)(1) (1983).

28. We typically understand “wildlife” as referring to all wild (undomesticated) animals. *See, e.g., Wildlife*, OXFORD DICTIONARIES, <https://en.oxforddictionaries.com/definition/wildlife> [<https://perma.cc/WGF3-Z63Q>] (last visited Jan. 18, 2018).

29. U.S. DEP'T OF AGRIC., DEPARTMENTAL REGULATION 9500-4 § 3(a)(1) (1983).

30. *Id.* § 5(d).

Rule, requiring that agency managers “[m]aintain viable populations of all native and desired nonnative wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands.”³¹ The land management plan currently in place for the Stanislaus National Forest in the Sierra Nevada provides this management goal: “Provide habitat for viable populations of all native . . . wildlife, fish and plants. . . . [G]ive special attention to sensitive species to see that they do not become Federally listed as Threatened or Endangered.”³² In the management of a national forest, the Agency is legally obligated to follow its approved management plan for that forest.³³

In accordance with federal regulations and agency policies, the Forest Service is required to maintain viable or sustainable populations of all existing native plant and animal species in the national forests. For comparison, the Forest Service is not required to protect native species to the extent mandated for the national parks. According to National Park Service policies governing management of Yosemite, Sequoia, Yellowstone, and other national parks, managers must protect all native park plants and animals in their natural distributions and abundances, not merely viable populations.³⁴ The lower conservation standard for the national forests allows the Forest Service greater discretion and flexibility in fitting species protections with resource provision and other agency objectives.

31. FOREST SERV., U.S. DEPT OF AGRIC., *supra* note 3, at 4. According to this document, the legal authority behind these policies includes USDA Regulation 9500-4. *Id.* at 3.

32. FOREST SERV., U.S. DEPT OF AGRIC., RIM FIRE RECOVERY ENVIRONMENTAL IMPACT STATEMENT 75 (2014) [hereinafter RIM FIRE RECOVERY EIS].

33. 16 U.S.C. § 1604(i) (2012); *see* Charles F. Wilkinson & H. Michael Anderson, *Land and Resource Planning in the National Forests*, 64 OR. L. REV. 1, 74 (1985).

34. NAT'L PARK SERV., U.S. DEPT OF THE INTERIOR, MANAGEMENT POLICIES 2006, at 42 (2006) (“The National Park Service will maintain as parts of the natural ecosystems of parks all plants and animals native to park ecosystems. . . . The Service will successfully maintain native plants and animals by preserving and restoring the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur.”).

III. RIM FIRE RECOVERY PROJECT, STANISLAUS NATIONAL FOREST

The Rim Fire of 2013 was the largest wildfire ever recorded in the Sierra Nevada.³⁵ It consumed 257,314 acres (400 square miles) in total, and 154,530 acres within the Stanislaus National Forest.³⁶ Approximately 60% of the burned area consisted of conifer forests.³⁷ The Forest Service proposed salvage logging, hazard tree removal, and fuels reduction on approximately 33,000 acres of burned conifer forestland.³⁸ Salvage logging was proposed for the most highly burned areas.³⁹ The Agency proposed to revegetate approximately 24,000 acres with a mix of conifer species.⁴⁰ The Agency has left open the possibility of revegetating an additional 4,000 acres if, after five years, it appears that natural regeneration will not produce the desired composition and density of forest trees.⁴¹ Herbicides will be used to control native oaks and shrubs that inhibit survival and growth of the desired conifers.⁴²

In the Sierra Nevada, subsequent to the Rim Fire, American Fire, Aspen Fire, and others, the Forest Service has been engaged in salvage logging and establishing conifer plantations with use of herbicides.⁴³ Considering both national forest and private lands, many natural forests in these mountains have been converted to plantations. According to World Wildlife Fund, in the Sierra Nevada “[t]he vast majority

35. RIM FIRE RECOVERY EIS, *supra* note 32, at 1.

36. *Id.* at xiii, 1. The remainder of the burned area lies within Yosemite National Park, Bureau of Land Management (BLM) lands, and private lands. *Id.*

37. Ctr. for Biological Diversity Complaint, *supra* note 4, at 2.

38. See FOREST SERV., U.S. DEPT OF AGRIC., RIM FIRE RECOVERY RECORD OF DECISION 8–10 (2014) [hereinafter RIM FIRE RECOVERY ROD].

39. RIM FIRE RECOVERY EIS, *supra* note 32, at 350.

40. FOREST SERV., U.S. DEPT OF AGRIC., RIM FIRE REFORESTATION RECORD OF DECISION 6 (2016) [hereinafter RIM FIRE REFOREST ROD].

41. *Id.* at 8.

42. Specifically, herbicides will be used “when greater than 20% of the land is vegetated by competing vegetation.” *Id.* at 19. Herbicides will also be used for noxious weed eradication. *Id.*

43. See, e.g., FOREST SERV., U.S. DEPT OF AGRIC., BIG HOPE FIRE SALVAGE AND RESTORATION PROJECT, ENVIRONMENTAL ASSESSMENT 13–15 (2014); FOREST SERV., U.S. DEPT OF AGRIC., ASPEN RECOVERY AND REFORESTATION PROJECT, ENVIRONMENTAL ASSESSMENT 15 (2014).

of native forests have already been largely converted to tree plantations.”⁴⁴ Plantations typically consist of stands dominated by one or two conifer species.⁴⁵ Seedlings are typically planted quite densely, up to 300 per acre, and are evenly spaced.⁴⁶ The Forest Service proposes thinning the new plantations approximately ten years after planting.⁴⁷ The Rim Fire was particularly intense and destructive partly because the Agency had not thinned previously established plantations in the area, due to budget constraints.⁴⁸ The densely packed young trees, all the same age, were highly susceptible to burning.⁴⁹

Rim Fire project documents attempt to justify this traditional practice. The Agency claims that salvage logging of both standing and downed trees is necessary to capture the economic value of the dead trees in the burned area.⁵⁰ This is a “perishable commodity,” the Agency claims, which must be removed in a timely manner, within two years, if the wood is still to have value.⁵¹ The economic value of salvaged wood after a large fire is considerable.⁵² By law, the Forest Service is

44. D. Olson & J. Sawyer, *Sierra Nevada Forests*, WORLD WILDLIFE FUND, <https://www.worldwildlife.org/ecoregions/na0527> [<https://perma.cc/YUX7-S486>] (last visited Jan. 18, 2018). According to World Wildlife Fund, only approximately 25% of natural habitats are still intact in the Sierra Nevada. *Id.*

45. Marjie Brown, *In Plantations or Natural Stands: Ponderosa Is Programmed to Partner with Fire*, FIRE SCI. BRIEF (Joint Fire Sci. Program, Boise, Idaho), Jul. 2009, at 2, https://www.firescience.gov/projects/briefs/00-2-30_FSBrief56.pdf [<https://perma.cc/HU4A-RMWV>]. According to Brown, nearly 400,000 acres of California’s national forests are managed as ponderosa pine plantations. *Id.* at 1.

46. *Id.* at 2; Amy Quinton, *Timber Plantations Can Make California Wildfires Worse*, CAPITAL PUB. RADIO (Aug. 4, 2015), <http://www.capradio.org/articles/2015/08/04/timber-plantations-can-make-california-wildfires-worse/> [<https://perma.cc/9P94-KDKZ>].

47. See RIM FIRE RECOVERY EIS, *supra* note 32, at 5–6; see also Lauren Sommer, *One Year After Calif. Rim Fire, Debate Simmers Over Forest Recovery*, NPR (Aug. 18, 2014, 5:15 PM), <http://www.npr.org/2014/08/18/341391128/one-year-after-calif-rim-fire-debate-simmers-over-forest-recovery>.

48. See Sommer, *supra* note 47; see also Vivian Parker, Cal. Native Plant Soc’y, Comment Letter on Proposed Rim Fire Recovery Project 1, 4 (Jan. 6, 2014), http://www.californiachaparral.com/images/CNPS_Comments_Rim_Fire_Scoping_Jan_6_2014.pdf [<https://perma.cc/97VM-HQNQ>].

49. Sommer, *supra* note 47; Brown, *supra* note 45, at 3.

50. RIM FIRE RECOVERY EIS, *supra* note 32, at xiii, 9.

51. *Id.*

52. See Eric Holst, *After the Rim Fire, the Surprising Role of Salvage Logging*, ENVT'L DEF. FUND: EDF VOICES (Feb. 18, 2014), <https://www.edf.org/blog/2014/02/18/after-rim-fire-surprising-role-salvage-logging>

allowed to keep the profits from sale of the salvaged wood, which, according to critics, creates a perverse financial incentive.⁵³ The Agency also claims that dead standing trees constitute a safety hazard along roads, trails, and other publicly used areas, and so must be removed.⁵⁴ Yet another reason offered is that the dead trees constitute a serious fire hazard.⁵⁵ “Leaving the dead trees on site,” the Agency states, “would create a large and dangerous fuel load in this vast area”⁵⁶ The Forest Service is also concerned that the downed trees will inhibit deer access to critical winter habitat.⁵⁷ The Agency recognizes the importance of the dead trees as habitat for certain species.⁵⁸ Yet beyond a specified density of “snags” (dead standing trees) and downed logs, the Agency insists that the dead trees should be removed for especially economic, fire, and safety reasons.

Active revegetation of a large burned area is necessary, the Forest Service argues, since much of the area is at too great a distance from unburned forest for live conifers to act as an effective seed source, and the intensity of a large fire is such that seeds in the soil are destroyed.⁵⁹ In addition, native shrubs reestablish themselves in a burned area much more quickly than do conifers, and the shrubs inhibit conifer survival and growth.⁶⁰ Natural forest regeneration is possible, but would be extremely inefficient in much of a large burned area. According to the Forest Service, it would take hundreds of years for conifers to establish themselves again naturally.⁶¹ Active reforestation, using herbicides to control competing

[<https://perma.cc/QVB8-WBLJ>]; see also Jim Carlton, *Burned Trees Become a Hot Commodity*, WALL ST. J. (Oct. 11, 2013, 6:58 PM), <https://www.wsj.com/articles/burned-trees-become-a-hot-commodity-1381530693>.

53. See RIM FIRE RECOVERY EIS, *supra* note 32, at xiii, 9; Complaint at 2, 11–12, *Earth Island Inst. v. Quinn*, No. 1:14-CV-01140 (E.D. Cal. 2014) [hereinafter *Earth Island Inst. Complaint*].

54. RIM FIRE RECOVERY EIS, *supra* note 32, at xiii, 9–10.

55. *Id.* at xiii, 10.

56. *Id.* at 9.

57. *Id.* at 10; see also RIM FIRE RECOVERY ROD, *supra* note 38, at 18–19.

58. RIM FIRE RECOVERY EIS, *supra* note 32, at 8; RIM FIRE RECOVERY ROD, *supra* note 38, at 16–20.

59. FOREST SERV., U.S. DEP'T OF AGRIC., RIM FIRE REFORESTATION ENVIRONMENTAL IMPACT STATEMENT 7 (2016) [hereinafter RIM FIRE REFOREST EIS].

60. *Id.*

61. *Id.*

vegetation, is considered the most efficient method of conifer forest regeneration, and so is essential, according to the Agency, to meet a variety of needs. In project documents, the Agency writes: "Several sensitive wildlife species lost critical habitat when the Rim Fire burned extensive amounts of mature trees."⁶² The Agency must act to "quickly meet future resource needs for wildlife, recreation, watershed and timber"⁶³

In published articles, forest management experts defend salvage logging and plantation forestry along these same lines.⁶⁴ This practice is part of an old and well-established forestry paradigm. In one article, John Sessions and other experts ask: "Will the land—and the people affected by it—be better served by letting nature take its course or by making strategic investments to influence the course of future ecosystems?"⁶⁵ Their answer, unequivocally, is that in many forests the proper course is to take action that includes salvage logging; planting genetically improved, disease-resistant conifers; and controlling competing vegetation with herbicides.⁶⁶

The major problem with salvage logging and plantation forestry is that they suppress natural forest succession. Many native species are dependent upon the early successional stages that result from fire, in which native shrubs and oaks are the predominant vegetation.⁶⁷ Post-fire, early successional forest habitat ("complex early seral forest") is reported to be extremely rare in the Sierra Nevada.⁶⁸ This is due to decades of fire suppression, as well as extensive salvage logging and

62. *Id.* at 7.

63. *Id.* at 9.

64. See generally John Sessions et al., *Hastening the Return of Complex Forests Following Fire: The Consequences of Delay*, 102 J. FORESTRY 38 (2004).

65. *Id.* at 45.

66. *Id.* at 39–40, 44–45.

67. Parker, *supra* note 48, at 2–3; Dominick A. DellaSala et al., *Complex Early Seral Forests of the Sierra Nevada: What Are They and How Can They Be Managed for Ecological Integrity?*, 34 NAT. AREAS J. 310, 314–15 (2014); CTR. FOR BIOLOGICAL DIVERSITY & JOHN MUIR PROJECT, *NOURISHED BY WILDFIRE 7* (2014), https://www.biologicaldiversity.org/species/birds/black-backed_woodpecker/pdfs/Nourished_by_Wildfire.pdf [<https://perma.cc/7YFS-92RL>].

68. DellaSala et al., *supra* note 67, at 318; CTR. FOR BIOLOGICAL DIVERSITY & JOHN MUIR PROJECT, *supra* note 67, at 3; Ctr. for Biological Diversity Complaint, *supra* note 4, at 2, 10.

reforestation on public and private lands.⁶⁹ According to biologist Vivian Parker of the California Native Plant Society, forest biodiversity is at its highest within natural forests in the early successional stages during approximately the first thirty years after fire.⁷⁰ She writes: “Food in the form of seeds, nuts, foliage, and berries; and habitat elements for cover, resting, denning, and birthing are all highest in the forest during this period.”⁷¹ She claims that salvage logging and the establishment of conifer plantations eliminates the ecological benefits of fire, including early successional forest habitat and the support of diverse native species.⁷²

Biologists are concerned that species dependent upon post-fire habitat in the Sierra Nevada are undergoing population losses. There is concern that the black-backed woodpecker (*Picoides arcticus*) is suffering declines.⁷³ It has been documented that bird species dependent upon native shrubs are in decline, including orange-crowned warblers (*Oreothlypis celata*), yellow warblers (*Setophaga petechia*), and Brewer’s blackbird (*Euphagus cyanocephalus*).⁷⁴ Scientists are concerned that rare and endemic plants, such as Small’s southern clarkia (*Clarkia australis*) and Yosemite woolly sunflower (*Eriophyllum nubigenum*), are threatened by this agency practice—there is concern over the impacts of herbicides on these and other sensitive plants.⁷⁵ In addition, there is concern over declines in bumblebees and other native bees.⁷⁶

69. DellaSala et al., *supra* note 67, at 311–19; CTR. FOR BIOLOGICAL DIVERSITY & JOHN MUIR PROJECT, *supra* note 67, at 6–7; Ctr. for Biological Diversity Complaint, *supra* note 4, at 2.

70. Parker, *supra* note 48, at 3.

71. *Id.*

72. *Id.*

73. RIM FIRE RECOVERY EIS, *supra* note 32, at 413–15; THE INST. FOR BIRD POPULATIONS & CAL. PARTNERS IN FLIGHT, A CONSERVATION STRATEGY FOR THE BLACK-BACKED WOODPECKER (*PICOIDES ARCTICUS*) IN CALIFORNIA 5–6, 22–23 (Monica L. Bond et al. eds., 2012) [hereinafter INST. FOR BIRD POPULATIONS]; Earth Island Inst. Complaint, *supra* note 53, at 12, 15, 25.

74. Chad Hanson, *The Yosemite Rim Fire Revisited*, EARTH ISLAND J. (June 3, 2014), http://www.earthisland.org/journal/index.php/elist/eListRead/the_yosemite_rim_fire_revisited [<https://perma.cc/G7TM-7G5Q>].

75. *Forestry Program*, CAL. NATIVE PLANT SOC’Y, <http://www.cnps.org/cnps/conservation/forestry/larson.php> [<https://perma.cc/5ZYT-NRE9>] (last visited Jan. 18, 2018).

76. *See id.*; Sierra Forest Legacy, *Pollinators and Early Successional Forests*, SIERRA

Within Rim Fire project documents, the Forest Service states that the purpose of reforestation is to “create a fire resilient mixed conifer forest that contributes to an ecologically healthy and resilient landscape rich in biodiversity.”⁷⁷ Note that the Agency seeks to provide a landscape “rich in biodiversity,” stopping short of the goal of maintaining native biodiversity generally, all existing native plants and animals. Within the purpose and need statement for the project, the Agency indicates concern with quickly providing late-successional and old growth conifer forests for the sake of wildlife dependent upon such habitat, including California spotted owls (*Strix occidentalis occidentalis*), goshawks (*Accipiter gentilis*), and fishers (*Pekania pennanti*).⁷⁸ The Agency is also concerned with quickly providing well-established conifer forests for the sake of outdoor recreation, watershed protection, and timber production.⁷⁹ The Agency does not indicate concern with maintaining early successional species, or with maintaining all existing native plants and animals in these forests.⁸⁰ The purpose of the project includes conserving rich, but more limited, biodiversity.⁸¹

California spotted owls are reportedly in decline on Forest Service lands in the Sierra Nevada where logging is allowed, but are not declining in a national park study area where logging is not permitted.⁸² This species has been designated a “sensitive species” by the Forest Service, indicating agency concerns over population losses.⁸³ California spotted owls are typically associated with old growth forests, but recent studies have shown that they may benefit from fire.⁸⁴ Apparently, they

FOREST VOICE (Sierra Forest Legacy, Garden Valley, Cal.), June 2014, at 7, http://www.sierraforestlegacy.org/NR_SFVoiceNewsletter/2014-06_V7N2.php [<https://perma.cc/A7TC-SNJ5>].

77. RIM FIRE REFOREST EIS, *supra* note 59, at xiii, 7, 9; RIM FIRE REFOREST ROD, *supra* note 40, at 5–6.

78. RIM FIRE REFOREST EIS, *supra* note 59, at 9–10.

79. *Id.*

80. *See id.*

81. *See id.* at 9.

82. *See* RIM FIRE RECOVERY EIS, *supra* note 32, at 335–36; Ctr. for Biological Diversity Complaint, *supra* note 4, at 3, 11.

83. RIM FIRE RECOVERY EIS, *supra* note 32, at 335.

84. *See id.* at 335–36; Monica L. Bond et al., *Habitat Use and Selection by California Spotted Owls in a Postfire Landscape*, 73 J. WILDLIFE MGMT. 1116, 1121–22 (2009); Ctr. For Biological Diversity Complaint, *supra* note 4, at 3.

preferentially forage in severely burned forests when these are available within 1.5 kilometers of their nests and roosts.⁸⁵ It is thought that the burned and recovering areas, with rapid growth of shrubs, provide good habitat for small mammals, the owls' prey.⁸⁶ In project documents, the Forest Service states that past timber harvests on public and private lands in the Rim Fire area have "reduced the amount of suitable habitat available," and that, as a result, this is considered an area of concern with respect to California spotted owls.⁸⁷

In the Environmental Impact Statement (EIS) for the Rim Fire project, the Agency has committed to avoid salvage logging and other operations within spotted owl "protected activity centers" (PACs), although they have proposed to remove hazardous trees within some PACs.⁸⁸ Recent studies have shown, however, that spotted owls extend their activities well beyond PACs.⁸⁹ According to these studies, spotted owl territories extend up to 1.5 kilometers from nest sites, and scientists have recommended that salvage logging and other operations be prohibited within this distance from nests.⁹⁰ According to the EIS, the Agency will observe a limited operating period from March 1 to August 31, the owl-nesting season, during which salvage logging and other operations will be prohibited within .25 miles of PAC boundaries.⁹¹ Yet this restriction allows salvage logging and other operations just beyond this buffer, and so approximately 1.0 kilometer from nests, well within owl territories.⁹² Of course, during the rest of the year salvage logging and other operations may occur just beyond PAC boundaries. According to the EIS, twenty-six

85. See Bond et al., *supra* note 84, at 1121–22.

86. See *id.*; see also RIM FIRE RECOVERY EIS, *supra* note 32, at 340–41.

87. RIM FIRE RECOVERY EIS, *supra* note 32, at 345.

88. *Id.* at 342–51. A PAC is 300 contiguous acres of suitable forest habitat approximately centered on a nest tree. *Id.* at 336.

89. See Bond et al., *supra* note 84, at 1121–23; Ctr. for Biological Diversity Complaint, *supra* note 4, at 10–12.

90. Bond et al., *supra* note 84, at 1121–23; see also Derek E. Lee & Monica L. Bond, *Occupancy of California Spotted Owl Sites Following a Large Fire in the Sierra Nevada, California*, 117 CONDOR 228, 233–34 (2015); Ctr. for Biological Diversity Complaint, *supra* note 4, at 10–12.

91. RIM FIRE RECOVERY EIS, *supra* note 32, at 45, 340, 346, 348.

92. This is assuming a PAC is centered on the nest tree.

spotted owl nest sites fall within .25 miles of “potentially disturbing activities.”⁹³

Recent studies have indicated that spotted owls will abandon their nests and territories in response to disturbances from salvage logging.⁹⁴ In the EIS, the Agency acknowledges:

Project activities have the potential to cause disturbance mainly because of the use of loud machinery. Loud noise from equipment such as chain saws or tractors is expected to occur in or along salvage units, project roads, landings, material sources, and water sources. Loud noise has the potential to change normal behavior patterns during the period operations would take place. The noise would potentially impair essential behavior patterns of the spotted owl related to breeding, feeding, or sheltering.⁹⁵

The Agency admits, “[p]ost-fire salvage logging may adversely affect rates of owl occupancy” of territories.⁹⁶ In addition, “[t]here is considerable uncertainty regarding the ecological effects of varying levels of salvage treatments to this species.”⁹⁷

The Forest Service has committed to flagging and avoiding nest trees during hazardous tree removal, and, during all operations, to leave a higher volume of large snags and downed wood than was originally proposed.⁹⁸ The Agency concludes that salvage logging and other treatments “may affect individuals but is not likely to result in a trend toward Federal listing or loss of viability”⁹⁹ The Agency justifies this assertion by noting the limited operating period, the flagging and avoiding of nest trees, and the decision to leave a higher volume of large snags and downed wood.¹⁰⁰ The reasons given are anecdotal, that is, superficial or sketchy. There is no

93. RIM FIRE RECOVERY EIS, *supra* note 32, at 346, 348–49.

94. Ctr. for Biological Diversity Complaint, *supra* note 4, at 3–4, 12.

95. RIM FIRE RECOVERY EIS, *supra* note 32, at 340.

96. *Id.* at 341.

97. *Id.* at 344.

98. *Id.* at 346, 348.

99. *Id.* at 351.

100. *Id.* at 350–51.

detailed, scientific discussion of why the project is not likely to affect species viability. This is a central issue in the legal complaint filed in response to the project.¹⁰¹ The plaintiffs correctly point out that the Agency does not discuss the effect that loss of occupancy of territories may have on the already declining population of spotted owls in this area of concern, and there is no indication of how small the population can become and still remain viable.¹⁰²

Black-backed woodpeckers are closely associated with burned forests, especially during the first eight years after fire.¹⁰³ These woodpeckers move from burned area to burned area, following their prey: native wood-boring beetles, which rapidly colonize burned areas.¹⁰⁴ Black-backed woodpeckers are able to drill through the very hard wood in the standing dead trees (snags) left after fire.¹⁰⁵ According to the Forest Service's conservation strategy for this species, black-backed woodpeckers are "disproportionately important to their ecosystems" since they are "essentially the only strong excavators capable of penetrating into hard wood."¹⁰⁶ A black-backed woodpecker excavates a new nest cavity every season, and sometimes several, rarely reusing old cavities.¹⁰⁷ A number of birds and other animals rely upon the cavities created by these woodpeckers for nesting, including owls, songbirds, and ducks; mammals such as squirrels, martens, and fishers; and even some reptiles and amphibians.¹⁰⁸ It is not understood how these woodpeckers persist within green forests in the intervals between fires.¹⁰⁹

There is concern that black-backed woodpeckers are in decline in the Sierra Nevada.¹¹⁰ A petition has been filed to list

101. See Ctr. for Biological Diversity Complaint, *supra* note 4, at 3–5, 14.

102. *Id.*

103. RIM FIRE RECOVERY EIS, *supra* note 32, at 415; INST. FOR BIRD POPULATIONS, *supra* note 73, at 1.

104. RIM FIRE RECOVERY EIS, *supra* note 32, at 416; INST. FOR BIRD POPULATIONS, *supra* note 73, at 1.

105. INST. FOR BIRD POPULATIONS, *supra* note 73, at 3–4.

106. *Id.* at 3.

107. *Id.* at 24–25.

108. *Id.* at 3.

109. *Id.* at 5–6, 13–14.

110. RIM FIRE RECOVERY EIS, *supra* note 32, at 413–15; INST. FOR BIRD POPULATIONS, *supra* note 73, at 5–6, 22–23; Earth Island Inst. Complaint, *supra* note

this species under the federal Endangered Species Act, and the U.S. Fish and Wildlife Service has determined, based on the information provided, that listing “may be warranted.”¹¹¹ According to the conservation strategy, “[e]ffective conservation of [b]lack-backed [w]oodpeckers in California requires that recently burned conifer forest, as well as suitable unburned forest, be maintained across the species’ range in the state.”¹¹²

According to the EIS for the Rim Fire project, salvage logging and other treatments will eliminate approximately 55% of suitable black-backed woodpecker habitat in the Rim Fire area within the Stanislaus National Forest.¹¹³ This, in addition to salvage logging on private lands, and hazard tree removal in the burned area of Yosemite National Park, will eliminate nearly one-half (46%) of suitable black-backed woodpecker habitat in the entire Rim Fire area.¹¹⁴ These woodpeckers will not be protected to the same extent as spotted owls. The project does not involve a limited operating period during the woodpecker nesting season.¹¹⁵ There is no commitment to flag and avoid nest trees.¹¹⁶ The Forest Service acknowledges that proposed salvage logging is “expected to contribute cumulatively to effects on black-backed woodpeckers.”¹¹⁷ The Agency argues that the project will not significantly impact these woodpeckers, in part by arguing that the continued existence of this species is not of real concern.¹¹⁸ According to one population assessment, cited in project documents, the species is stable in the Sierra Nevada and throughout its range.¹¹⁹ In addition, the Agency points out

53, at 12, 15, 25.

111. Earth Island Inst. Complaint, *supra* note 53, at 15; RIM FIRE RECOVERY EIS, *supra* note 32, at 414.

112. INST. FOR BIRD POPULATIONS, *supra* note 73, at 8. In addition, “[b]lack-backed woodpeckers will likely benefit most from large patches of burned forest being retained in unharvested condition.” *Id.* at 9.

113. RIM FIRE RECOVERY EIS, *supra* note 32, at 422.

114. *Id.* at 424.

115. *Id.* at 425. The Agency claims that the limited operating periods in place for other species will provide some protections for black-backed woodpeckers. *Id.* at 418–19. See also RIM FIRE RECOVERY ROD, *supra* note 38, at 19–20.

116. See RIM FIRE RECOVERY EIS, *supra* note 32, at 419, 422–24.

117. *Id.* at 424.

118. *Id.* at 414; RIM FIRE RECOVERY ROD, *supra* note 38, at 18–20.

119. RIM FIRE RECOVERY EIS, *supra* note 32, at 414; RIM FIRE RECOVERY ROD,

that the project will not disturb approximately 71% of the Rim Fire burned area within the national forest.¹²⁰ This will leave, according to the Agency, “an abundance of burned-forest habitat” for black-backed woodpeckers.¹²¹ This is not convincing, however, since the Forest Service is targeting for salvage logging the most severely burned areas, and so the most suitable woodpecker habitat.¹²²

A number of rare and endemic plant species in the Rim Fire area have been designated “sensitive plants” by the Forest Service, indicating agency concern over downward population trends.¹²³ The Agency has committed to flag and avoid occurrences of sensitive plants.¹²⁴ According to the project EIS, however, certain sensitive plant species, for example Small’s southern clarkia, cannot be avoided during salvage logging and site preparations for reforestation.¹²⁵ The Agency will minimize project impacts by conducting such operations during the dry, non-growing season, when these species are present as seeds, not growing plants.¹²⁶ Yet herbicide treatments for eliminating noxious weeds, and competing vegetation within plantations, will occur when these species *are* present as growing plants.¹²⁷ The Agency has committed to use herbicides only under conditions that reduce risk of chemical drift, for example, sustained winds must not be in excess of five mph.¹²⁸ Few distance restrictions are indicated, however.¹²⁹ There is no

supra note 38, at 19–20.

120. RIM FIRE RECOVERY ROD, *supra* note 38, at 17–18.

121. *Id.* at 17.

122. See RIM FIRE RECOVERY EIS, *supra* note 32, at 350 (“The only areas proposed for salvage treatments, other than hazard removal, are those that burned at high severity.”); see also INST. FOR BIRD POPULATIONS, *supra* note 73, at 3–6.

123. RIM FIRE RECOVERY EIS, *supra* note 32, at 203–04.

124. *Id.* at 207–09.

125. *Id.*

126. *Id.*; RIM FIRE REFOREST EIS, *supra* note 59, at 161, 164.

127. RIM FIRE REFOREST EIS, *supra* note 59, at 12. According to the reforestation EIS, “[n]oxious weed eradication has the potential to indirectly affect rare plant species through accidental spills, spray drift, surface runoff, or a combination of these factors.” *Id.* at 162.

128. See RIM FIRE REFOREST ROD, *supra* note 40, at 47–48.

129. *Id.* Herbicide applications are prohibited within 20 feet of madrone (*Arbutus menziesii*) trees, saplings, and seedlings, and within 100 feet of elderberry plants (*Sambucus*). *Id.* at 47. No other vegetation distance restrictions are indicated. See *id.* at 44, 47–48.

indication that areas for which herbicide use is approved have been delineated to avoid sensitive plants.¹³⁰ The Agency declares that although the project may affect individual plants, it is not expected to result in loss of viability, or a trend toward federal listing, for any of these species.¹³¹ There is no detailed, scientific discussion, however, of why affected plant species will not suffer loss of viability, with indications of population numbers required for viability. The California Native Plant Society has expressed concern over the impact of agency-sprayed herbicides on sensitive plants in the Sierra Nevada.¹³² There is concern that these plants will be harmed by the drifting chemicals.¹³³

In the Record of Decision for the Rim Fire project, Forest Supervisor Susan Skalski candidly discusses the balance she sought to achieve.¹³⁴ She writes: "Providing a sustainable supply of timber and supporting local economies are always important components of the Forest Service's multiple-use mandate . . ." ¹³⁵ She goes on to explain that the local timber industry does not have the capacity to process the massive amount of salvaged timber the Agency originally proposed.¹³⁶ "I scaled back," she writes, "to a size that would be practical to implement . . ." ¹³⁷ The project is designed, she adds, "to focus salvage logging on those areas that are the most cost-efficient to harvest . . ." ¹³⁸ The volume of timber to be harvested was set at a level that could be harvested and processed cost-effectively, and so locally, within two years, and the Agency selected for harvesting those severely burned areas that could be harvested most cost-effectively.¹³⁹ The proposed project excludes from salvage logging and other treatments approximately 2,500 more burned acres than the project as

130. *See id.* at 19–20, 44, 47–48.

131. RIM FIRE RECOVERY EIS, *supra* note 32, at 208–09; RIM FIRE REFOREST EIS, *supra* note 59, at 165.

132. CAL. NATIVE PLANT SOC'Y, *supra* note 75.

133. *Id.*

134. *See* RIM FIRE RECOVERY ROD, *supra* note 38, at 12–20.

135. *Id.* at 12.

136. *Id.* at 11.

137. *Id.*

138. *Id.* at 12.

139. *Id.* at 10–12.

originally proposed.¹⁴⁰ Skalski points out that the majority (71%) of the Rim Fire area within the national forest is left to recover naturally.¹⁴¹ She claims that the proposed project minimizes impacts to black-backed woodpeckers and other early successional species.¹⁴² Moreover, according to a report issued by the International Union for Conservation of Nature, black-backed woodpeckers are not declining in the Sierra Nevada or in their broader range, but are actually stable.¹⁴³ Skalski notes that, according to forecasts, extreme fires such as the Rim Fire will occur more frequently in this area in the future, leaving less old growth forest, further justifying revegetation of conifers and favoring late successional species.¹⁴⁴ The project “strikes a careful and reasonable balance,” she writes, “between the short-term impacts of management on some species and the long-term conservation of other species.”¹⁴⁵ She adds, this is “the best solution I could find.”¹⁴⁶

It is important to note that, for the Rim Fire project, the Forest Service has adopted more sophisticated reforestation practices for the sake of greater fire resiliency and improved wildlife habitat.¹⁴⁷ For this project, conifers will be planted with composition, spacing, and patterns that more closely mimic natural forests, with varying tree densities in different areas.¹⁴⁸ Some native shrubs and hardwoods will be retained within plantations for the sake of improved wildlife habitat.¹⁴⁹

This is biodiversity conservation, although balanced with the provision of desired levels of timber, outdoor recreation, and other required forest products and services. As discussed, the Forest Service has approved salvage logging and other treatments within spotted owl territories, within 1.5

140. RIM FIRE RECOVERY EIS, *supra* note 32, at xv.

141. RIM FIRE RECOVERY ROD, *supra* note 38, at 17.

142. *Id.* at 16–20.

143. *See id.* at 18; *see also* RIM FIRE RECOVERY EIS, *supra* note 32, at 414.

144. RIM FIRE RECOVERY ROD, *supra* note 38, at 17.

145. *Id.* at 20.

146. *Id.*

147. *See* RIM FIRE REFOREST EIS, *supra* note 59, at 9–11.

148. *Id.*; RIM FIRE REFOREST ROD, *supra* note 40, at 20–21.

149. RIM FIRE REFOREST EIS, *supra* note 59, at 9–11.

kilometers of nests.¹⁵⁰ There is “considerable uncertainty,” the Agency admits, regarding the effects of salvage logging on this species.¹⁵¹ The Agency has committed, however, to flag and avoid nest trees, and to avoid salvage logging and other operations in close proximity to nests (within .25 miles of PAC boundaries) during the nesting season.¹⁵² A higher volume of snags and downed wood will be left behind.¹⁵³ The Agency offers an anecdotal justification for the claim that loss of species viability is not likely.¹⁵⁴ California spotted owls will be protected, but to a limited extent consistent with salvage logging at the desired volume and in locations that offer the most cost-effective harvesting.¹⁵⁵

As acknowledged in project documents, it is extremely difficult to estimate numbers of black-backed woodpeckers.¹⁵⁶ This is due to several factors, including the ephemeral nature of their habitat and their low densities in unburned forests.¹⁵⁷ There is concern that this species is in decline in the Sierra Nevada, and, again, it has been determined that federal listing may be warranted.¹⁵⁸ The Forest Service has excluded 2,500 more burned acres from salvage logging, but the Agency has targeted for logging the most suitable black-backed woodpecker habitat.¹⁵⁹ There will not be a limited operating period to further protect this species.¹⁶⁰ There is no commitment to flag and avoid nest trees.¹⁶¹ The Agency dismisses concerns over the continued viability of this species.¹⁶² The Agency *has* committed to flagging and avoiding

150. RIM FIRE RECOVERY EIS, *supra* note 32, at 346–49.

151. *Id.* at 344.

152. *Id.* at 346, 348.

153. *Id.*

154. *Id.* at 350–51.

155. *See* RIM FIRE RECOVERY ROD, *supra* note 38, at 11–12.

156. RIM FIRE RECOVERY EIS, *supra* note 32, at 414.

157. *Id.*; *see also* INST. FOR BIRD POPULATIONS, *supra* note 73, at 22.

158. RIM FIRE RECOVERY EIS, *supra* note 32, at 414; INST. FOR BIRD POPULATIONS, *supra* note 73, at 5; Earth Island Inst. Complaint, *supra* note 53, at 15.

159. *See* RIM FIRE RECOVERY EIS, *supra* note 32, at 350; INST. FOR BIRD POPULATIONS, *supra* note 73, at 3–6.

160. RIM FIRE RECOVERY EIS, *supra* note 32, at 418–19, 425; RIM FIRE RECOVERY ROD, *supra* note 38, at 19–20.

161. RIM FIRE RECOVERY EIS, *supra* note 32, at 419, 422–24.

162. RIM FIRE RECOVERY ROD, *supra* note 38, at 18–20.

sensitive plants during salvage logging and site preparations for reforestation, but some sensitive plant species cannot be avoided.¹⁶³ Salvage logging and other operations will be conducted when these species are present only as seeds, not growing plants.¹⁶⁴ Yet herbicides will be used when these species *are* present as growing plants, and though efforts will be made to avoid chemical drift, few distance restrictions are indicated.¹⁶⁵ An anecdotal justification is provided for the claim that the project is not expected to result in loss of viability of sensitive plant species.¹⁶⁶

Federal regulations and agency policy mandate maintaining at least viable populations of existing native plant and animal species on national forest lands.¹⁶⁷ It is debatable whether the Agency meets this standard. In legal complaints, the Center for Biological Diversity and other organizations persuasively argue that the Forest Service has failed to meet this standard for salvage logging projects in the Sierra Nevada.¹⁶⁸ Yet the Agency practices biodiversity conservation in an important sense.

IV. MULTIPLE-USE BIODIVERSITY CONSERVATION

As the Rim Fire project illustrates, in the national forests the levels of protection provided native species are adjusted to achieve a balance with the provision of desired levels of timber, grazing range, outdoor recreation, and other required forest products and services. This is multiple-use biodiversity conservation. To be sure, resource provision is also adjusted to some extent for the sake of protecting native species. As an example, for the Rim Fire project, after salvage logging conifers will be planted in such a way as to enhance wildlife habitat—with wider spacing of trees and some retention of native shrubs and hardwoods—although there may be some

163. RIM FIRE RECOVERY EIS, *supra* note 32, at 207–09.

164. *Id.*

165. See RIM FIRE REFOREST EIS, *supra* note 59, at 12, 44, 47–48.

166. RIM FIRE RECOVERY EIS, *supra* note 32, at 208–09.

167. See 36 C.F.R. § 219.9(b)(1) (2017); FOREST SERV., U.S. DEPT OF AGRIC., *supra* note 3, at 4.

168. Ctr. for Biological Diversity Complaint, *supra* note 4, at 4–5, 14; Earth Island Inst. Complaint, *supra* note 53, at 20, 22–23.

loss of timber production.¹⁶⁹ The Forest Service seeks to achieve a balance of species protections and resource provision that is appropriate for each national forest and each management area, given the inherent capability of each area and the perceived needs of American citizens.¹⁷⁰

This approach to biodiversity conservation is not made explicit in project documents, but it is clearly assumed. Within the Rim Fire EIS, for example, the Forest Service responds to critics who express concern that the Agency is not following recommendations within its own conservation strategy for black-backed woodpeckers.¹⁷¹ According to this document, “[e]ffective conservation of [b]lack-backed [w]oodpeckers in California requires that recently burned conifer forest . . . be maintained across the species’ range in the state.”¹⁷² The Agency responds to critics in this way:

The [Forest Service] has to balance multiple priorities, objectives, uses, and species in its activities as a multiple use agency. And, at times, certain management objectives are in tension, if not in direct conflict, with one another. For example, through this Project, the Forest seeks to reduce fire hazard by removing burned trees. Yet the Forest also wishes to conserve burned forest habitat for the black-backed woodpecker and other species. The Forest has tried to strike a reasonable balance between these two goals at the landscape level, realizing it is not possible to fully achieve both of these goals on each and every acre.¹⁷³

According to this passage, the Agency must balance conservation of black-backed woodpeckers, and other early successional species, with various other management objectives, including reducing the fire hazard, and (left unstated here) providing burned timber for salvage logging at

169. RIM FIRE RECOVERY EIS, *supra* note 32, at 9–11.

170. *See, e.g.*, RIM FIRE RECOVERY ROD, *supra* note 38, at 11–20.

171. RIM FIRE RECOVERY EIS, *supra* note 32, at 418.

172. INST. FOR BIRD POPULATIONS, *supra* note 73, at 8.

173. RIM FIRE RECOVERY EIS, *supra* note 32, at 418.

a level considered appropriate for sustaining the local economy.

In 2008, the U.S. Department of Agriculture issued an updated regulation USDA 9500-4 that superseded the 1983 regulation, and which does not mandate, as did the earlier regulation, maintaining viable populations of existing native plant, fish, and wildlife species.¹⁷⁴ The more recent regulation states:

A goal of the Department is to improve, where needed, fish and wildlife habitats, and to ensure the presence of diverse, native and desired nonnative populations of wildlife, fish, and plant species, while fully considering other Department missions, resources, and services. . . . When compatible with use objectives for the area, management alternatives which improve habitat will be selected.¹⁷⁵

Managers are to “ensure the presence” of diverse native wildlife, fish, and plant species, “while fully considering other Department missions, resources and services.”¹⁷⁶ In this regulation, the Department accepts responsibility for maintaining merely *a diversity* of native plant and animal species on national forest lands, subject to the need to fulfill other objectives. There is no commitment here to maintain the natural or historic diversity of plant and animal species.¹⁷⁷

Under the 2012 Planning Rule, the conservation of native biodiversity must fit properly into the provision of desired levels of timber, grazing range, outdoor recreation, and other required forest products and services. The levels of protection provided native species are to be adjusted to achieve “integrated resource management”—an appropriate balance of ecological, social, and economic factors.¹⁷⁸ As is the case with

174. U.S. DEPT OF AGRIC., DEPARTMENTAL REGULATION 9500-4 (2008).

175. *Id.* at 2.

176. *Id.*

177. “Natural” is appropriately understood as generally free of human influence. Within its management policies, the National Park Service similarly understands “natural” as “minimally influenced by human actions.” See NAT'L PARK SERV., U.S. DEPT OF THE INTERIOR, *supra* note 34, at 36.

178. See 36 C.F.R. § 219.10 (2017).

USDA 9500-4 (2008), there is no mandate within the 2012 rule to maintain viable populations of existing native plant and animal species within a national forest.¹⁷⁹ The need to balance species protections with fulfilling other agency obligations is clearly assumed within Rim Fire project documents. For this project, the declared purpose is to maintain forests “rich in biodiversity,” rather than viable populations of existing native plants and animals.¹⁸⁰

V. “THERE ARE MANY GREAT INTERESTS ON THE NATIONAL FORESTS”

The Multiple-Use Sustained-Yield Act of 1960 (MUSYA) requires the Forest Service to manage “the several products and services obtained” from the national forests for multiple use and sustained yield.¹⁸¹ Specifically, the Agency is directed to manage for the utilization of timber, watershed, grazing range, outdoor recreation, and wildlife and fish in a combination appropriate for each management area, taking into account the inherent capability of the area and the needs of the American people.¹⁸² Indeed, “multiple use” is defined within MUSYA as:

The management of all the various renewable surface resources . . . so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services¹⁸³

179. *Id.* § 219.9. The 2012 Planning Rule will be discussed in more detail in Sections VI and VII.

180. RIM FIRE REFOREST EIS, *supra* note 59, at 7.

181. 16 U.S.C. § 529 (2012).

182. *Id.* §§ 528–529, 531. MUSYA does not actually refer to a management area. “Management area” is a term from the later National Forest Management Act regulations (planning rules). *See* 36 C.F.R. § 219.7(d) (2017). MUSYA refers to “areas,” described as “large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions.” 16 U.S.C. § 531 (2012).

183. *Id.* § 531(a).

According to MUSYA, not all forest resources are likely to be available and suitable for use in a given area.¹⁸⁴ The Act states: “In the administration of the national forests due consideration shall be given to the relative values of the various resources in particular areas.”¹⁸⁵

The National Forest Management Act of 1976 (NFMA) builds on this, requiring that each national forest develop a land and resource management plan, and that each management plan include a set of objectives that “provide for multiple use and sustained yield of the products and services obtained,” in accordance with MUSYA.¹⁸⁶ NFMA specifies, in more detail, what is to be included within these “multiple-use objectives”:

In developing, maintaining, and revising plans for units of the National Forest System pursuant to this section, the Secretary shall assure that such plans . . . in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness . . .¹⁸⁷

The multiple-use objectives are to provide a “coordination” of timber, grazing range, watershed, outdoor recreation, and other required forest products and services.¹⁸⁸ Use of the word “coordination” indicates that these objectives are to identify the products and services the Agency is to provide within a given management area, and they must specify how the provision of each is to be adjusted to achieve an appropriate

184. *Id.*

185. *Id.* § 529.

186. 16 U.S.C. § 1604(e)(1) (2012). Tuholske and Brennan write: “MUSY[A] remains on the books, though it is largely a statutory anachronism, supplanted by the more explicit and detailed dictates of NFMA.” Tuholske & Brennan, *supra* note 11, at 60. It is more correct to say, however, that NFMA rests on, rather than supplants, MUSYA. The preamble published with the 2012 Planning Rule often refers to MUSYA in discussions of the Forest Service’s legal authority, indicating the importance of MUSYA as a foundation of national forest management. The preamble states: “The Department acknowledges and applies MUSYA throughout the final rule.” Preamble 2012 Rule, *supra* note 20, at 21,220; *see also id.* at 21,163–64, 21,184–85, 21,187, 21,190, 21,211, 21,216, 21,219–21, 21,224.

187. 16 U.S.C. § 1604(e) (2012).

188. *Id.*

balance for that area. In accordance with MUSYA, such coordination is to be based on the inherent capability of the given area and the needs of American citizens.¹⁸⁹

NFMA adds wilderness to the list of products and services that must be provided within the national forests. In the list of required products and services, “watershed” refers to the various services forest watersheds provide, such as water flow regulation, water purification, and erosion control.¹⁹⁰

There are a number of constraints that must be considered, however, as managers seek an appropriate balance of forest products and services for a given management area.¹⁹¹ Such constraints are provided by a number of federal laws, including the Endangered Species Act of 1973 (ESA).¹⁹² The ESA reflects concern within our society for the preservation of native species determined to be close to extinction. The Act states:

[S]pecies of fish, wildlife, and plants have been so depleted in numbers that they are in danger of or threatened with extinction [T]he United States has pledged itself as a sovereign state in the international community to conserve to the extent practicable the various species of fish or wildlife and plants facing extinction¹⁹³

The purposes of this chapter are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species¹⁹⁴

189. See 16 U.S.C. § 531(a) (2012).

190. See *Watershed Services*, FOREST SERV., U.S. DEP'T OF AGRIC., <https://www.fs.fed.us/ecosystemservices/watershed.shtml> [https://perma.cc/A5ZD-RCEB] (last visited Jan. 18, 2018).

191. Within the 1982 Planning Rule, a “management area” consists of lands lying within a national forest that are managed under the same management prescription. These lands need not be contiguous. See 36 C.F.R. § 219.11(c) (2000). Within the 2012 rule, a “management area” is understood similarly, but these lands are managed under the same management plan components. See 36 C.F.R. § 219.19 (2017).

192. 16 U.S.C. §§ 1531–1544 (2012).

193. *Id.* § 1531(a).

194. *Id.* § 1531(b).

Our concern within society, and the legislation this concern has motivated, places constraints upon the provision of forest products and services within the national forests, restricting timber harvesting within old growth forests in the Pacific Northwest, for example, which provide critical habitat for the federally endangered northern spotted owl (*Strix occidentalis caurina*).¹⁹⁵

As the Forest Service seeks to determine the appropriate coordination of forest products and services that will be provided in each management area, it is engaged in a broader balancing. Some authors classify conservation as a *use* of the forest, along with timber production, outdoor recreation, and livestock grazing.¹⁹⁶ It is perhaps more intuitive, however, to consider the conservation of federally listed species, and other conservation efforts, as constraints on permitted uses of the forest, rather than as uses in themselves.¹⁹⁷ In its planning, the Forest Service is concerned with the provision of an appropriate combination of forest products and services in each management area—as required by MUSYA—and, correspondingly, with properly balancing various forest uses in each area, including timber production, livestock grazing, and outdoor recreation. But beyond the balancing of required forest goods and services, and the various uses, there is a broader balancing in which conservation constrains resource provision and forest uses, and this broader balancing is most

195. See, e.g., *Northern Spotted Owl*, OR. FISH & WILDLIFE OFFICE, U.S. FISH & WILDLIFE SERV., <https://www.fws.gov/oregonfwo/articles.cfm?id=149489595> [<https://perma.cc/U9Y3-F9NB>] (last visited Jan. 18, 2018); Sarah Gilman, *Evidence of Absence: Northern Spotted Owls Are Still Vanishing from the Northwest*, THE CORNELL LAB: ALL ABOUT BIRDS (Apr. 12, 2016), <https://www.allaboutbirds.org/evidence-of-absence-northern-spotted-owls-are-still-vanishing-from-the-northwest/> [<https://perma.cc/BXG7-BATS>].

196. See, e.g., *National Park or National Forest?*, NAT'L PARK SERV., U.S. DEP'T OF THE INTERIOR, <https://www.nps.gov/grsm/planyourvisit/np-versus-nf.htm> [<https://perma.cc/W637-9EJH>] (last updated Aug. 6, 2015) (“National forests, on the other hand, emphasize not only resource preservation, but other kinds of use as well.”).

197. Carl Safina writes, insightfully: “Conservation is not a use. It is a restraint that facilitates many kinds of uses in perpetuity.” *Poll: Should Conservation Be Considered as a Use of the Marine Environment?*, MARINE ECOSYSTEMS & MGMT. (Aug. 25, 2009), <https://meam.openchannels.org/news/meam/poll-should-conservation-be-considered-use-marine-environment> [<https://perma.cc/2EVR-T93G>]. On the other hand, some scholars accept conservation as the most fundamental use. *Id.*

appropriately described in terms used by Gifford Pinchot, the first Chief of the U.S. Forest Service.

Pinchot's views on national forest management continue to be highly influential within the Forest Service.¹⁹⁸ In his 1907 book, *The Use of the National Forests*, Pinchot discusses acceptable uses of national forest lands, including timber production, prospecting, mining, livestock grazing, and uses of water flows.¹⁹⁹ Pinchot adopts a highly utilitarian perspective, emphasizing that all forest resources are to be used for the benefit of American society.²⁰⁰ He writes:

Taking it altogether, then, it will be seen that a National Forest does not act like a wall built around the public domain, which locks up its lands and resources and stops settlement and industry. What it really does is to take the public domain, with all its resources and most of its laws, and make sure that the best possible use is made of every bit of it. And more than this, it makes these vast mountain regions a great deal more valuable, and *keeps* them a great deal more valuable, simply by using them in a careful way, with a little thought about the future. . . .

National Forests are for use by all the people. Their resources are now used in such a common-sense way that instead of being *used up* they *keep coming*. They are for present use, for use a few years ahead, and for use a long time ahead.²⁰¹

According to Pinchot, forest resources are protected within the national forests for the purpose of making them available

198. See, e.g., Robert Westover, *Forest Service Celebrates 150th Birthday of Founder*, FOREST SERV., U.S. DEP'T OF AGRIC. (Aug. 11, 2015), <https://www.fs.fed.us/blogs/forest-service-celebrates-150th-birthday-founder> [<https://perma.cc/9BW2-QTZX>] (“With Pinchot’s acumen for business, and his knowledge of proper conservation practices, today the Forest Service continues to fulfill his dream in conservation which he aptly said was doing “The greatest good for the greatest number in the long run.””).

199. See generally GIFFORD PINCHOT, *THE USE OF THE NATIONAL FORESTS* (1907).

200. See *id.* at 15, 25–26.

201. *Id.* at 15.

for responsible use by the American public.²⁰² Within the national forests, forest resources are used in a careful and common sense way, he writes, so they are sustainable (as we express this nowadays).²⁰³ They “keep coming,” Pinchot writes, and last for “a long time ahead.”²⁰⁴

In his book, Pinchot writes that the “[n]ational forests are made for and owned by the people.”²⁰⁵ “[T]he people must know all about them,” he continues, “and must take a very active part in their management.”²⁰⁶ “What the people as a whole want will be done.”²⁰⁷ Pinchot adds this comment: “There are many great interests on the National Forests which sometimes conflict a little. They must all be made to fit into one another so that the machine runs smoothly as a whole.”²⁰⁸ By “interests,” he has in mind whatever in the national forest is of benefit or advantage to someone, or whatever is of concern.²⁰⁹

There are indeed many great interests on the national forests. These are conceived in abstraction from exact geographical locations, acreages, volumes, and other parameters that are to be determined during the planning process. Such interests include mature forests subject to timber harvesting, old growth forests protected as wildlife habitat, burned forests subject to salvage logging, rangelands set aside for livestock grazing, lands protected as wilderness, rivers and streams dammed for agricultural and other uses, free-flowing rivers protected for their outstanding scenic or recreational values, trails designated for off-highway vehicles, trails protected for their significant scenic, natural, and historic qualities, etc. These and other interests “sometimes conflict a little,” Pinchot writes.²¹⁰ According to Pinchot,

202. *See id.*

203. *See id.*

204. *Id.*

205. *Id.* at 25.

206. *Id.*

207. *Id.*

208. *Id.*

209. *See, e.g., Interest*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/interest> [<https://perma.cc/6BZW-QTY7>] (last updated Jan. 6, 2018); *Interest*, CAMBRIDGE DICTIONARIES ONLINE, <http://dictionary.cambridge.org/us/dictionary/english/interest> [<https://perma.cc/93GS-9MQR>] (last visited Jan. 18, 2018).

210. PINCHOT, *supra* note 199, at 25.

national forest management involves fitting the various interests in the forest together, so “the machine runs smoothly as a whole.”²¹¹ As Pinchot indicates, compromise is often required. Managers must adjust locations and acreages, as well as the types and levels of provision and conservation. “It is often necessary,” Pinchot writes, “for one man to give way a little here, another a little there.”²¹² He adds: “There must be hearty cooperation from everyone.”²¹³

As agency managers seek an appropriate coordination of forest products and services—timber, grazing range, outdoor recreation, fish and wildlife, etc.—for each management area, and, correspondingly, a proper balance of uses, they are engaged in a broader balancing. Following Pinchot’s philosophy of national forest management, this is a balancing of the many diverse interests in the national forest, which reflect the many and various concerns of forest users and, more generally, the American public, including the timber industry, livestock grazers, the ski industry, hunters, backpackers, environmentalists, river rafting enthusiasts, and others. These many interests, which often conflict, must be made to fit into one another, as Pinchot writes.²¹⁴ This is, of course, the huge challenge of national forest management. In this balancing of interests, the Agency must consider the inherent capability of a given area, including (as specified by the 2012 Planning Rule) the dominant ecological processes, natural disturbance regimes, and the projected impacts of climate change.²¹⁵ In this balancing, the Agency seeks to most effectively benefit society as a whole. Pinchot writes: “The officers [of the Forest Service] are paid by the people to act as their agents and to see that all the resources of the Forests are used in the best interest of everyone concerned.”²¹⁶ Moving beyond narrow concerns with the use of forest resources, we can say that the test for a proper balance of interests is that the national forest contributes most effectively to the good of American society. This well reflects Pinchot’s views.

211. *Id.*

212. *Id.*

213. *Id.*

214. *See id.*

215. 36 C.F.R. § 219.10(a)(8) (2017).

216. PINCHOT, *supra* note 199, at 25.

There is increasing concern within our society for the conservation of native biodiversity on public lands. This concern is expressed within the ESA, and has found its way into NFMA.²¹⁷ The conservation of native biodiversity enters into the Agency's balancing of the many diverse interests in a national forest, and constrains to some extent the provision of timber and other required forest products and services. Reflecting the management philosophy of Pinchot, in this broader balancing compromise is expected on all sides.²¹⁸ No interest is considered absolute or sacrosanct. As in the Rim Fire project, the Forest Service may compromise on the volume of burned timber offered in a salvage logging sale, and in the composition and spacing of planted trees within a conifer plantation.²¹⁹ On the other hand, compromises in species protections are typical and expected. The levels of protection provided native species are adjusted to fit the overall balance of interests the Agency seeks to achieve. Even federally listed threatened and endangered species, and species designated as sensitive by the Forest Service (for example, the California spotted owl), though protected to some extent, are placed at greater risk.²²⁰

The balance of interests the Forest Service seeks to maintain in the Sierra Nevada is not supported by ecological considerations. As mentioned, salvage logging has been criticized for its interference in natural forest succession.²²¹ David Lindenmayer and other experts in forest management write: "The notion that salvage logging assists the ecological recovery of naturally disturbed forests is fundamentally incorrect."²²² "There is abundant theoretical and empirical evidence," they add, "that salvage logging interferes with natural ecological recovery . . ."²²³ In the Rim Fire project EIS, the Forest Service acknowledges that "few short-term positive

217. 16 U.S.C. § 1531 (2012); *id.* § 1604(g)(3)(B).

218. See PINCHOT, *supra* note 199, at 25.

219. See RIM FIRE RECOVERY ROD, *supra* note 38, at 11–12; RIM FIRE REFOREST EIS, *supra* note 59, at 9–11.

220. See, e.g., RIM FIRE RECOVERY EIS, *supra* note 32, at 204–10, 338–51.

221. See, e.g., Parker, *supra* note 48, at 2–4.

222. DAVID LINDENMAYER ET AL., SALVAGE LOGGING AND ITS ECOLOGICAL CONSEQUENCES 12 (2008).

223. *Id.* at 13.

ecological effects and many potential negative effects have been associated with post-fire logging.”²²⁴

Concerning the supposed greater resilience to fire conferred by salvage logging, the Agency admits, “there is considerable uncertainty with how salvage logging influences future fire.”²²⁵ In her comments on the Rim Fire project, Skalski writes: “I acknowledge that much debate and uncertainty remains regarding the efficacy of salvage logging to reduce fire hazard.”²²⁶ According to Lindenmayer and others, “little or no empirical data” currently support the idea that salvage logging confers greater resilience against future fire or other disturbances.²²⁷

Conifer plantations are also heavily criticized. Forest management experts Susan Moore and H. Lee Allen write: “Plantation management is a dominant and growing form of intensive management.”²²⁸ They add: “Many studies show[] that intensive forestry greatly alters the habitat for all biota, eliminating some key habitat components. Clearly, this will reduce biological diversity”²²⁹ Lindenmayer and others state: “Areas subject to salvage logging and the subsequent establishment of coniferous tree plantations have much lower levels of biodiversity than sites that were exempt from salvage logging and subsequent planting.”²³⁰ Finally, forest management experts Robert Seymour and Malcolm Hunter write: “High timber yields demand close control and simplification of naturally diverse plant communities, and thus conflict inherently with promoting stand-level biodiversity.”²³¹ They ask: “Is there some sort of hybrid silviculture that

224. RIM FIRE RECOVERY EIS, *supra* note 32, at 342.

225. *Id.*

226. RIM FIRE RECOVERY ROD, *supra* note 38, at 14.

227. LINDENMAYER ET AL., *supra* note 222, at 157.

228. Susan E. Moore & H. Lee Allen, *Plantation Forestry*, in MAINTAINING BIODIVERSITY IN FOREST ECOSYSTEMS 400, 400 (Malcolm L. Hunter Jr. ed., 1999).

229. *Id.* at 421.

230. LINDENMAYER ET AL., *supra* note 222, at 125. According to these authors, in Yellowstone National Park, “abundant and widespread tree and native plant regeneration occurred” after the famous, huge fire of 1988. *Id.* at 88. “This happened,” they write, “in the absence of any human-facilitated ‘restoration’ programs that often follow disturbances and/or salvage logging” *Id.*

231. Robert Seymour & Malcolm Hunter, *Principles of Ecological Forestry*, in MAINTAINING BIODIVERSITY IN FOREST ECOSYSTEMS, *supra* note 228, at 27.

achieves both high timber output and high levels of diversity?” and they add, “there is reason to be skeptical.”²³² These authors write, “the more an ecosystem is simplified through production silvicultural practices, the more likely we are to lose some elements of biodiversity that depend on its natural complexity.”²³³

The balance of interests the Forest Service seeks to achieve in the Sierra Nevada is not supported by ecological considerations or, arguably, claims of greater fire resiliency. According to critics, the Agency’s motivation is largely economic and self-serving: the Agency seeks to inflate its own budgets.²³⁴ Again, the Forest Service is allowed to keep the profits generated by salvage logging on national forest lands.²³⁵ These revenues are used to help finance future projects, including tree-planting projects, which are reportedly quite expensive.²³⁶ There may be some truth to this, but it is probably more accurate to attribute to the Agency a deeper and nobler motivation. The desired balance of interests is supported, fundamentally, by the Agency’s understanding of how Sierra Nevada national forests most effectively contribute to the good of American society. In the Record of Decision for the Rim Fire project, Forest Supervisor Skalski notes that the local timber industry expressed interest in harvesting and processing the volume of burned timber finally proposed for salvaging.²³⁷ Skalski notes the benefits this will bring to the local economy.²³⁸ She discusses the effort to minimize project impacts on black-backed woodpeckers and other early-successional species, noting concerns expressed by the environmental community.²³⁹ She stresses that her decision involved a careful balancing.²⁴⁰ The Rim Fire project represents an attempt to properly balance the many diverse interests in this national forest so that the forest contributes

232. *Id.* at 55.

233. *Id.*

234. See Earth Island Inst. Complaint, *supra* note 53, at 2, 11–12.

235. See *id.*

236. See Holst, *supra* note 52.

237. RIM FIRE RECOVERY ROD, *supra* note 38, at 11–12.

238. See *id.*

239. See *id.* at 16–20.

240. See *id.* at 20.

most effectively to the good of American society. This is traditional agency practice, as recommended by Pinchot long ago.²⁴¹

VI. THE 2012 PLANNING RULE

The 2012 Planning Rule governs the development and revision of land and resource management plans.²⁴² National forests throughout the country are currently in the process of revising their management plans under this rule.²⁴³ The 2012 rule grants the Agency high levels of discretion and management flexibility, dropping the 1982 rule's mandate to maintain viable populations of existing native fish and wildlife (vertebrate) species.²⁴⁴ The new rule codifies or formalizes agency practices that have been in place for many years, even as the forests were nominally managed under the 1982 rule.²⁴⁵

The 2012 rule requires that each management plan include a set of "plan components," and the rule specifies the general content of these components.²⁴⁶ They must include descriptions of the desired conditions in the national forest (the "plan area"), the objectives ("concise, measurable, and time-specific") to be met as managers seek to achieve the desired conditions, and the standards or guidelines to be applied in efforts to meet the objectives and achieve the desired conditions.²⁴⁷ Plan components must meet more specific content requirements set forth within the rule, including a requirement to provide for the diversity of plant and animal communities.²⁴⁸

241. See PINCHOT, *supra* note 199, at 25–26.

242. 36 C.F.R. § 219.1 (2017); Preamble 2012 Rule, *supra* note 20, at 21,162.

243. See HABER, *supra* note 5, at 3–4; see also FOREST SERV., U.S. DEPT OF AGRIC., *supra* note 5.

244. 36 C.F.R. § 219.9 (2017); Preamble 2012 Rule, *supra* note 20, at 21,212–13, 21,216.

245. See HABER, *supra* note 5, at 4; Schultz et al., *supra* note 6, at 442.

246. 36 C.F.R. § 219.7(e) (2017).

247. *Id.* § 219.7(e)(i)–(iv).

248. Section 219.9 of the 2012 Planning Rule states, in part: "The plan must provide for the diversity of plant and animal communities, within Forest Service authority and consistent with the inherent capability of the plan area, as follows: (a) *Ecosystem plan components*. (1) *Ecosystem integrity*. As required by § 219.8(a), the plan must include plan components, including standards or guidelines, to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area, including plan components to maintain or restore their structure, function, composition, and connectivity. (2) *Ecosystem diversity*. The plan must include plan

The 2012 rule mandates the “coarse-filter” and, if necessary, the “fine-filter” approach to biodiversity conservation.²⁴⁹ According to the rule, plan components, with appropriate standards or guidelines, must provide for maintaining or restoring the ecological integrity of ecosystems and watersheds throughout the national forest.²⁵⁰ “Ecological integrity” is understood in terms of a system’s historic conditions.²⁵¹ The idea is to maintain or restore an ecosystem or watershed so that it falls within the historic range of variation (“natural range of variation”) for that system.²⁵² In addition, plan components, with appropriate standards or guidelines, must provide for maintaining or restoring “the diversity” of ecosystems and habitat types throughout the forest.²⁵³ This represents the ecosystem or “coarse-filter” approach.²⁵⁴ As noted in the rule’s preamble, the intent behind the coarse-filter approach is to maintain at least viable populations of most native species.²⁵⁵ Under the 2012 rule, the coarse-filter components are to include components, with appropriate standards or guidelines, that provide for maintaining or

components, including standards or guidelines, to maintain or restore the diversity of ecosystems and habitat types throughout the plan area. In doing so, the plan must include plan components to maintain or restore: (i) Key characteristics associated with terrestrial and aquatic ecosystem types; (ii) Rare aquatic and terrestrial plant and animal communities; and (iii) The diversity of native tree species similar to that existing in the plan area. (b) *Additional, species-specific plan components.* (1) The responsible official shall determine whether or not the plan components required by paragraph (a) of this section provide the ecological conditions necessary to: contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern within the plan area. If the responsible official determines that the plan components required in paragraph (a) are insufficient to provide such ecological conditions, then additional, species-specific plan components, including standards or guidelines, must be included in the plan to provide such ecological conditions in the plan area.” *Id.* § 219.9(a)–(b).

249. See Preamble 2012 Rule, *supra* note 20, at 21,212.

250. 36 C.F.R. § 219.9(a) (2017).

251. *Id.* “Ecological integrity” is defined within the rule as “the quality or condition of an ecosystem when its dominant ecological characteristics (for example, composition, structure, function . . .) occur within the natural range of variation and can withstand and recover from most perturbations imposed by natural environmental dynamics or human influence.” *Id.* § 219.19.

252. *Id.*

253. *Id.* § 219.9.

254. Preamble 2012 Rule, *supra* note 20, at 21,212.

255. *Id.* at 21,175, 21,212.

restoring rare plant and animal communities, and for maintaining or restoring a diversity of tree species similar to the diversity that exists naturally in the national forest.²⁵⁶

According to the rule, the responsible official is to determine whether the coarse-filter components provide the ecological conditions necessary to contribute to the recovery of federally listed threatened and endangered species, conserve species that have been proposed or are candidates for federal listing, and maintain viable populations of species of conservation concern.²⁵⁷ If it is determined that the coarse-filter components do not adequately provide such conditions, the management plan must include additional plan components, with appropriate standards or guidelines, that provide such conditions.²⁵⁸ This is the species-specific or “fine-filter” approach.²⁵⁹

The 2012 rule continues in this way:

If the responsible official determines that it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of a species of conservation concern in the plan area, then the responsible official shall:

- (i) Document the basis for that determination; and
- (ii) Include plan components, including standards or guidelines, to maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.²⁶⁰

If the responsible official determines that maintaining a viable population of a species of conservation concern within the national forest is “beyond the authority of the Forest Service or not within the inherent capability of the plan area,”

256. 36 C.F.R. § 219.9(a)(2) (2017).

257. *Id.* § 219.9(b)(1).

258. *Id.*

259. Preamble 2012 Rule, *supra* note 20, at 21,212.

260. 36 C.F.R. § 219.9(b)(2) (2017).

plan components, with appropriate standards or guidelines, must provide for maintaining or restoring ecological conditions to contribute to maintaining population viability within the species' range.²⁶¹ According to the rule's preamble, this is a major difficulty with the 1982 Planning Rule's viable populations mandate, and a primary reason why the rule must be replaced.²⁶² The 1982 regulations "do not recognize that there are limitations on the Agency's authority and the inherent capability of the land."²⁶³ The preamble continues: "[T]he Agency must comply with all applicable laws and regulations."²⁶⁴

An example of a possible limitation on the Agency's authority, described within the preamble, is when maintaining a viable population of a species of conservation concern would jeopardize a federally listed threatened or endangered species.²⁶⁵ Another example (more important for our discussion) is:

[W]hen maintaining the habitat conditions necessary for a viable population of one species would consume the resources available . . . to the point of precluding other activities from occurring . . . that are necessary to comply with independent statutory or regulatory requirements.²⁶⁶

No detailed example or further explanation is offered. The preamble also states, however:

Restoration activities will produce jobs and income; at the same time; restored, functioning ecosystems can support species diversity while allowing multiple uses to continue. . . . [P]lans must contribute to economic and social sustainability and must provide for ecosystem services and multiple uses in the plan area. Responsible

261. *Id.*

262. Preamble 2012 Rule, *supra* note 20, at 21,169.

263. *Id.*

264. *Id.*

265. *Id.*

266. *Id.*

officials will use an integrated resource management approach to provide for multiple uses and ecosystem services in the plan area, considering a full range of resources, uses, and benefits relevant to the unit²⁶⁷

According to a different section of the 2012 Planning Rule, plan components must provide for the national forest's "contribution to social and economic sustainability, taking into account . . . [s]ocial, cultural, and economic conditions relevant to the area influenced by the plan" ²⁶⁸ In a later section, the rule mandates "integrated resource management."²⁶⁹ Under this mandate, plan components must provide for ecosystem services and multiple uses based on the need for "integrated consideration of ecological, social, and economic factors."²⁷⁰ The rule provides a long list of factors that are to be considered in the development of plan components under integrated resource management, including aesthetics, ecosystem services, habitat and habitat connectivity, water quality, soils, fish and wildlife species, timber, grazing lands, etc.²⁷¹ Consideration must be given, according to the rule, to "[r]easonably foreseeable risks to ecological, social, and economic sustainability."²⁷²

Under the 2012 rule, then, the Forest Service is constrained in its conservation efforts by mandates to engage in integrated resource management and contribute to social and economic sustainability.²⁷³ The Agency may not seek to maintain a viable population of a species of conservation concern within a national forest when to do so would impair its ability to provide timber, grazing range, outdoor recreation, and other required products and services at levels determined to be necessary to contribute to social and economic sustainability, taking into account local social, cultural, and economic conditions. In such a situation, maintaining a viable

²⁶⁷ *Id.* at 21,177.

²⁶⁸ 36 C.F.R. § 219.8(b) (2017).

²⁶⁹ *Id.* § 219.10(a).

²⁷⁰ This is taken from the definition of "integrated resource management." *Id.* § 219.19.

²⁷¹ *Id.* § 219.10(a)(1).

²⁷² *Id.* § 219.10(a)(7).

²⁷³ *Id.* §§ 219.8(b), 219.10(a).

population within the forest would be “beyond the authority of the Forest Service”²⁷⁴—specifically, it would be in violation of integrated resource management and sustainability regulations within the 2012 Planning Rule.²⁷⁵ The rule requires, furthermore, that in the development of plan components under integrated resource management, the responsible official also take into account “[m]ultiple uses that contribute to local, regional, and national economies in a sustainable manner.”²⁷⁶ Under this rule, the responsible official must also take into consideration any sustainable contribution the national forest makes to the regional or national economies.

The 2012 Planning Rule’s mandate to maintain viable populations of species of conservation concern is qualified, then, in two ways. First, the rule gives the Regional Forester sole discretion in the designation of these species.²⁷⁷ According to the rule, “species of conservation concern” must be present within the national forest, and may not include species that have been federally listed, or have been proposed or are candidates for listing.²⁷⁸ The rule goes on to define “species of conservation concern” as those species “for which the [R]egional [F]orester has determined that the best available scientific information indicates substantial concern about the species’ capability to persist over the long-term in the plan area.”²⁷⁹ The rule’s preamble indicates categories of at-risk species that the Regional Forester may use as a guide in designating species of conservation concern, including Forest Service sensitive species and species designated as threatened or endangered under state law.²⁸⁰ But whether or not a species is designated as a species of conservation concern is left ultimately to the Regional Forester’s judgment concerning what the best available science indicates.

Second, if it is determined that conserving a viable population of a species of conservation concern is not within

274. *Id.* § 219.9(b)(2).

275. *Id.* §§ 219.8, 219.10.

276. *Id.* § 219.8(b)(3).

277. *Id.* § 219.9(c).

278. *Id.*

279. *Id.*

280. Preamble 2012 Rule, *supra* note 20, at 21,216, 21,218.

the inherent capability of the national forest, or is beyond the Agency's authority given applicable laws and regulations, including the 2012 Planning Rule, plan components must provide for maintaining or restoring conditions to contribute to the viability of the species within its range.²⁸¹ This represents, according to Courtney Schultz and other experts in wildlife management and policy, a "much lower conservation standard."²⁸² According to the rule: "[T]he responsible official shall coordinate *to the extent practicable* with other Federal, State, Tribal, and private land managers having management authority over lands relevant to that population."²⁸³

Under the 2012 Planning Rule, even the required coarse-filter effort to conserve native biodiversity, maintaining or restoring ecosystem integrity and diversity, is constrained by the mandates to engage in integrated resource management and contribute to social and economic sustainability. According to the rule: "The plan must provide for the diversity of plant and animal communities, within Forest Service authority and consistent with the inherent capability of the plan area, as follows . . .,"²⁸⁴ and the rule then requires that plan components provide for maintaining or restoring the ecological integrity of ecosystems and watersheds, maintaining or restoring the diversity of ecosystems and habitat types, etc.²⁸⁵ As noted in the rule's preamble, "the ecosystem and species-specific requirements in the final rule are both limited by Forest Service authority and the inherent capability of the plan area."²⁸⁶

According to directives published in the *Forest Service Handbook*, the Agency's intention is "to promote ecosystem integrity [historic conditions] in the plan area."²⁸⁷ The directives add, however, that "it may not be possible or appropriate to strive for returning key characteristics to past

281. 36 C.F.R. § 219.9(b)(2) (2017).

282. Schultz et al., *supra* note 6, at 438.

283. 36 C.F.R. § 219.9(b)(2) (2017) (emphasis added).

284. *Id.* § 219.9.

285. *Id.* § 219.9(a)–(b).

286. Preamble 2012 Rule, *supra* note 20, at 21,214.

287. See FOREST SERV., U.S. DEP'T OF AGRIC., FOREST SERVICE HANDBOOK 1909.12, § 23.11a (2015) [hereinafter FS HANDBOOK]. These directives are intended to direct agency implementation of the 2012 Planning Rule. See FOREST SERV., U.S. DEP'T OF AGRIC., *supra* note 5.

conditions throughout the plan area.”²⁸⁸ Due to climate change or other environmental changes, maintaining or restoring some past state may not fit with the inherent capability of a given area. Such an effort would be impractical. The directives provide that “not every desired condition or acre has to meet the definition of ecological integrity”²⁸⁹ In some areas of the national forest, historic conditions (the natural range of variation) is to serve merely as a guide, and the goal is to maintain or restore what will be a functioning ecosystem.²⁹⁰

In addition, according to the directives, in some areas of the forest “[c]onditions common in the past are directly opposed to integrated desired conditions (desired conditions that represents a balance of social, economic, cultural, and ecological needs).”²⁹¹ Also, “[t]o achieve social, economic, cultural, or ecological objectives it may be desirable to manage for uncommon conditions in specific areas in the plan area.”²⁹² According to these directives, ecological integrity should not be imposed in specific areas where past conditions would rule out desired conditions determined through integrated resource management.²⁹³ Imposing past conditions in such a situation would be beyond the authority of the Forest Service.²⁹⁴ The 2012 rule mandates achieving an appropriate integration of ecological, social, and economic factors, including timber (for harvest), habitat, habitat connectivity, grazing lands, cultural and heritage resources, recreation opportunities, aesthetics, etc., which is a mandate to bring into an appropriate balance the many diverse interests in a national forest, to use Pinchot’s term.²⁹⁵ The Agency is to deviate from ecological integrity in specific areas, seeking to maintain or restore historically uncommon conditions, if necessary to achieve the desired

288. FS HANDBOOK, *supra* note 287, § 23.11a.

289. *Id.* § 23.11.

290. *See id.* §§ 23.11, 23.11a.

291. *Id.* § 23.11a.

292. *Id.*

293. *Id.*

294. 36 C.F.R. § 219.10(a) (2017).

295. *Id.* §§ 219.10(a), 219.19. With more adequate descriptions, the rule’s “factors” are more obviously identical to the “interests” referred to by Pinchot. *See* PINCHOT, *supra* note 199, at 25.

balance of social, economic, and ecological interests (or factors).²⁹⁶

The 2012 rule also requires, for the coarse-filter effort, maintaining or restoring “the diversity” of ecosystems and habitat types throughout the plan area,²⁹⁷ which is ambiguous and allows much agency discretion in selecting the types of ecosystems and habitats to be maintained or restored, their proportions and distributions in the forest. There is no mandate within the rule to maintain or restore the natural or historic diversity of ecosystems and habitat types. Indeed, according to the *Forest Service Handbook*, in planning for the diversity of ecosystems and habitat types the Agency is merely *to consider* their historic diversity in the forest, and only if this is considered an appropriate reference.²⁹⁸ Under the 2012 rule, plan components must provide for maintaining or restoring rare plant and animal communities, and maintaining or restoring a diversity of tree species “similar” to the diversity of trees that exists naturally in the plan area.²⁹⁹ These requirements are vague, and are subject to the mandate for integrated resource management.³⁰⁰

In short, the biodiversity conservation mandates within section 219.9 of the 2012 Planning Rule, together with the directives published in the *Forest Service Handbook*, grant the Agency high levels of discretion and flexibility in the management and restoration of ecosystems, watersheds, and habitats in the national forests. The Agency is not required to maintain natural or historic conditions. Attempts to recover federally listed species, conserve proposed and candidate species for listing, and maintain viable populations of species of conservation concern are subject to this qualification—all such efforts must be brought into integrated resource management and be adjusted to achieve the desired balance of

296. FS HANDBOOK, *supra* note 287, § 23.11a.

297. 36 C.F.R. § 219.9(a)(2) (2017).

298. FS HANDBOOK, *supra* note 287, § 23.11d. According to the rule’s preamble, “in some instances it may be impractical or impossible to restore all degraded, damaged, or destroyed systems that may be present in a plan area because of cost, unacceptable tradeoffs between other resource and restoration needs, or where restoration is outside the capability of the land or Forest Service authority.” Preamble 2012 Rule, *supra* note 20, at 21,210.

299. 36 C.F.R. § 219.9(a)–(b) (2017).

300. *Id.* § 210(a).

ecological, social, and economic interests.³⁰¹ As discussed, species of conservation concern may be dropped to the lower conservation standard. According to the directives, in the development of plan components that provide for the recovery of federally listed species, the responsible official is merely *to consider* approved recovery plans.³⁰² In the development of components that provide for the management of proposed and candidate species, the official is merely *to consider* relevant conservation strategies and agreements, and other sources.³⁰³

The 2012 Planning Rule mandates multiple-use biodiversity conservation. Agency scientists describe the rule in this apt way: “[T]he . . . [r]ule considers species conservation within the context of overall diversity of plant and animal communities, managing ecosystems, and fulfilling the multiple-use objectives for the plan area.”³⁰⁴ The 2012 rule, and the Agency’s practice of conserving biodiversity, rest on Pinchot’s philosophy of national forest management.³⁰⁵ As Pinchot writes, the many diverse interests in the forest must be brought into an appropriate balance, adjusting each to achieve a proper fit, ultimately for the good of American society.³⁰⁶ Under the rule, biodiversity conservation and other ecological concerns may not overly influence the balance of interests the Agency achieves. This reflects well Pinchot’s views. In his book, Pinchot emphasizes the role the national forests are to play in meeting the timber, water, and other resource needs of local communities.³⁰⁷

301. *Id.*

302. FS HANDBOOK, *supra* note 287, § 23.13a.

303. *Id.* § 23.13b. Under the ESA, a recovery plan for each federally listed species must be approved, issued, and implemented by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service. *See Recovery*, U.S. FISH & WILDLIFE SERV., <https://www.fws.gov/endangered/what-we-do/recovery-overview.html> [https://perma.cc/T22E-3UAJ] (last updated Jan. 9, 2018); *Recovery of Species Under the Endangered Species Act (ESA)*, NAT’L MARINE FISHERIES SERV., <http://www.nmfs.noaa.gov/pr/recovery/> [https://perma.cc/6N5U-8LYY] (last updated Sept. 2, 2016).

304. GREGORY D. HAYWARD ET AL., FOREST SERV., U.S. DEP’T OF AGRIC., APPLYING THE 2012 PLANNING RULE TO CONSERVE SPECIES: A PRACTITIONER’S REFERENCE 1 (2016), https://www.fs.fed.us/rm/pubs_journals/2016/rmrs_2016_hayward_g001.pdf [https://perma.cc/C4VY-2RM9].

305. *See generally* PINCHOT, *supra* note 199.

306. *Id.* at 25–26.

307. *Id.* at 7–34.

The Rim Fire project provides a good illustration of the Agency's refusal to commit to maintaining a viable population of an existing wildlife species within a national forest, for the express reason that doing so would be beyond agency authority. The 1982 Planning Rule mandates maintaining viable populations of existing native fish and wildlife (vertebrate) species within a national forest.³⁰⁸ Yet, in Rim Fire project documents, the Agency refuses to commit to protecting black-backed woodpeckers at this level.³⁰⁹ Discussing her decision to approve this salvage logging project, Forest Supervisor Skalski writes that supporting local economies with a sustainable supply of timber is an important component of the Forest Service's multiple-use mandate.³¹⁰ She claims that with alterations to the proposed project, specifically a lower volume of burned timber to be salvaged, the project minimizes impacts on black-backed woodpeckers and other early successional species.³¹¹ No salvage logging is allowed in the adjacent national park, and as indicated by Skalski, this substantially increases the percentage of the Rim Fire area left to recover naturally.³¹² She refers to one assessment, according to which black-backed woodpeckers are not declining in the Sierra Nevada.³¹³ No assurance is provided that a viable population will be maintained within the national forest, but Skalski provides reasons to accept that the woodpecker will remain viable within the Sierra Nevada and its wider range.³¹⁴

Skalski argues, essentially, that maintaining a viable population of black-backed woodpeckers within the national forest is beyond the authority of the Forest Service. Doing this would not be consistent, she claims, with the agency's mandate to manage for multiple use and support local economies.³¹⁵ It may initially seem unlikely that the Forest Service would designate a given species as a species of conservation concern,

308. 36 C.F.R. § 219.19 (2000).

309. See RIM FIRE RECOVERY EIS, *supra* note 32, at 418–25.

310. RIM FIRE RECOVERY ROD, *supra* note 38, at 12.

311. *Id.* at 16.

312. *Id.* at 17; see RIM FIRE RECOVERY EIS, *supra* note 32, at 419, 424.

313. RIM FIRE RECOVERY ROD, *supra* note 38, at 18.

314. *Id.* at 17–20.

315. *Id.* at 12.

signifying its belief that substantial concern over persistence is indicated by the best available scientific information, only to adopt the lower conservation standard for the sake of achieving high levels of timber production and harvesting. Yet, as the Rim Fire project illustrates, this sort of scenario is not at all far-fetched.

Under the 2012 rule, the black-backed woodpecker, by definition, could not be designated a species of conservation concern, since it has been proposed for federal listing.³¹⁶ According to the *Forest Service Handbook*, with respect to species that have been proposed or are candidates for listing, efforts to conserve a species are to be extended throughout its range, in coordination with other public and private land managers.³¹⁷ The management plan is to provide for the forest's contribution toward improving a species' range-wide status to potentially avoid listing, taking into consideration conservation strategies and agreements, and other sources.³¹⁸ There is no mandate within the 2012 rule to maintain viable populations of proposed and candidate species within a national forest, and, considering the Rim Fire project, black-backed woodpeckers are not protected at this level. This allows greater discretion and flexibility.

The 2012 Planning Rule is highly controversial.³¹⁹ Critics have faulted the rule for the high level of discretion granted the Agency.³²⁰ Another criticism is that, under this rule,

316. 36 C.F.R. § 219.9(c) (2017). The black-backed woodpecker does not meet the Forest Service's definition of "candidate species" for listing. *See id.* § 219.19 (defining "candidate species").

317. FS HANDBOOK, *supra* note 287, § 23.13b.

318. *Id.*; *see also* 36 C.F.R. § 219.19 (2017) (defining "conserve"). Conserving proposed and candidate species will be discussed more fully in Section VII.

319. According to the preamble, the rule's biodiversity conservation mandates (§ 219.9) have sparked much interest and generated much debate. Preamble 2012 Rule, *supra* note 20, at 21,174; *see also* Rob Chaney, *Opinions Mixed on New U.S. Forest Service Planning Rule*, MISSOULIAN (Mar. 26, 2012), http://missoulian.com/news/state-and-regional/opinions-mixed-on-new-u-s-forest-service-planning-rule/article_6e1bbe7e-77c5-11e1-a7ae-0019bb2963f4.html [<https://perma.cc/8ZFW-QHU6>]. Soon after it was issued, the 2012 rule was challenged in court by a coalition of timber, ranching, and recreation groups. *See* Stephanie Clark, *D.C. Court Upholds Forest Service's 2012 Planning Rule*, ENDANGERED SPECIES LAW & POLICY (Apr. 30, 2015), <http://www.endangeredspecieslawandpolicy.com/2015/04/articles/court-decisions/d-c-court-upholds-forest-services-2012-planning-rule/> [<https://perma.cc/2MHG-LA8S>].

320. *See, e.g.*, Schultz et al., *supra* note 6, at 434–42. The Center for Biological Diversity is critical of the discretion the 2012 rule grants the Agency, claiming that the

declining native species in the national forests may continue to decline to the point that they are in danger of extinction before any federal intervention is required and special protections can be put into place under the ESA.³²¹ Within the rule, there is no requirement to make a special effort to protect from harm species that are not federally listed, have not been proposed or are candidates for listing, and have not been designated species of conservation concern.³²² As Schultz and others write:

Since the agency only commits to maintaining the viability of species of conservation concern, under the 2012 rule the [Forest Service] has no obligation to address the decline of any species not listed, proposed, or a candidate under the ESA, unless the responsible official, in this case the Regional Forester, expresses substantial concern about its persistence. Thus, any number of species could pass from secure to endangered status before any federal intervention would be required.³²³

As Schultz and others discuss, under the 2012 rule, a species of conservation concern need not be maintained in its historic distribution and need not be well distributed.³²⁴ The rule allows for range reductions, which may threaten viability.³²⁵ Schultz and others point out that the rule does not require monitoring species of conservation concern to ensure that viable populations are maintained, and there is no requirement to monitor federally listed species, or species that

rule significantly weakens species protections compared to the 1982 rule. *See New Planning Rule Draws Mixed Reviews*, CTR. FOR BIOLOGICAL DIVERSITY (Jan. 26, 2012), <http://www.biologicaldiversity.org/news/center/articles/2012/e-and-e-news-01-26-2012.html> [<https://perma.cc/U297-B9LZ>]. The Wilderness Society has praised the new rule, however, specifically for the protections it provides watersheds and native species. *See National Forest Planning Rule*, THE WILDERNESS SOC'Y, <http://wilderness.org/article/national-forest-planning-rule> [<https://perma.cc/EU7A-7G37>] (last visited Jan. 18, 2018).

321. Schultz et al., *supra* note 6, at 432.

322. *Id.*; 36 C.F.R. § 219.9 (2017).

323. Schultz et al., *supra* note 6, at 432.

324. *Id.* at 433, 438; *see also* 36 C.F.R. § 219.19 (2017) (defining “viable population”).

325. Schultz et al., *supra* note 6, at 433, 438.

have been proposed or are candidates for listing.³²⁶ The rule requires monitoring “focal species” to evaluate success in providing the ecological conditions required by the rule’s biodiversity provisions, but the selection of focal species, and whether any other species will be monitored as well, is left to agency discretion.³²⁷ In general, Schultz and other experts are concerned that the biodiversity provisions within the 2012 rule are too ambiguous, that the Agency is left with too much discretion, and that the rule will prove ineffective in the conservation of native wildlife.³²⁸

VII. BIODIVERSITY CONSERVATION UNDER THE 2012 PLANNING RULE

Under the 2012 Planning Rule, the Forest Service is required to provide for a national forest’s contribution to local social and economic sustainability, and may be required to provide for the forest’s sustainable contribution to the regional and national economies.³²⁹ All aspects of forest management must be brought under integrated resource management.³³⁰ The rule is written such that biodiversity conservation and other ecological concerns may not overly influence the balance of interests the Agency achieves. Yet, on closer consideration, the conservation mandates presented by the 2012 rule concerning federally listed and other at-risk species are actually quite strong, and, if strictly followed, effectively constrain agency discretion and the balance the Agency achieves.

According to the 2012 rule, plan components must “provide the ecological conditions necessary to[] contribute to the recovery” of federally listed species, with “recovery” defined as improvement in a species’ status to the point that federal

326. *Id.* at 433, 436.

327. *Id.* at 433, 437; *see also* 36 C.F.R. § 219.12(a)(5)(iii) (2017). “Focal species” is defined within the rule as: “[A] small subset of species whose status permits inference to the integrity of the larger ecological system to which it belongs and provides meaningful information regarding the effectiveness of the plan in maintaining or restoring the ecological conditions to maintain the diversity of plant and animal communities in the plan area.” *Id.* § 219.19.

328. Schultz et al., *supra* note 6, at 442.

329. 36 C.F.R. § 219.8(b) (2017).

330. *Id.* § 219.10(a).

listing is no longer appropriate.³³¹ The wording of this mandate, “necessary to contribute,” is properly interpreted as “necessary to effectively or meaningfully contribute.” Properly understood, the rule mandates providing the ecological conditions necessary for the national forest’s effective or meaningful contribution to the recovery of each federally listed species in the forest. As plan components are developed, the responsible official must consider the ecological role the forest realistically plays in the recovery of each listed species, taking into account the contributions made by other public and private lands. To be effective or meaningful, a national forest’s contribution must be consistent with this role. According to the *Forest Service Handbook*, the responsible official is to consider the approved recovery plan for each species, and consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service as appropriate.³³² An approved recovery plan is presumably based on the best available scientific information concerning the management and recovery of a listed species. In all aspects of plan development, the 2012 rule mandates use of the best available scientific information.³³³

Under the 2012 rule, all agency actions within a national forest must be consistent with the forest’s current management plan.³³⁴ This is the “consistency requirement.” Given this requirement, a proposed logging or other project in the forest may not hinder efforts to recover federally listed species as specified in the relevant management plan components.

The ESA provides federally listed species with special protections. The ESA prohibits the “taking” (harassing, harming, pursuing, hunting, etc.) of individuals of an endangered species, and regulations extend this prohibition to

331. *Id.* §§ 219.9(b), 219.19.

332. FS HANDBOOK, *supra* note 287, § 23.13a. “[National Forest Service] lands are a major contributor to threatened and endangered species recovery plans and actions . . .” Preamble 2012 Rule, *supra* note 20, at 21,215. The Forest Service is expected to “address conservation measures and actions identified in recovery plans relevant to [threatened and endangered] species.” *Id.*; *see also* U.S. FISH & WILDLIFE SERV., *supra* note 303.

333. 36 C.F.R. § 219.3 (2017).

334. *Id.* § 219.15(b).

threatened species.³³⁵ In addition, according to ESA section 7(a)(2):

Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical, unless such agency has been granted an exemption for such action³³⁶

When developing plan components, or planning individual projects, the Forest Service may seek compromises in listed-species protections. At the management plan level, this would be for the sake of integrated resource management, achieving the desired balance of ecological, social, and economic interests.³³⁷ The Agency may request that certain areas be excluded from critical habitat designation, for example.³³⁸ The Agency may also request exemptions to mandates prohibiting the taking of individuals of a listed species, but the Agency

335. 16 U.S.C. §§ 1533(d), 1538(a) (2012); *see also* Cherise Gaffney, *A Primer on the Endangered Species Act: The Species List, Take Prohibition, Permits, & Federal Consultation Requirements*, STOEL RIVES: LEGAL INSIGHTS (May 11, 2006), <https://www.stoel.com/legal-insights/article/a-primer-on-the-endangered-species-act-the-specie> [<https://perma.cc/5P3T-ZYW8>].

336. 16 U.S.C. § 1536(a)(2) (2012).

337. 36 C.F.R. § 219.10 (2017).

338. *See* STANFORD ENVTL. LAW SOC'Y, THE ENDANGERED SPECIES ACT 62–64 (2001). The Forest Service regularly suggests adjustments in critical habitat designations. *See, e.g.*, Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Sierra Nevada Yellow-Legged Frog, the Northern DPS of the Mountain Yellow-Legged Frog, and the Yosemite Toad, 81 Fed. Reg. 59,046 (Aug. 26, 2016) (codified at 50 C.F.R. pt. 17). Such changes are at the discretion of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service. *See ESA Implementation: Critical Habitat Exclusions*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/endangered/improving_ESA/CHE.html [<https://perma.cc/5XVD-NJHX>] (last updated Apr. 17, 2017).

faces strict limits on any compromising of listed-species protections.³³⁹

With respect to species of conservation concern, the 2012 Planning Rule requires that a management plan provide the ecological conditions necessary for maintaining a viable population of each of these species within the national forest.³⁴⁰ Again, if the responsible official determines that it is beyond agency authority, or not within the inherent capability of the forest, to maintain a viable population within the forest, the official is to include components within the plan that provide conditions to contribute to the viability of that species within its range.³⁴¹ For each species of conservation concern, then, absent such a determination, a proposed logging or other project may not result in loss of viability within the forest. This is a consequence of the “consistency requirement.” Again, all agency actions within a national forest must be consistent with the forest’s current management plan.³⁴² To be sure, compromises in species protections are allowed for the sake of integrated resource management, achieving the desired balance of interests.³⁴³ A proposed project may result in some loss of individuals or habitat, as long as population viability is maintained. For the Rim Fire project, for example, the Agency acknowledges potential losses of individual California spotted owls (which would surely be designated a species of conservation concern), but concludes that the project would likely not result in loss of viability or lead to federal listing.³⁴⁴

For a species of conservation concern for which it *has* been determined that it is beyond the authority of the Agency, or not within the inherent capability of the national forest, to maintain a viable population within the forest, plan components must provide for the forest’s contribution to range-wide viability, and a proposed project may not impair this

339. *See id.*; *see also* Gaffney, *supra* note 335; STANFORD ENVT'L. LAW SOC'Y, *supra* note 338, at 62–64, 104–05, 127–30.

340. 36 C.F.R. § 219.9(b)(1) (2017).

341. *Id.* § 219.9(b)(2).

342. *Id.* § 219.15(b).

343. *Id.* § 219.10.

344. RIM FIRE RECOVERY EIS, *supra* note 32, at 351. The California spotted owl is an agency designated sensitive species, and the Rim Fire EIS reports that there is “increasing evidence” of population declines in the Sierra Nevada. *Id.* at 335; 36 C.F.R. § 219.9(c) (2017).

contribution.³⁴⁵ This is also a consequence of the consistency requirement. A project may not result in loss of individuals, or degradation of habitat, to the extent that the forest can no longer effectively contribute to viability within the species' range.

As Schultz and others point out, national forests and other public lands provide habitat that is essential for the survival of many species as surrounding lands are developed or otherwise disturbed.³⁴⁶ These authors argue that the Forest Service should only rarely make a *not within the inherent capability of the forest* determination, and drop a species of conservation concern to the lower conservation standard, because, for many of these species, to do so may result in a declining population and the threat of extinction.³⁴⁷ The point to be made here is that, for many species of conservation concern, a *not within the inherent capability of the forest* or a *beyond the authority of the Forest Service* determination may not significantly affect actual management. For a declining species that is highly dependent upon intact habitat within a national forest, under the 2012 rule the Agency is compelled to provide strong conservation efforts within the forest, with strict protection of habitat, to contribute effectively to the viability of the species within its range. For many species of conservation concern, contributing to range-wide viability is not, in practice, a much lower conservation standard.

It should be emphasized that the mandate to provide for a national forest's contribution to the viability of a species of conservation concern within its range is a mandate to provide for the forest's *effective* or *meaningful* contribution. The rule's preamble expresses the mandate in this way: provide the conditions "necessary to contribute to a viable population"

345. 36 C.F.R. § 219.9(b)(2)(ii) (2017).

346. Schultz et al., *supra* note 6, at 439. A good example is the mountain yellow-legged frog (*Rana muscosa* and *Rana sierra*). According to the Rim Fire Recovery EIS, although these frogs "were historically abundant throughout the Sierra Nevada, current research has reported declines over large expanses of their range and as much as 97 percent on Forest Service lands." RIM FIRE RECOVERY EIS, *supra* note 32, at 82. "The current remaining populations are restricted primarily to publicly managed lands within National Forests and National Parks . . ." *Id.* Both species are federally listed as endangered. *Id.* at 76; see also *Giving Mountain Yellow-legged Frogs a Fighting Chance*, NAT'L PARK SERV., <https://www.nps.gov/seki/learn/nature/mountain-yellow-legged-frogs.htm> [<https://perma.cc/VR7A-WGG6>] (last updated Aug. 28, 2016).

347. Schultz et al., *supra* note 6, at 438–39.

within a species' range,³⁴⁸ that is, provide the conditions necessary for the forest's effective or meaningful contribution. According to the directives, as plan components are developed, the responsible official is to consider the ecological role the national forest plays in maintaining a viable population within a species' range.³⁴⁹ Again, the 2012 rule mandates use of the best available scientific information.³⁵⁰ The official must take into consideration the role other public and private lands play, and will likely play in the future—the official is to coordinate with other land managers to the extent practicable.³⁵¹ Under the 2012 rule, the Forest Service is required to do more than provide for the forest's mere *contribution* to range-wide viability, left this ambiguous.³⁵² The mandate is to provide for the forest's effective or meaningful contribution, which must be consistent with the role the national forest realistically plays in maintaining range-wide viability.³⁵³ For many species, this role is considerable. As indicated in the preamble, the intent behind the 2012 Planning Rule is to provide effective conservation efforts for existing native species on national forest lands.³⁵⁴

As noted in the preamble, the 2012 rule requires that plan components be consistent with Forest Service authority, the

348. Preamble 2012 Rule, *supra* note 20, at 21,216.

349. The responsible official is to consider “the ecological role of the plan area to contribute to a viable population across the broader landscape.” FS HANDBOOK, *supra* note 287, § 23.13c.

350. 36 C.F.R. § 219.3 (2017).

351. *Id.* § 219.9(b)(2)(ii).

352. According to the preamble, a previous draft of the rule required that plan components provide for the forest's contribution to range-wide viability “to the extent practicable.” Preamble 2012 Rule, *supra* note 20, at 21,214. The qualifier was dropped in the final rule to avoid confusion. *Id.*

353. Schultz and others write: “If development on private land is adversely affecting biodiversity, the [Forest Service] has a greater, not lesser, responsibility to protect species on its lands.” Schultz et al., *supra* note 6, at 439. That the Agency accepts such a compensation principle is apparent in the directive to consider “the ecological role of the plan area to contribute to a viable population across the broader landscape,” which, to be accurate, must include consideration of the roles played by other public and private lands. FS HANDBOOK, *supra* note 287, § 23.13c(5)(c)(1).

354. According to the preamble, the intent behind the 2012 rule is the same as that behind the 1982 rule: “To provide habitat to maintain viable populations.” Preamble 2012 Rule, *supra* note 20, at 21,217. In addition: “[T]he requirements in the final rule are expected to provide the conditions that support the persistence of native species in the plan area . . . [T]he set of requirements in the final rule is not a lessening of protection from the 1982 rule . . .” *Id.* at 21,217–18.

inherent capabilities of the plan area, and the Agency's fiscal capacity.³⁵⁵ The mandate to provide for the forest's contribution to range-wide viability determines, in part, agency authority. Compromises in species protections are permitted for the sake of integrated resource management, achieving the desired balance with social and economic interests. There may be some losses of individuals and habitat. Yet a less-than-effective contribution toward maintaining range-wide viability for these species of conservation concern falls outside agency authority. Similarly, the mandate within the rule to provide for the forest's contribution to the recovery of federally listed species determines, in part, agency authority.³⁵⁶ Limited compromises in species protections may be possible, but a less-than-effective contribution toward the recovery of federally listed species, in light of approved recovery plans, falls outside agency authority.

Under the 2012 rule, with respect to proposed and candidate species for federal listing, plan components must provide for maintaining or restoring the conditions necessary to conserve these species, "conserve" defined as improving a species' status to potentially avoid federal listing.³⁵⁷ According to the directives, the Forest Service must provide habitats within a national forest that "contribute" to preventing federal listing.³⁵⁸ Working in coordination with other public and private land managers, the desired result of conservation efforts is to prevent listing.³⁵⁹ As noted in the preamble, it is "important" to provide plan components that assist in the recovery of proposed and candidate species "such that a Federal listing is no longer required."³⁶⁰ With respect to proposed and candidate species, then, plan components must provide the conditions necessary for the forest's effective or meaningful contribution toward improving the status of each of these species to potentially avoid federal listing, with the understanding that the desired result is to avoid listing.³⁶¹ As

355. *Id.* at 21,214; see 36 C.F.R. § 219.1(g) (2017).

356. See 36 C.F.R. § 219.9(b)(1) (2017).

357. See *id.* § 219.19 (defining "conserve").

358. FS HANDBOOK, *supra* note 287, § 23.13b.

359. See *id.*; Preamble 2012 Rule, *supra* note 20, at 21,215.

360. Preamble 2012 Rule, *supra* note 20, at 21,215.

361. "Potentially" is appropriate in the definition of "conserve" and in the agency

plan components are developed, the responsible official must consider the ecological role the national forest realistically plays in sufficiently improving a species' status, taking into account the contributions made by other public and private lands.³⁶² To be effective or meaningful, the forest's contribution must be consistent with this role. According to the directives, the responsible official is to consider relevant conservation strategies and agreements, and other sources.³⁶³

There is no mandate within the 2012 rule to maintain viable populations of proposed and candidate species within a national forest.³⁶⁴ Again, considering the Rim Fire project, black-backed woodpeckers are not protected at this level. Compromises in species protections are allowed for the sake of integrated resource management. Yet a less-than-effective contribution toward sufficiently improving a species' status within its range, in light of relevant conservation strategies and agreements, and other sources, would fall outside agency authority.³⁶⁵ As Schultz and others have pointed out, many native species are dependent upon intact habitats in the national forests and other public lands.³⁶⁶ For these species, surrounding land uses are such that the Agency must make strong conservation efforts to provide for a forest's effective contribution toward sufficient improvement in a species' range-wide status.³⁶⁷

Concerning proposed and candidate species, in accordance with the consistency requirement, a proposed individual project may not result in loss of individuals, or degradation of habitat, to the extent of impairing the forest's effective contribution toward sufficiently improving the range-wide

mandate concerning these species. Even with the best range-wide management efforts, success at recovery is not guaranteed, and, for some species, may not even be likely. Yet the desired result is always to avoid listing. *See* FS HANDBOOK, *supra* note 287, § 23.13b; Preamble 2012 Rule, *supra* note 20, at 21,215.

362. FS HANDBOOK, *supra* note 287, § 23.13b.

363. *Id.*

364. *See* 36 C.F.R. § 219.9 (2017); FS HANDBOOK, *supra* note 287, § 23.13b.

365. *See* 36 C.F.R. § 219.1(g) (2017).

366. Schultz et al., *supra* note 6, at 439.

367. That the Agency accepts a compensation principle is apparent in the directive: "Development of plan components . . . should be based on the ecological conditions necessary to conserve [these species] . . ." which, to be accurate, must include consideration of possible contributions from other public and private lands. *See* FS HANDBOOK, *supra* note 287, § 23.13b.

status of these species, as this contribution has been specified in the relevant plan components.

Commentators have faulted the 2012 Planning Rule for the high levels of discretion granted the Agency, and the biodiversity conservation mandates presented in section 219.9 of the rule indeed allow much discretion and management flexibility.³⁶⁸ As discussed, although the rule mandates maintaining or restoring the ecological integrity of ecosystems and watersheds, the Agency accepts that ecological integrity is not required in every area of a national forest.³⁶⁹ According to agency directives, “it may be desirable to manage for uncommon conditions in specific areas.”³⁷⁰ The rule mandates maintaining or restoring “the diversity” of ecosystems and habitat types in the forest, allowing agency discretion in selecting the types of ecosystems and habitats to be maintained or restored, their proportions and distribution in the forest.³⁷¹

Yet the Forest Service is required to provide for a national forest’s effective or meaningful contribution to the recovery of federally listed species, and the Agency is to consider approved recovery plans.³⁷² Whether a forest’s contribution is effective is properly assessed in light of approved recovery plans, which presumably are based on the best available scientific information regarding these species. In accordance with the ESA, critical habitat may not be destroyed or adversely modified.³⁷³ The Agency is also required to provide for a forest’s effective or meaningful contribution toward improving the status of proposed and candidate species, with the understanding that the desired result is to avoid federal listing.³⁷⁴ The Agency is to consider conservation strategies and agreements, as well as other sources.³⁷⁵ Whether a forest’s contribution is effective is appropriately assessed in light of

368. See, e.g., Schultz et al., *supra* note 6, at 434–42.

369. FS HANDBOOK, *supra* note 287, § 23.11a.

370. *Id.*

371. See 36 C.F.R. § 219.9(a)(2) (2017).

372. *Id.* § 219.9(b); 16 U.S.C. § 1536(a) (2012); FS HANDBOOK, *supra* note 287, § 23.13a.

373. 16 U.S.C. § 1536(a)(2) (2012).

374. 36 C.F.R. § 219.9(b) (2017); FS HANDBOOK, *supra* note 287, § 23.13b; Preamble 2012 Rule, *supra* note 20, at 21,215.

375. FS HANDBOOK, *supra* note 287, § 23.13b.

these sources. With respect to species of conservation concern, the Agency must provide the conditions necessary to maintain viable populations within the national forest, or (the alternative standard) provide for the forest's effective contribution toward maintaining range-wide viability, using the best available scientific information.³⁷⁶

These biodiversity provisions, if genuinely met, effectively constrain the management of ecosystems, watersheds, and habitats in a national forest. For many federally listed and other at-risk species, much is known of their habitat needs. According to the rule's preamble, the most effective strategy for conserving native biodiversity in the national forests is managing for historic (pre-settlement) conditions. The preamble provides this persuasive argument:

[N]ative species evolved and adapted within the limits established by natural landforms, vegetation, and disturbance patterns prior to extensive human alteration. Maintaining or restoring ecological conditions similar to those under which native species have evolved therefore offers the best assurance against losses of biological diversity and maintains habitats for the vast majority of species in an area³⁷⁷

As an example, the Rim Fire project EIS describes California spotted owl habitat requirements in some detail.³⁷⁸ According to the EIS, spotted owls require intact old growth forests, with structure and composition closely resembling historic (pre-settlement) conditions.³⁷⁹ On the other hand, black-backed woodpeckers are "strongly associated with burned forests, more closely than any other western bird

376. 36 C.F.R. §§ 219.3, 219.9(b) (2017); FS HANDBOOK, *supra* note 287, § 23.13c.

377. Preamble 2012 Rule, *supra* note 20, at 21,212. The argument has been made that native biodiversity is more effectively conserved as managers seek to maintain a close approximation of natural rather than historic conditions. *See* GORDON STEINHOFF, NATURALNESS AND BIODIVERSITY: POLICY AND PHILOSOPHY OF CONSERVING NATURAL AREAS 63–64 (2016). This allows for evolution of species and for natural changes in ecosystems through time. *Id.* "Natural conditions" is understood, again, as those conditions that are generally free of human influence. *See id.*

378. *See* RIM FIRE RECOVERY EIS, *supra* note 32, at 336, 339–40.

379. *Id.* at 339.

species.”³⁸⁰ The EIS provides specific management recommendations for black-backed woodpeckers obtained from the Agency’s conservation strategy for this species, including “will likely benefit most from large patches of burned forest being retained in unharvested condition.”³⁸¹ In agreement with the above argument from the preamble, one may assert, with some justification, that the conservation mandates within the 2012 rule concerning at-risk species compel the Agency to maintain or restore mature conifer forests in the Sierra Nevada, as well as post-fire, early successional forest habitat, in conditions and distributions that closely resemble historic (pre-settlement) conditions.

Under the 2012 rule, plan components must provide for maintaining or restoring the ecological integrity of riparian areas, but the rule allows agency discretion in selecting the widths of the “riparian management zones” to which this mandate applies.³⁸² The Agency is compelled, however, to select wider riparian management zones where necessary to adequately protect federally listed and other at-risk aquatic species. As an example from a different area of the country, the Forest Service has proposed a forest thinning and restoration project in the Chattahoochee National Forest in north Georgia.³⁸³ The project will involve timber harvesting and road construction on steep slopes, and the Agency has proposed twenty-five foot riparian buffer zones to protect the streams and the native brook trout fishery from increased sedimentation and higher water temperatures.³⁸⁴ Georgia ForestWatch and other citizen organizations persuasively argue that significantly wider buffer zones are required.³⁸⁵ These organizations point out that many trees along the

380. *Id.* at 415.

381. *Id.* at 417; INST. FOR BIRD POPULATIONS, *supra* note 73, at 9.

382. See 36 C.F.R. § 219.8(a)(3) (2017).

383. FOREST SERV., U.S. DEPT OF AGRIC., DRAFT ENVIRONMENTAL ASSESSMENT: COOPER CREEK WATERSHED PROJECT i (2015), http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/98791_FSPLT3_2620731.pdf [https://perma.cc/DP9Q-AZEE] (last visited Feb. 9, 2018).

384. *Id.* at 114–15; Georgia ForestWatch et al., Comment Letter on Draft Environmental Assessment Cooper Creek Watershed Project 1 (Feb. 5, 2016), <http://gafw.org/wp-content/uploads/2016/02/Cooper-Creek-2.5.16-comments-website.pdf> [https://perma.cc/W9RQ-UPG7].

385. Georgia ForestWatch et al., *supra* note 384, at 70–71.

streams have branches that exceed twenty-five feet in length.³⁸⁶ With such a narrow buffer, these trees will be harvested, leaving significant gaps in forest cover along the streams.³⁸⁷

Virtually every aspect of national forest management is involved in satisfying the conservation mandates within the 2012 rule concerning federally listed species, proposed and candidate species, and species of conservation concern, and the Agency is left with more limited discretion and management flexibility.

As another example, the 2012 rule requires monitoring focal species in order to evaluate success in providing the ecological conditions required by the rule's biodiversity section 219.9.³⁸⁸ "Focal species" is defined as those species "whose status permits inference to the integrity of the larger ecological system to which it belongs and provides meaningful information regarding the effectiveness of the plan"³⁸⁹ The rule also requires monitoring a "select set" of those ecological conditions considered necessary to contribute to the recovery of federally listed species, conserve proposed and candidate species, and maintain viable populations of species of conservation concern during the coarse-filter and (if necessary) fine-filter efforts.³⁹⁰ The rule allows the Agency discretion in selecting focal species, any other species that will also be monitored, and the ecological conditions to be monitored.³⁹¹ The rule also allows discretion in selecting the monitoring procedures to be used.³⁹² This flexibility in monitoring is appropriate, according to the preamble, since it allows monitoring schedules and procedures to be tailored to the circumstances of an individual national forest.³⁹³ The 2012 rule does not require monitoring federally listed species, or those

386. *Id.* at 70.

387. *Id.* According to these organizations, the native brook trout fishery is considered the largest and best in the state, but it is vulnerable for several reasons. *Id.* at 67, 71.

388. 36 C.F.R. § 219.12(a)(5)(iii) (2017).

389. *Id.* § 219.19.

390. *Id.* § 219.12(a)(5)(iv); see Preamble 2012 Rule, *supra* note 20, at 21,233–34.

391. See 36 C.F.R. §§ 219.12(a)(4)–(5), 219.19 (2017).

392. *Id.* § 219.12(a)(6).

393. Preamble 2012 Rule, *supra* note 20, at 21,230.

species that have been proposed or are candidates for listing.³⁹⁴ The rule does not require monitoring species of conservation concern to ensure that viable populations are maintained.³⁹⁵ As the preamble notes, federally listed and other at-risk species may be the most appropriate focal species, but there is no requirement to select these as focal species.³⁹⁶

This is a major concern raised by Schultz and other experts. The discretion allowed by the rule, especially in monitoring, leads these experts to call into question the rule's effectiveness for conserving wildlife.³⁹⁷ "Provisions in the rule encourage the development of robust monitoring strategies," they write,³⁹⁸ presumably referring to the conservation mandates regarding federally listed and other at-risk species. "However," they add, "our primary concern is whether these strategies will be developed, funded, implemented, and designed in such a way that they inform" effective management.³⁹⁹

Yet the Forest Service is compelled to monitor in an effective manner to satisfy the conservation mandates concerning federally listed and other at-risk species. These provisions in the 2012 rule *require*, rather than merely encourage, the development of robust monitoring strategies. According to the rule, the monitoring program for each national forest must be responsive to the desired conditions and objectives stated in the management plan.⁴⁰⁰ As the preamble indicates, the Agency may not have the financial and technical capabilities to conduct direct monitoring of *every* at-risk species in a national forest.⁴⁰¹ According to the preamble, with respect to at-risk species:

It is expected that monitoring a select set of the ecological conditions required by these species will give the responsible official information about the

394. See 36 C.F.R. §§ 219.9(b), 219.12(a)(5) (2017); see also Preamble 2012 Rule, *supra* note 20, at 21,234.

395. 36 C.F.R. §§ 219.9(c), 219.12(a)(5) (2017).

396. Preamble 2012 Rule, *supra* note 20, at 21,234.

397. Schultz et al., *supra* note 6, at 433, 436–38, 442.

398. *Id.* at 437.

399. *Id.*

400. 36 C.F.R. § 219.12(a)(2) (2017).

401. See Preamble 2012 Rule, *supra* note 20, at 21,230.

effectiveness of . . . plan components included to meet the requirements of at risk species. . . . Monitoring for . . . focal species will also provide information about the effectiveness of plan components for at risk species.⁴⁰²

In development of the monitoring program, the Agency is required to use the best available scientific information and document how this information is used.⁴⁰³ Although the 2012 rule allows the Agency much discretion and flexibility in monitoring, definite constraints are placed on the monitoring program developed for each national forest.⁴⁰⁴

The 2012 Planning Rule provides a mix of strong biodiversity provisions with agency discretion and flexibility in meeting these requirements and accomplishing other management objectives. Schultz and others are concerned that the biodiversity provisions within the rule are too ambiguous and allow too much agency discretion,⁴⁰⁵ yet, if strictly followed, the conservation mandates concerning federally listed species, proposed and candidate species, and species of conservation concern effectively constrain agency decision making in the development of management plans, and from project to project.

According to the 2012 rule, a land management plan “must provide for social, economic, and ecological sustainability”⁴⁰⁶ According to the preamble, “ecological, social, and economic systems are recognized as interdependent, without one being a priority over another.”⁴⁰⁷ In accordance with this mandate, the Forest Service must provide an equitable, or fair and impartial balance of ecological, social, and economic interests in the national forests. This mandate is

402. *Id.* at 21,234.

403. 36 C.F.R. §§ 219.3, 219.14(a)(4) (2017); Preamble 2012 Rule, *supra* note 20, at 21,232.

404. *See, e.g.*, 36 C.F.R. § 219.12 (2017); Preamble 2012 Rule, *supra* note 20, at 21,230–34.

405. Schultz et al., *supra* note 6, at 442.

406. 36 C.F.R. § 219.8 (2017) (adding: “within Forest Service authority and consistent with the inherent capability of the plan area”).

407. Preamble 2012 Rule, *supra* note 20, at 21,211. In addition, the rule “considers ecological, economic, and social sustainability as equal and interdependent factors.” *Id.* at 21,177 (discussing the selected alternative for the final rule).

intended as an interpretation of MUSYA's requirement for "harmonious and coordinated management of the various resources, each with the other."⁴⁰⁸ In accordance with the 2012 rule, biodiversity conservation and other ecological concerns may not overly influence the balance of interests the Agency achieves in the forests, but, on the other hand, social and economic concerns may not overly influence this balance either. It is fair to say that the 2012 rule goes beyond current agency practice in this important way.

Commentators have claimed that, for many years, the Forest Service has too strongly emphasized logging and other resource extraction in its management of the national forests.⁴⁰⁹ It appears that, in its practice, the Agency has followed Pinchot's philosophy in this also. In his book, Pinchot indicates that timber production is to play the dominant role in the national forests.⁴¹⁰ "The National Forests occupy high mountain lands," Pinchot writes, "rough and rocky, and which will always be of value chiefly for the production of timber and wood."⁴¹¹ The challenge is to bring each national forest closer to a genuinely equitable balance of ecological, social, and economic interests, and the key to achieving this is ensuring that the conservation mandates presented by the 2012 rule concerning federally listed and other at-risk species are genuinely met.

VIII. THE ESSENTIAL ROLE OF NEPA

The 2012 Planning Rule brings into a formal system the Agency's traditional practice of fitting species protections into a balance of interests considered appropriate for each national forest and each management area, with indications of agency discretion and allowed compromises in species protections for the sake of achieving the desired balance. As the rule's

408. *Id.* at 21,211.

409. *See, e.g.*, Charles Wilkinson, *Foreword* to FROM CONQUEST TO CONSERVATION, *supra* note 1, at xvi-xvii.

410. *See* PINCHOT, *supra* note 199, at 12, 17-18.

411. *Id.* at 17. Pinchot also writes: "Thus the timber is there, first of all, to be used. The more it is used, the better." *Id.* at 12. "That is why the Forest is protected. The timber is for use." *Id.* at 18. Tuholske and Brennan write, referring to Pinchot, "[h]is legacy—the emergence of timber management... as the agency's primary responsibility—remains strong to this day." Tuholske & Brennan, *supra* note 11, at 58.

preamble points out, the Agency has traditionally focused its conservation efforts on federally listed species, and other species considered vulnerable, rather than all native plants and animals.⁴¹² The 2012 rule codifies or formalizes, as well, this more focused conservation effort.⁴¹³ The rule goes beyond current agency practice by calling for improvement in at least this important respect. The rule mandates achieving an equitable, or fair and impartial balance of ecological, social, and economic interests in each forest, with the understanding that one type of interest may not dominate the others.⁴¹⁴ This mandate fairly interprets MUSYA's requirement for "harmonious and coordinated management."⁴¹⁵ The 2012 rule is intended to standardize and improve future agency practice.⁴¹⁶

The problem at this point is that, although the 2012 Planning Rule requires use of the best available scientific information in management plan development, the rule adds that the responsible official is to determine which scientific information is the most accurate, reliable, and relevant to the issues under consideration in plan development.⁴¹⁷ In the many aspects of plan development—including the assessments of forest conditions, the selection of species of conservation concern, providing the conditions necessary to maintain viable populations of these species, selecting focal species, developing the monitoring program, etc.—the 2012 rule grants the Agency discretion to adopt the scientific studies, conclusions, and recommendations of its choosing. No requirements within the

412. Preamble 2012 Rule, *supra* note 20, at 21,216.

413. *Id.*

414. See 36 C.F.R. § 219.8 (2017); Preamble 2012 Rule, *supra* note 20, at 21,211.

415. See Preamble 2012 Rule, *supra* note 20, at 21,211.

416. *Id.* at 21,162–63. According to the preamble, "the new rule is designed to make planning more efficient and effective." *Id.* at 21,163. Hayward and others write: "Through the 2012 Planning Rule, the Forest Service is attempting to use more consistent approaches to manage for and assess species conservation." HAYWARD ET AL., *supra* note 304, at 1.

417. "The responsible official shall use the best available scientific information to inform the planning process required by this subpart. In doing so, the responsible official shall determine what information is the most accurate, reliable, and relevant to the issues being considered." 36 C.F.R. § 219.3 (2017). Of course, the responsible official needs to determine this, but the second sentence limits the most accurate, reliable, and relevant information to just that information the official determines has these properties.

2012 rule compel use of approved recovery plans, conservation strategies and agreements, or any other information sources. In the above discussion, much was made of the 2012 rule's scientific information requirement,⁴¹⁸ but this requirement is actually heavily qualified and does not effectively constrain agency decision making.

In its practice, however, the Forest Service is under a strict, unqualified requirement to use the best available scientific information in management plan development. The 2012 Planning Rule requires that the Forest Service prepare an EIS to evaluate the environmental impacts of each new management plan, and each revision of an existing plan.⁴¹⁹ NEPA regulations mandate use of the best available scientific information in the analyses and discussions within an EIS, and there is no qualifying language allowing agency discretion in selecting the scientific information that is brought to bear.⁴²⁰ The 2012 rule's conservation mandates concerning federally listed and other at-risk species effectively limit agency discretion and flexibility in the context of NEPA and its implementing regulations. NEPA regulations help ensure high quality analyses of the impacts of a proposed management plan and individual projects, helping to ensure that the conservation mandates concerning at-risk species are genuinely met. In their legal challenges of salvage logging projects in the Sierra Nevada, the Center for Biological Diversity and other organizations allege violations of NEPA and its implementing regulations.⁴²¹

In accordance with NEPA and its regulations, an EIS is required if a proposed federal action will significantly affect

418. 36 C.F.R. § 219.3 (2017).

419. *See id.* § 219.7(c). The rule also requires that the decision to adopt a proposed management plan be recorded in a decision document prepared under NEPA. *Id.* § 219.14(a). NFMA requires that land management plans be developed in accordance with NEPA. *See* 16 U.S.C. § 1604(g)(1) (2012); *see also* Wilkinson & Anderson, *supra* note 33, at 74; *see generally* Kimberly Wells, *Can't See the Trees for the Forest? The Ongoing Controversy over Assessing the Site Specific Impacts of Comprehensive Forest Management Plans*, 41 *ECOL. L.Q.* 553 (2014) (concerning the extent of the environmental analyses that must be included within an EIS prepared for a proposed management plan).

420. *See, e.g.*, 40 C.F.R. § 1502.24 (2017).

421. *See* Ctr. for Biological Diversity Complaint, *supra* note 4, at 13–15; Earth Island Inst. Complaint, *supra* note 53, at 26–28.

the natural environment.⁴²² If required, an EIS serves as the means, or vehicle, by which a federal agency evaluates the environmental impacts of the proposed action.⁴²³ In an EIS, an agency must evaluate reasonable alternatives to the proposed action.⁴²⁴ The agency's decision on whether to pursue the proposed action or an evaluated alternative must rest upon the analyses and discussions within this document.⁴²⁵ In addition, an EIS provides the means by which other agencies and the public can review and comment on a proposed federal action and reasonable alternatives prior to the final decision.⁴²⁶

According to NEPA regulations, within an EIS a federal agency must "provide full and fair discussion" of the significant environmental impacts of the proposed action.⁴²⁷ As this mandate has been interpreted by the courts, within an EIS an agency must take a "hard look" at the environmental impacts of the proposed action, and must not minimize adverse side effects.⁴²⁸ According to NEPA regulations, an agency "shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements."⁴²⁹ In accordance with this requirement, analyses of impacts within an EIS are to be thorough, accurate, well reasoned, and must be based on the best available scientific information.⁴³⁰ Descriptions of the affected environment required within an EIS must be accurate and in sufficient detail.⁴³¹ Furthermore, an agency "shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for

422. 42 U.S.C. § 4332(C) (2012); *see also* 40 C.F.R. §§ 1502.1, 1502.2, 1508.9, 1508.11 (2017).

423. 40 C.F.R. § 1502.2(g) (2017).

424. *Id.* § 1502.1.

425. *Id.* §§ 1502.1, 1502.2(g), 1502.14.

426. *See, e.g., id.* §§ 1500.1(b), 1500.2(d), 1501.1(b), 1502.9(b), 1502.19, 1503.

427. *Id.* § 1502.1; Ctr. for Biological Diversity Complaint, *supra* note 4, at 9–10 (discussing NEPA requirements for an EIS).

428. *See, e.g.,* Earth Island Inst. v. U.S. Forest Serv. (*Earth Island II*), 442 F.3d 1147, 1153–54; 1159–60 (9th Cir. 2006); Ocean Advocates v. U.S. Army Corps of Eng'rs, 402 F.3d 846, 864–65, 870–71 (9th Cir. 2004); Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1211–12 (9th Cir. 1998).

429. 40 C.F.R. § 1502.24 (2017).

430. *See, e.g.,* Ctr. for Biological Diversity Complaint, *supra* note 4, at 9–10, 13–14.

431. *See* 40 C.F.R. § 1502.24 (2017); *see also id.* § 1502.15.

conclusions in the statement.”⁴³² This requirement allows citizens and the courts to evaluate the quality of the information used, as well as the accuracy and thoroughness of the analyses within an EIS. When “there is incomplete or unavailable information, the agency shall always make clear that such information is lacking” and explain “the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts”⁴³³ In addition, the agency must directly and explicitly respond to dissenting scientific opinion; the agency may not simply ignore dissenting opinion.⁴³⁴

NEPA regulations specify that, within an Environmental Assessment (EA), a federal agency is to “provide sufficient evidence and analysis” for determining whether the impacts of a proposed action will indeed be significant, triggering the need to prepare an EIS.⁴³⁵ The courts have interpreted this as a mandate to take a “hard look” at the environmental impacts of a proposed action.⁴³⁶ In accordance with this mandate, analyses of impacts within an EA must be accurate, well reasoned, sufficiently thorough, and based on the best available scientific information.⁴³⁷ With respect to either an EA or EIS, NEPA regulations require use of “high quality information.”⁴³⁸ According to these regulations, “accurate scientific analysis” is essential for implementing NEPA.⁴³⁹ These regulations are fairly interpreted as requiring that analyses of impacts within a document prepared under NEPA be thorough, accurate, well reasoned, and based on the best available scientific information.

According to NEPA regulations, analyses of impacts within an EA or EIS must be based on *objectively* the best available scientific information, not qualified in terms of agency judgment. Again, within an EIS an agency must provide “full

432. *Id.* § 1502.24.

433. *Id.* § 1502.22.

434. *See id.* § 1502.9(b).

435. *Id.* § 1508.9(a)(1).

436. *See* Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1211 (9th Cir. 1998).

437. *See, e.g.,* Earth Island Inst. Complaint, *supra* note 53, at 9–10, 27–28.

438. 40 C.F.R. § 1500.1(b) (2017).

439. *Id.*

and fair discussion” of significant impacts.⁴⁴⁰ The parameters for a full and fair discussion are not specified, but this is not left to agency judgment. Indeed, the Council on Environmental Quality (CEQ) has issued guidance on how extensive impact analyses should be within an EIS prepared for a forest management plan or other “programmatically EIS.”⁴⁴¹ “Full and fair discussion,” “professional integrity,” and “scientific integrity” are ambiguous expressions, but they are intended to be understood objectively, not in terms of agency judgment concerning what constitutes full and fair discussion, or professional and scientific integrity. The requirements for an EA include providing “sufficient evidence and analysis,” and, though ambiguous, this expression is to be understood objectively, not in terms of agency judgment.⁴⁴²

Forest Service directives call for coordinating management plan development or revision with preparing the required plan EIS—“[t]he NEPA and forest planning processes must be integrated.”⁴⁴³ As an example, according to the *Forest Service Handbook*, the assessments of forest conditions required by the 2012 Planning Rule should be used as the descriptions of the affected environment required for the plan EIS.⁴⁴⁴ The descriptions of the affected environment within the plan EIS are subject to NEPA regulations that require professional and scientific integrity.⁴⁴⁵ These descriptions must be accurate, in sufficient detail, and based upon objectively the best available scientific information.⁴⁴⁶ According to CEQ guidance concerning the preparation of a management plan EIS, these descriptions are to include “enough detail” to allow independent reviewers “to understand and meaningfully consider” the factors involved in making a reasoned decision.⁴⁴⁷

440. *Id.* § 1502.1.

441. *See generally* Memorandum from the Council on Environmental Quality, Exec. Office of the President to the Heads of Federal Departments and Agencies (Dec. 18, 2014), https://obamawhitehouse.archives.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf [https://perma.cc/G6T8-QYUW] [hereinafter CEQ Memo].

442. 40 C.F.R. § 1508.9(a) (2017).

443. FS HANDBOOK, *supra* note 287, § 21.13.

444. *Id.*

445. 40 C.F.R. § 1502.24 (2017).

446. *See id.* §§ 1502.15, 1502.24.

447. CEQ Memo, *supra* note 441, at 33.

The agency directive to use the assessments of forest conditions in the proposed management plan as the descriptions of the affected environment in the EIS subjects the assessments of forest conditions to these NEPA requirements.⁴⁴⁸

NEPA regulations require that an EIS include discussion of means to mitigate the environmental impacts of the proposed agency action.⁴⁴⁹ This is a requirement to evaluate, in the EIS prepared for a management plan developed or revised under the 2012 rule, the proposed monitoring program, which, according to the rule, is a vital aspect of mitigation efforts.⁴⁵⁰ According to the rule, the monitoring program must be effective in assessing “progress toward achieving . . . the plan’s desired conditions or objectives.”⁴⁵¹ The monitoring program should allow responsible officials to adjust appropriately plan components or other plan content, if necessary.⁴⁵² The 2012 rule requires adaptive management.⁴⁵³ According to CEQ guidance, a management plan EIS provides the opportunity to incorporate mitigation commitments and monitoring strategies into agency planning at this strategic level, and to ensure their effectiveness.⁴⁵⁴ The evaluation of proposed monitoring within the plan EIS is subject to NEPA regulations requiring thorough, accurate, and well-reasoned analysis, using objectively the best available scientific information, not qualified in terms of agency judgment.⁴⁵⁵

The requirement within the 2012 Planning Rule to evaluate a proposed management plan within an EIS affects virtually every aspect of forest planning, including development of the monitoring program. The 2012 rule provides conservation mandates for federally listed and other at-risk species that must be satisfied in forest planning,⁴⁵⁶ and a “hard look” at the

448. See FS HANDBOOK, *supra* note 287, § 21.13.

449. 40 C.F.R. §§ 1502.14(f), 1502.16(h) (2017).

450. 36 C.F.R. § 219.12(a) (2017).

451. *Id.* § 219.12(a)(2).

452. *Id.* § 219.12(a)(1).

453. Preamble 2012 Rule, *supra* note 20, at 21,167.

454. CEQ Memo, *supra* note 441, at 35–37.

455. 40 C.F.R. §§ 1502.1, 1502.24 (2017); *see also* CEQ Memo, *supra* note 441, at 32.

456. See 36 C.F.R. §§ 219.1, 219.9(b) (2017); Preamble 2012 Rule, *supra* note 20, at 21,162.

environmental impacts of a proposed management plan must include an evaluation of whether these mandates have been met. This is essential, according to CEQ guidance, for a “sufficient discussion of the relevant issues” and “a reasoned choice among alternatives.”⁴⁵⁷ As disclosed within the plan EIS, a proposed plan must provide for the forest’s effective or meaningful contribution to the recovery of federally listed species, and toward improving the status of proposed and candidate species with the desired result of avoiding federal listing.⁴⁵⁸ In addition, the plan must provide the conditions necessary to maintain within the forest viable populations of species of conservation concern, or at least provide for the forest’s effective or meaningful contribution toward maintaining range-wide viability.⁴⁵⁹ The need to satisfy these mandates effectively constrains those plan components that provide for the management of ecosystems, watersheds, and habitats; those components that provide for the management of water sources (lakes, streams, wetlands) and riparian areas; any fine-filter components that specify further efforts to manage these species; and those components that specify the monitoring program. As mentioned, virtually every aspect of national forest management is involved in satisfying these conservation mandates.

The requirement to evaluate a proposed management plan within an EIS subjects virtually every aspect of a proposed plan to the constraints that come with the need to document—under NEPA regulations requiring professional and scientific integrity, and accurate scientific analyses—that the conservation mandates presented by the 2012 rule concerning at-risk species have indeed been met. As mentioned, the rule’s preamble acknowledges the importance of historic (pre-settlement) conditions for conserving native biodiversity in the national forests.⁴⁶⁰ The Forest Service is compelled to rely on objectively the best available scientific information in the development of a management plan in order to justify appropriately the conclusions required in the plan EIS.⁴⁶¹ More

457. CEQ Memo, *supra* note 441, at 33.

458. 36 C.F.R. §§ 219.9(b)(1), 219.19 (2017); FS HANDBOOK, *supra* note 287, § 23.13b.

459. 36 C.F.R. § 219.9(b)(1)–(2) (2017).

460. See Preamble 2012 Rule, *supra* note 20, at 21,212.

461. 40 C.F.R. §§ 1500.1(b), 1502.1, 1502.24 (2017).

specifically, the Agency is compelled to rely on approved recovery plans for those plan components concerning federally listed species, and on the relevant conservation strategies and agreements for those components concerning proposed and candidate species—sources that presumably are based on the best available scientific information.⁴⁶²

At the individual project level, the Agency is compelled, under the 2012 rule, to include within a project EA or EIS an evaluation of project impacts on federally listed species, proposed and candidate species, and species of conservation concern.⁴⁶³ This is required for a full and fair discussion, or a sufficient analysis, of project impacts (a “hard look”), and to ensure consistency with the management plan.⁴⁶⁴ Agency analyses of project impacts on these at-risk species are subject to NEPA regulations requiring thorough, accurate, and well-reasoned analyses, using objectively the best available scientific information.⁴⁶⁵ Descriptions of the affected environment must be accurate and in sufficient detail.⁴⁶⁶

The key to effective biodiversity conservation in the national forests, again, is to ensure that the conservation mandates within the 2012 rule concerning federally listed species, proposed and candidate species, and species of conservation concern are genuinely met, both at the management plan and individual project levels. NEPA and its implementing regulations play an essential role, removing biodiversity conservation in the national forests from the discretion granted the Agency within the 2012 rule to determine which scientific information is the most accurate and relevant for forest planning.⁴⁶⁷ The requirement to evaluate a proposed plan within an EIS renders ineffective as policy the highly qualified scientific information requirement within the 2012 rule.⁴⁶⁸ As the Agency complies with its conservation mandates concerning at-risk species, at both the management plan and individual project levels, by means of impact analyses that

462. *Id.*

463. 36 C.F.R. § 219.9(b)(1) (2017).

464. 40 C.F.R. §§ 1502.1, 1508.9(a) (2017); 36 C.F.R. § 219.15(b) (2017).

465. 40 C.F.R. § 1500.1(b) (2017); *see also id.* §§ 1502.1, 1502.24, 1508.9(a).

466. *Id.* §§ 1502.15, 1502.24.

467. 36 C.F.R. § 219.3 (2017).

468. *Id.*

satisfy NEPA regulations, the balance of interests in the national forests will become less skewed toward resource provision and more truly equitable. We can expect that the forests will gradually return to more natural or historic conditions.

It should be mentioned that the courts tend to defer to Forest Service decisions concerning which scientific studies to use, how to interpret these studies, and how to analyze impacts. Such deference is supported by legal precedent.⁴⁶⁹ In response to the proposed Rim Fire project, citizen organizations filed a legal complaint alleging violations of NEPA regulations.⁴⁷⁰ In *Center for Biological Diversity v. Skalski*, the courts sided with the Agency.⁴⁷¹ In spite of numerous difficulties in the project EIS—including failure to adequately consider relevant studies, failure to consider scientists' recommendation to avoid salvage logging within 1.5 kilometers of spotted owl nests, and the anecdotal support for conclusions concerning viability—the courts deferred to the Agency's use of science and its analysis of impacts.⁴⁷² The courts accepted that the Agency provided reasonably thorough analyses and that its conclusions were reasonably well justified.⁴⁷³

On the other hand, in *Earth Island Institute v. United States Forest Service*—an earlier Sierra Nevada salvage logging case—the Ninth Circuit deliberated in considerably more detail and sided with the plaintiffs.⁴⁷⁴ In the court's opinion, Judge William Fletcher discusses the high level of deference owed to the Agency's use of scientific information.⁴⁷⁵ Citing previous Ninth Circuit opinions, Judge Fletcher writes that “[a]gencies have wide discretion in assessing scientific evidence”⁴⁷⁶ “Because analysis of scientific data requires a

469. See, e.g., *Earth Island Inst. v. U.S. Forest Serv. (Earth Island II)*, 442 F.3d 1147, 1160 (9th Cir. 2006) (discussing the deference owed to the Forest Service's use of science).

470. Ctr. for Biological Diversity Complaint, *supra* note 4.

471. Ctr. for Biological Diversity v. Skalski, 61 F. Supp. 3d 945 (E.D. Cal. 2014), *aff'd*, 613 Fed. Appx. 579 (9th Cir. 2015).

472. *Id.* at 955–60, *aff'd*, 613 Fed. Appx. 579, 580–81.

473. *Id.*

474. *Earth Island II*, 442 F.3d at 1177–78.

475. *Id.* at 1160.

476. *Id.*

high level of technical expertise,” he writes (quoting), “courts must defer to the informed discretion of the responsible federal agencies.”⁴⁷⁷ But “[a]t the same time, courts must independently review the record in order to satisfy themselves that the agency has made a reasoned decision based on its evaluation of the evidence.”⁴⁷⁸ Agencies are required to “take a hard look at the issues . . .,” the judge writes.⁴⁷⁹ In this case, the court examined in close detail the Forest Service’s presentation and use of tree mortality data, and found that the Agency was proposing to salvage log an excessive volume of burned timber. This would result in impacts on California spotted owls that were not adequately analyzed in the project EIS.⁴⁸⁰ Furthermore, ignoring relevant scientific studies, the Agency proposed to conduct salvage logging in potentially suitable owl habitat.⁴⁸¹ The court concluded that the Agency did not take the required “hard look” at project impacts on spotted owls, in violation of NEPA regulations.⁴⁸²

Although courts tend to defer to agency judgment concerning analyses of impacts and use of scientific information, courts accept responsibility to review impact analyses and use of scientific information in light of NEPA regulations.⁴⁸³ This is possible by virtue of the unqualified requirements presented within these regulations. Again, “full and fair discussion,” “sufficient evidence and analysis,” “professional integrity,” and “scientific integrity” are ambiguous, but these expressions are understood objectively, not in terms of agency judgment. According to the district court in *Center for Biological Diversity*, a full and fair discussion of project impacts—a “hard look”—need not include a detailed viability analysis, with exact numbers of individuals required for a viable population, as demanded by the plaintiffs.⁴⁸⁴ The court cited a previous Ninth Circuit opinion, according to which the Forest Service

477. *Id.* (quoting *Earth Island Inst. v. U.S. Forest Serv. (Earth Island I)*, 351 F.3d 1291, 1301 (9th Cir. 2003)).

478. *Id.* (quoting *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 378 (1989)).

479. *Id.* (quoting *Earth Island I*, 351 F.3d at 1301).

480. *Id.* at 1166–67, 1172.

481. *Id.* at 1172–73.

482. *Id.*

483. *See, e.g., id.* at 1160.

484. *Ctr. for Biological Diversity v. Skalski*, 61 F. Supp. 3d 945, 960 (E.D. Cal. 2014), *aff’d*, 613 Fed. Appx. 579 (9th Cir. 2015).

should not be restricted to one particular type of proof.⁴⁸⁵ In *Earth Island Institute*, the Ninth Circuit declared that the Forest Service may not ignore a published scientific study merely for the reason that it is a preliminary study.⁴⁸⁶ The courts are gradually providing legally accepted interpretations of NEPA regulations concerning use of scientific information and the “hard look” requirement.⁴⁸⁷

Finally, Schultz and other experts have pointed out that, under the 2012 Planning Rule, declining native species in the national forests may continue to decline to the point that they are in danger of extinction before any federal intervention is required and special protections can be put into place under the ESA.⁴⁸⁸ According to the rule’s preamble, it is expected that if the required coarse-filter approach to biodiversity conservation is successful, most existing native species will be maintained at the level of viable populations.⁴⁸⁹ The fine-filter approach, if required, is specific to just those species in the specified categories.⁴⁹⁰ Given that a native species is in decline but is not federally listed, has not been proposed or is a candidate for listing, and has not been designated a species of conservation concern, the 2012 rule provides no special mechanism for its protection.⁴⁹¹

As defined within the 2012 rule, a “species of conservation concern” is a species that is present in the national forest, is not federally listed, has not been proposed or is a candidate for listing, and the Regional Forester has determined that

485. *Id.* (citing *Lands Council v. McNair*, 537 F.3d 981 (9th Cir. 2008)).

486. *Earth Island II*, 442 F.3d at 1172.

487. There is an extensive literature on this topic. *See generally, e.g.*, Loretta V. Chandler, *Taking the “Hard Look”: 9th Circuit Review of Forest Service Actions Under NEPA, NFMA, and NHPA*, 4 GREAT PLAINS NAT. RESOURCES J. 204 (2000); William Griffin, *NEPA and the Roan Plateau: Forcing the Bureau of Land Management to Take a Hard Look*, 40 B.C. ENVTL. AFF. L. REV. 553 (2013); Devin Kirby, *What is the “Hard Look” That the Ninth Circuit is Looking for When Reviewing Forest Service Actions Under NEPA?: Native Ecosystems Council, et al v. United States Forest Service, et al*, 10 MO. ENVTL. L. & POL'Y REV. 213, 213 (2003) (“The Ninth Circuit has exhibited different levels of deference to the Forest Service . . .”).

488. Schultz et al., *supra* note 6, at 432.

489. Preamble 2012 Rule, *supra* note 20, at 21,212, 21,214, 21,217.

490. 36 C.F.R. § 219.9(b) (2017); Preamble 2012 Rule, *supra* note 20, at 21,212, 21,214, 21,217.

491. 36 C.F.R. § 219.9(b) (2017); Preamble 2012 Rule, *supra* note 20, at 21,212, 21,214, 21,217.

substantial concern over its viability in the forest is indicated by the best available scientific information.⁴⁹² As this expression is defined, whether or not a species receives the designation “species of conservation concern” is ultimately a matter of the Regional Forester’s judgment. The list of species of conservation concern is to be included within a newly developed or revised management plan.⁴⁹³

Yet if the best available scientific information indicates substantial concern over the viability of a native species within a national forest, and this species may be negatively affected by planned agency actions, then this must be disclosed in the EIS prepared for the newly developed or revised management plan. Under NEPA regulations, in the management plan EIS the Forest Service must take a hard look at the impacts of planned agency actions, and not minimize adverse side effects.⁴⁹⁴ According to CEQ guidance, within the plan EIS the Agency must provide “sufficient discussion of the relevant issues” to allow a hard look, and “a reasoned choice among alternatives.”⁴⁹⁵ NEPA regulations require use of objectively the best available scientific information.⁴⁹⁶ The Agency is compelled within the plan EIS to consider the relevant scientific information and acknowledge the possible decline and loss of *any* native species as a result of planned actions, regardless of whether a species is federally listed or has been proposed for listing. The Regional Forester is compelled, then, to designate as a species of conservation concern any native species present in the forest that is not federally listed, has not been proposed or is a candidate for listing, the continued viability of which in the forest is *actually of substantial concern* according to the best available scientific information, as disclosed in the plan EIS.

Of course, for some species it may be arguable whether substantial concern over viability in the forest is actually indicated by the best available scientific information. Yet the discretion granted the Regional Forester by the 2012 rule in the designation of these species is effectively constrained by

492. 36 C.F.R. § 219.9(c) (2017).

493. *Id.* § 219.7(c)(3).

494. *See* 40 C.F.R. §§ 1500.1(b), 1502.1, 1502.24 (2017).

495. CEQ Memo, *supra* note 441, at 33.

496. *See* 40 C.F.R. §§ 1500.1(b), 1502.1, 1502.24 (2017).

NEPA regulations requiring that, within the plan EIS, the Agency take a hard look at the impacts of planned actions, with use of objectively the best available scientific information.⁴⁹⁷ Failure to properly designate a species for which substantial concern over viability is indeed indicated may fairly be challenged as “arbitrary, capricious, or an abuse of discretion” under the Administrative Procedure Act.⁴⁹⁸ Again, as suggested by the preamble, the intent behind the 2012 Planning Rule is to provide native species with effective conservation efforts.⁴⁹⁹ The intent is not to drop native species from such efforts. That declining species may “slip between the cracks,” and face extinction prior to ESA protections being put into place, is not as serious a problem if citizens and the courts are willing to review agency designations in light of the management plan EIS and the relevant science.

IX. CONCLUSION

As the Forest Service practices biodiversity conservation in the national forests, the levels of protection provided native species are adjusted to fit the provision of desired levels of timber, grazing range, outdoor recreation, and other required forest products and services. Influenced by the views of its founder, Gifford Pinchot, the Forest Service has a long history of bringing diverse interests in a national forest together to achieve the desired balance, which involves compromise on all sides, ultimately for the good of American society. The 2012 Planning Rule represents an attempt to standardize and improve this agency practice, with indications of discretion and allowed compromises in species protections where necessary to achieve the appropriate balance. The 2012 rule requires an equitable, or fair and impartial balance of ecological, social, and economic interests in each forest, with one type of interest not considered a priority over the others.⁵⁰⁰

As argued, the conservation mandates presented by the 2012 rule concerning federally listed and other at-risk species are actually quite strong and apply at both the management

497. *Id.*

498. 5 U.S.C. § 706(2)(A) (2012).

499. See Preamble 2012 Rule, *supra* note 20, at 21,217–18.

500. 36 C.F.R. § 219.8 (2017); Preamble 2012 Rule, *supra* note 20, at 21,177, 21,211.

plan and individual project levels.⁵⁰¹ The Agency is required to provide within each management plan the conditions necessary to contribute to the recovery of federally listed species, conserve proposed and candidate species for federal listing, and maintain viable populations of species of conservation concern.⁵⁰² Virtually every aspect of national forest management is involved in satisfying these conservation mandates, including the management of ecosystems, watersheds, and habitats, and the Agency is left with more limited discretion and management flexibility. The 2012 rule provides a mix of strong biodiversity provisions with agency discretion and flexibility in meeting these requirements and fulfilling other agency obligations.

The key to effective biodiversity conservation in the national forests is to genuinely satisfy the conservation mandates concerning federally listed and other at-risk species, and NEPA plays an essential role. The 2012 Planning Rule must be applied in the context of NEPA—“our basic national charter for protection of the environment.”⁵⁰³ NEPA regulations remove biodiversity conservation in the national forests from the high levels of discretion and subjectivity allowed the Agency by the 2012 rule, including, most notably, in the use of scientific information and in the designation of species of conservation concern. This gives the strong conservation mandates concerning at-risk species the strength they have. We must insist on strict adherence to NEPA regulations that require, within an EA or EIS, thorough, accurate, well-reasoned analyses, with use of objectively the best available scientific information.⁵⁰⁴

The 2012 Planning Rule, in the context of NEPA regulations, provides a potentially effective means of conserving native biodiversity in the national forests. Citizens and citizen organizations must continue to play an active role. The 2012 rule encourages citizens to participate in the development and revision of management plans.⁵⁰⁵ According to the rule’s preamble, “[t]he outcomes of public participation

501. 36 C.F.R. § 219.9 (2017).

502. *Id.*

503. 40 C.F.R. § 1500.1 (2017).

504. *Id.* §§ 1500.1(b), 1502.1, 1502.24, 1508.9(a).

505. 36 C.F.R. § 219.4 (2017).

can include a greater understanding of interests underlying the issues, a shared understanding of the conditions on the plan area and in the broader landscape”⁵⁰⁶ Much depends on exactly how the Agency attempts to satisfy the conservation mandates concerning at-risk species within plan components that specify the management of ecosystems, watersheds, and habitats; the management of water sources and riparian areas; development of the monitoring program; and other aspects of forest management.

Here is an example of the importance of citizen input. Schultz and others argue that trigger points, or thresholds for action, are necessary for proper monitoring and mitigation, and they fault the 2012 rule for failing to require the use of triggers in monitoring.⁵⁰⁷ Under the 2012 rule, the use of such devices is left to agency discretion.⁵⁰⁸ According to the preamble, “[t]he rule does not preclude the inclusion of triggers.”⁵⁰⁹ The 2012 rule requires the development of robust monitoring strategies. The monitoring program for each national forest must be responsive to the desired conditions and objectives stated in the management plan.⁵¹⁰ Citizens should urge the Agency to adopt triggers or action thresholds—the Agency is open to their use—where such devices would not be too complex or time consuming, and can be developed in accordance with the best available scientific information.⁵¹¹ These are criteria for the use of triggers mentioned in the preamble.⁵¹²

Many citizens, and citizen organizations, possess enormous insight and expertise concerning public lands and native species.⁵¹³ An active role by the public in forest planning is consistent with Pinchot’s management philosophy. Pinchot writes: “National forests are made for and owned by the

506. Preamble 2012 Rule, *supra* note 20, at 21,194.

507. Schultz et al., *supra* note 6, at 432, 438.

508. Preamble 2012 Rule, *supra* note 20, at 21,231.

509. *Id.*

510. 36 C.F.R. § 219.12(a)(2) (2017).

511. *Id.*

512. Preamble 2012 Rule, *supra* note 20, at 21,231.

513. A good example is Georgia ForestWatch. This organization has submitted lengthy and thoughtful comments on a proposed forest thinning and restoration project in the Chattahoochee National Forest in north Georgia. *See generally* Georgia ForestWatch et al., *supra* note 384.

people.”⁵¹⁴ “[T]he people must know all about them,” he adds, “and must take a very active part in their management.”⁵¹⁵ “What the people as a whole want will be done.”⁵¹⁶ We must keep in mind that a management plan represents an attempt to fit many diverse interests together into a unified system that is manageable, consistent with agency authority and the inherent capabilities of the forest, and within the Agency’s fiscal capacity.⁵¹⁷ We must all accept compromise to some extent. “There must be hearty cooperation from everyone,” Pinchot writes.⁵¹⁸ The Forest Service, citizens, and the courts must come to understand the interesting mix of strong biodiversity provisions and agency discretion found within the 2012 rule.

514. PINCHOT, *supra* note 199, at 25.

515. *Id.*

516. *Id.*

517. 36 C.F.R. § 219.1(g) (2017).

518. PINCHOT, *supra* note 199, at 25.