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The Mouse That Roared: How the National Forest Management Act Diversity of Species Provision is Changing Public Timber Harvesting

*Michael A. Padilla**

I.

INTRODUCTION

“The best laid schemes o’ mice an’ men”¹ When the poet Robert Burns wrote this now-famous line, he obviously had not considered the natural resource/land use plans for the national forests developed pursuant to the National Forest Management Act of 1976 (NFMA).² These plans dictate the uses, often competing and seemingly incompatible, to which the national forests may be put, such as commercial timber harvesting and wildlife protection. In passing the NFMA, Congress included a well-intentioned provision, 16 U.S.C. § 1604(g)(3)(B), which sought to protect the diversity of plant and animal life in the forests,³ yet did not specify the *means* of doing so.

Part I of this article introduces the main issues involving the diversity of species provision, while Part II provides an overview of the NFMA in general and the diversity provision in particular, addressing the case law and regulations which interpret it. Part III analyzes the case law specifically interpreting the diversity of species provision, and Part IV provides a conclusion.

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1. *To A Mouse*, in *THE COMPLETE WORKS OF ROBERT BURNS* (Allan Cunningham ed. 1873).

2. 16 U.S.C. § 1600 (1996).

3. 16 U.S.C. § 1604(g)(3)(B) (1996).

This article focuses on diversity⁴ cases from 1991 through 1996, a six-year period that ushered in a remarkable series of decisions addressing § 1604(g)(3)(B). Although several details of note remain to be resolved, the jurisprudence concerning this provision has apparently settled, with the Ninth Circuit in one camp and all other circuits in the other. Only now, after this six-year period, has the importance of the NFMA diversity requirement become clear.

Although we cannot know exactly how far Congress wanted to extend diversity protection, this article will show that Congress has nonetheless provided a *goal* which the forest planners must reach. However, the *means* by which to maintain diversity in the forests have become increasingly clear, much to the chagrin of the timber industry and the United States Forest Service (USFS).⁵ First, late-successional (old growth) forests must be preserved in order to meet the diversity mandate; second, controversial clearcutting harvest methods may still be used, but only where they protect diversity and are economically efficient (i.e. the benefits outweigh the costs). The courts have shown that these means are indeed *necessary* for preserving diversity.

The judicial system has specified the measures that the USFS must take to protect diversity, developing a standard that affords more protection to plants and wildlife than the "back against the wall" absolute limits⁶ that trigger when a species is listed under the Endangered Species Act (ESA).⁷ Although the USFS has drawn frequent criticism for apparently favoring timber sales over other resource uses, in all fairness, the agency usually has attempted to protect wildlife and plant diversity (the most prominent exception being in the northern spotted owl litigation). The main points of contention are a matter of degree (i.e. whether more must be done to protect diversity, specifically by preserving

4. The term "diversity" as used in this article refers to animal and plant species diversity.

5. As Professor Wilkinson had observed in the mid-1980's, before much of the litigation over the diversity provision had begun, "[S]ection 6(g)(3)(B) . . . require[s] the Forest Service to look at the forest as an ecological whole and to ensure that, over time, the forest is not converted into a 'tree farm.'" Charles F. Wilkinson & H. Michael Anderson, *Land and Resource Planning in the National Forests*, 64 OR. L. REV. 1, 173 (1985).

6. "At the present time, individual species protection serves as a proxy for biodiversity protection, but like all proxies, it is crude." A. Dan Tarlock, *Local Government Protection of Biodiversity: What is its Niche?*, 60 U. CHI. L. REV. 555, 565 (1993).

7. 16 U.S.C. § 1531 (1996).

old growth forests) and over the continued reliance on clearcutting as a primary cutting method.

II. OVERVIEW

With the passage of the NFMA, Congress sought to reduce the unbridled discretion which the Forest Service historically had possessed in managing national forests.⁸ The chief instrument Congress decided to use to guide the USFS was the Land Resource Management Plan (LRMP), a comprehensive document the Forest Service develops for each national forest in the nation.⁹ The LRMPs bind the Service to a specific schedule of how to utilize the forest over a ten-to-fifteen-year period. These plans are taken seriously by the Service, because they strictly bind its actions in a particular national forest.¹⁰ For the Forest Service to act in a way that “significantly” departs from the plan, it must follow a formal amendment process.¹¹

The NFMA is a remarkable statute in all that it seeks to achieve and in its consideration of several other touchstone environmental laws. First, the full disclosure procedures of the National Environmental Policy Act (NEPA)¹² are incorporated into the Forest Service’s development of land use plans.¹³ NEPA requires the preparation of an Environmental Impact Statement (EIS), specifying the alternatives that were available before the Forest Service chose the LRMP. When actually “executing” the plan, a relatively less thorough Environmental Assessment must be made for each timber sale. Additionally, the Clean Water Act¹⁴ is implicitly considered in the general watershed resource provisions of the NFMA, as is the Wilderness Act¹⁵ (relative to conversion of forest lands to wilderness areas), and the Endangered Species Act (relative to plant and animal diversity and management indicator species).

8. Prior to passage of the NFMA in 1976, the Forest Service had managed federal forest lands under the Organic Act of 1897, 16 U.S.C. § 476 (repealed 1976). The Organic Act granted the Service very wide latitude in managing the lands under its control.

9. 16 U.S.C. § 1604(a) (1996).

10. 16 U.S.C. § 1604(i) (1996).

11. 16 U.S.C. § 1604(f)(4) (1996).

12. 42 U.S.C. § 4321 (1996).

13. 16 U.S.C. § 1604(g)(1) (1996).

14. 33 U.S.C. § 1251 (1996).

15. 16 U.S.C. § 1131 (1996).

The NFMA also limits the uses to which forest lands may be put. It expressly incorporates the Multiple-Use Sustained-Yield Act of 1960 (MUSYA),¹⁶ which contains a provision critical to the diversity issue, declaring the "policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes."¹⁷ The NFMA expressly endorses MUSYA's recitation of possible uses and adds a sixth use to be considered: wilderness.¹⁸ Now, the Forest Service *must* manage each of these named resources *equally*; that is, timber cannot legally take overriding precedence over the other resources,¹⁹ especially, as relevant here, wildlife and fish resources. Thus, the term "multiple use" has been employed to describe the six different purposes national forest lands must serve. In defining "multiple use," the MUSYA specifically addresses the type of balance required of the Forest Service between the different uses given above. They must be:

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 . . . ; that *some land will be used for less than all of the resources*; . . . with consideration being given to the relative values of the various resources, and *not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output*.²⁰

The above passage becomes critical in the context of diversity, as it reveals Congress' intent to have the national forests managed not just for a "profit" by focusing on economically-quantifiable resources such as timber and range, but also to equally consider difficult-to-value resources such as the watershed and wildlife. Also, 16 U.S.C. § 531 puts the Forest Service on notice that a situation may arise where not every acre of a national forest can be logged (i.e., that some uses in an area of the forest may be precluded to foster the other resources). The NFMA is quiet on how far the Service must go in considering each of the non-quantifiable resources; therefore, the courts have had to delineate

16. 16 U.S.C. § 528 (1996). Prior to passage of the NFMA, the courts and the Forest Service largely considered MUSYA to be an unenforceable policy statement rather than a strict directive to the USFS to *do* a particular thing, but in the context of the NFMA this earlier statute takes on a new light.

17. 16 U.S.C. § 528 (1996).

18. 16 U.S.C. § 1604(e)(1) (1996).

19. 16 U.S.C. § 531 (1996).

20. 16 U.S.C. § 531 (1996) (emphasis added).

more concrete standards.²¹ The engine which has propelled the development of these clearer diversity standards has been the NFMA's diversity provision rather than the MUSYA, which is still regarded mostly as a silent partner.²²

As to the specific diversity requirements of the NFMA, the critical provision commands the USFS to promulgate regulations which will govern land management plans for achieving several goals of the NFMA, among them, to:

provide for diversity of plant and animal communities *based on the suitability and capability of the specific land area* in order to meet overall multiple-use objectives, *and* within the multiple-use objectives of a land management plan adopted pursuant to this section, provide, where appropriate, to the degree practicable, for steps to be taken to preserve the diversity of tree species similar to that existing in the region controlled by the plan.²³

This provision addresses two aspects of diversity. First, the requirement of providing for diversity of "plant and animal communities" can only be relaxed where the land is not suitable, or where one of the other five competing uses must take precedence for that area of the forest. Second, the section addresses diversity of tree species,²⁴ giving a less stringent standard requiring only the level of diversity that traditionally exists in that area, and allowing for a loosening of that requirement when attainment of it is impracticable. The courts have not interpreted what "practicable" means nor how much discretion the provision actually provides the USFS.

The Forest Service has recognized its responsibility to protect diversity in its regulations. Specifically, the Service requires that, in the planning process, "diversity of plant and animal communities and tree species" be provided for "consistent with the overall multiple-use objectives of the planning area," and requires the agency to maintain a databank of species inventory for the purpose of evaluating diversity.²⁵ The Service has defined diversity as "[t]he distribution and abundance of different plant and animal communities and species within the area covered by a

21. *See, e.g., Seattle Audubon Soc'y v. Lyons*, 871 F. Supp. 1291 (W.D. Wash. 1994). *See infra* Part III.

22. *See, e.g., National Wildlife Fed'n. v. United States Forest Serv.*, 592 F. Supp. 931, 938 (D. Or. 1984); *Sierra Club v. Hardin*, 325 F. Supp. 99, 123 (D. Alaska 1971).

23. 16 U.S.C. § 1604(g)(3)(B) (1996) (emphasis added).

24. The intent of this clause is to limit the use of forest type conversions and prohibit monoculture, i.e., "tree farm" conditions. *Wilkinson, supra* note 5, at 173.

25. 36 C.F.R. § 219.26 (1996).

land and resource management plan.”²⁶ The critical substantive regulatory mandate that directly interprets the NFMA’s diversity provision requires that:

[m]anagement prescriptions, where appropriate and to the extent practicable, shall preserve and enhance the diversity of plant and animal communities . . . so that it is *at least as great as that which would be expected in a natural forest* and the diversity of tree species similar to that existing in the planning area. Reductions in diversity of plant and animal communities and tree species from that which would be expected in a natural forest, or from that similar to the existing diversity in the planning area, may be prescribed *only where needed to meet overall multiple-use objectives*.²⁷

Remarkably, no court has decided whether this regulation is an acceptable interpretation of the NFMA diversity provision, a claim that one might expect of timber-dependent parties. Also, the Forest Service has never sought to change this regulation. Both of these facts strongly suggest that the NFMA diversity provision indeed commands the preservation of existing species diversity and its required habitat.²⁸ This mandate can only be abridged when another resource use takes precedent *for that area* of the forest, in keeping with a balance of the six multiple uses. Finally, the Service has acknowledged by its regulations²⁹ that preserving a sufficient quantum of habitat is a major component of maintaining species (as years of ESA litigation have shown).³⁰

26. 36 C.F.R. § 219.3 (1996).

27. 36 C.F.R. § 219.27(g) (1996) (emphasis added).

28. The Service has made the statutory diversity mandate even clearer:

Fish and wildlife habitat 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.

36 C.F.R. § 219.19 (1996) (emphasis added). *See also* 36 C.F.R. § 219.27(a)(5)-(6) (1996).

29. This regulation requires that:

Fish and wildlife habitat shall be managed to maintain viable populations of existing . . . species in the planning area. . . . In order to ensure 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.

36 C.F.R. § 219.19 (1996) (emphasis added).

30. Professor Wilkinson noted that § 1604(g)(3)(B) “requir[es] that the diversity of forest species and ecosystems be maintained and . . . particular emphasis [be

However, as alluded to earlier,³¹ litigation has centered on the *degree* to which diversity must be protected against competing uses such as timber harvesting.

A. *Judicial Interpretation of the NFMA*

The path from 1976, when the NFMA was born, to the point where the courts could finally review a national forest plan on its merits has been a long one. Following the Act's command³² to promulgate numerous regulations, the Forest Service finally had these regulations in place by 1980. Then came the lengthy draft EIS process³³ and development of draft LRMPs for each national forest,³⁴ taking five to six years for most forests. Following the requisite public comment period,³⁵ final EISs and LRMPs for most forests were issued by 1989. Although the direction the agency had chosen (within the NFMA's substantive guidelines) had obviously been disclosed with the passage of each final LRMP, the Forest Service formally handed down Records of Decision (ROD) for each final EIS. Each ROD officially declared which alternative plan described in the EIS the agency had selected. Most were issued by 1989.

Only then was the stage set for judicial review of the LRMPs for their substantive compliance with the NFMA diversity provision. Plaintiffs protesting the plans (both environmentalists and timber companies) had to run the gauntlet of legal barriers which might prevent review on the merits, such as exhaustion of administrative remedies and standing.³⁶ Also, claims were frequently sidetracked by such peripheral issues as the propriety of injunctions, interlocutory appeals of injunctions, and intervenor appeals,³⁷ which further postponed review of plans on the merits for many of the cases discussed below until 1994.

Review of claims of NFMA violations has been almost exclusively within the domain of the federal circuit and district courts. The Supreme Court has reviewed only one plan, that for the Six

placed] on the habitat needs of diminishing species." Wilkinson, *supra* note 5, at 295.

31. See *supra* Part I.

32. 16 U.S.C. § 1604(g) (1996).

33. 16 U.S.C. § 1604(g)(1) (1996).

34. 16 U.S.C. § 1604(k) (1996).

35. 16 U.S.C. § 1604(d) (1996).

36. See, e.g., *infra* Part III (discussing Seattle Audubon Soc'y v. Evans, 952 F.2d 297, 298-99 (9th Cir. 1991) and related cases).

37. *Id.*

Rivers National Forest in California.³⁸ In this case, the Court examined only the First Amendment rights of adjacent Indian tribes, concerning the Forest Service's planned harvesting of timber in an area of the forest the tribes considered holy.

The Court did not address the standard of review for forest plans, and the lower court examined only the standard for EISs under NEPA.³⁹ The seminal *Rio Grande*⁴⁰ case⁴¹ was the first to declare the standard of review for LRMPs (and the first to review a final plan on its merits), finding that the Administrative Procedure Act's "arbitrary and capricious" standard⁴² for reversing agency action applied.⁴³ The district court found that, as the NFMA had no specific provision for judicial review, the APA applied by default.⁴⁴ To date, no subsequent case has disputed this standard.

Because the Supreme Court has not provided guidance for the lower courts in deciding just how far the USFS must go to "provide for diversity" as required by the NFMA, the rulings of the various circuit courts of appeal and district courts have covered the spectrum, from general deference to the agency as "non-arbitrary action," to rejection of management plans by meticulous judicial review of LRMPs. Most of these cases have arisen in the west (more forests), and, with the exception of *Rio Grande*, have been decided since 1993.

B. *Factors Affecting Diversity Provision Analyses*

This section examines the "front lines": the cases which have delineated the reach of the NFMA's diversity provision. Several factors can be discerned from these complex cases (with equally complex procedural histories, as noted above) which affect the reach of § 1604(g)(3)(B). First, the specific agency action con-

38. *Lyng v. Northwest Indian Cemetery Protective Ass'n*, 485 U.S. 439 (1988).

39. *Northwest Indian Cemetery Protective Ass'n v. Peterson*, 795 F.2d 688, 695-6 (9th Cir. 1986), *rev'd* 485 U.S. 439 (1988).

40. As many of the cases cited in this article involve common named parties (e.g., the Sierra Club or Forest Chief F. Dale Robertson), cases will generally be referred to in the text by the name of the national forest involved.

41. *Citizens For Env'tl. Quality v. United States*, 731 F. Supp 970 (D. Colo. 1989) (*Rio Grande*).

42. 5 U.S.C. § 706(2)(A) (1996). The Supreme Court has interpreted this section to mean whether the agency has "consider[ed] . . . all the relevant factors and whether there has been a clear error of judgment." *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 416 (1971).

43. *Citizens for Env'tl. Quality*, 731 F. Supp. at 983.

44. *Id.*

tested is important, that is, whether the plaintiff is contesting the LRMP itself, or whether *implementation* of the plan (such as a timber cut dictated by the LRMP) is being contested.⁴⁵ Second, the presence of late-successional (old growth) stands⁴⁶—likely the habitat of either rare or “hard-to-relocate” species—will affect the Forest Service’s ability to maintain the diversity that is often found naturally-occurring *only* in that specific old growth area. The third factor is whether a claim of violation of the ESA has been made, which is closely tied to the second factor, but focuses more closely on just one species. The final factor is whether clearcutting is the dominant method of timber harvest, since it significantly changes the profile of species which can inhabit the area after the cut.

The *Rio Grande* case⁴⁷ was the first to analyze in detail an LRMP’s substantive compliance with the National Forest Management Act. The NFMA diversity subsection was not at issue, but the court discussed at length the policy considerations behind the NFMA and the fact that the Act *did* indeed command the USFS to change its policy of making timber harvesting the paramount objective. Judge Finesilver noted that the case brought into high relief the NFMA’s intent to “balanc[e] the nation’s legitimate economic needs with its limited natural resources . . . satisfying the nation’s need for timber. . . while preserving forest lands for the use of future generations.”⁴⁸

The main focus of *Rio Grande* was the NFMA’s restraint on clearcutting by the Forest Service. This harvest method is closely tied to the diversity issue presented by § 1604(g)(3)(B). Virtually no trees are left in an area that has been clearcut, dramatically

45. The circuits are divided over whether challenges to forest management plans under NFMA are justiciable when the government has yet to develop site-specific projects implementing the plan. Compare *Sierra Club v. Marita*, 46 F.3d 606, 610-14 (7th Cir. 1995), and *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1515-16 (9th Cir. 1992) (challenges are justiciable), with *Wilderness Soc’y v. Alcock*, 83 F.3d 386, 389-91 (11th Cir. 1996), and *Sierra Club v. Robertson*, 28 F.3d 753, 757-60 (8th Cir. 1994) (challenges are not justiciable).

46. Remarkably, the term “old-growth” has not been defined by statute or regulation; judicial opinions have largely taken the term for granted, possibly considering differences in definition to be a technical matter. One court has set forth a definition (at least for pine and spruce) borrowed from an LRMP: “Old growth is defined as . . . trees . . . 200 years or more in age with 2 or more snags per acre.” *Sierra Club v. United States Forest Serv.*, 878 F. Supp. 1295, 1315 (D.S.D. 1993) (*Black Hills I*) (citation omitted).

47. *Citizens For Envtl. Quality v. United States.*, 731 F. Supp. 970 (D. Colo. 1989) (*Rio Grande*).

48. *Id.* at 976.

changing the region's ability to sustain various plants and wildlife. In sum, animals dependent on wooded terrain would be forced to flee the denuded areas. In their place, different animals (such as deer) that could adapt to the range-like quality of the open areas would likely move in. Plants and animals would fill the vacuum created by the clearcut, but the original diversity of species *for that area* would be destroyed.

There are alternatives to clearcutting. Less dramatic methods include seed tree cutting (leaving isolated trees to seed the ground), and shelterwood cutting (leaving small groups of trees to shelter seedlings). However, all three of these methods—clearcutting, seed tree cutting, and shelterwood cutting, collectively labeled “even-aged management”—do not leave the amount of trees required to avoid the aforementioned shifting of species. A fourth cutting method, selection cutting, is “uneven-aged management,” in that it only “thins out” the trees, thus allowing existing species to continue to inhabit the area. However, clearcutting is preferred by timber harvesters as it has the lowest cost in terms of dollar expense per acre harvested.⁴⁹

Most significantly, *Rio Grande* held that the USFS must now employ comprehensive econometric analysis of the economic efficiency of timber sales (i.e. whether the combination of resource uses in a plan maximizes the present value net benefit to the public).⁵⁰ Finding there was agency precedent⁵¹ requiring justification of below-cost timber sales, the court remanded the LRMP, to let the Service justify why it should sell timber at a dollar loss.⁵² The administrative opinion reflected the need to consider uses other than timber production for the sake of sustaining timber-dependent communities, asking, “[i]s the timber program . . . actually the most effective way to achieve the *non-timber* multiple use objectives of the plan? To what extent can timber program costs be cut and/or revenues enhanced while still providing an appropriate level of non-timber multiple use objectives?”⁵³

49. This cost does not include difficult-to-quantify costs such as species reductions and aesthetic values that are external to the harvester's calculations.

50. *Citizens For Envtl. Quality*, 731 F.Supp. at 987.

51. *Id.* (quoting Decision Memorandum of USDA Deputy Assistant Secretary Douglas MacCleery to Forest Service Chief Max Peterson, Aug. 12, 1985). See also George Cameron Coggins et al., *Federal Public Land and Resources Law 674-76* (3d ed. 1993) (for the relevant portion of the administrative opinion known as the “MacCleery decision” or the “San Juan/GMUG decision” (for the forest then at issue)).

52. *Citizens for Envtl. Quality v. United States*, 731 F. Supp. 970, 988 (D. Colo. 1989) (*Rio Grande*).

53. *Id.* at 987 (emphasis added).

Thus, the use of econometric modeling must be employed if a below-cost timber sale is proposed, to justify how non-dollar benefits outweigh the readily-quantifiable or "accounting sheet" loss to the government. In practice, this means the Service would have to show that intangible benefits such as stability to local timber-dependent communities outweighs the dollar cost, *as well as* the intangible cost to aesthetic values and environmental costs such as effects on soil and watersheds. *Rio Grande* thus puts another constraint on timber harvests that directly affects diversity of species considerations, as the cost of a reduction in species must be considered when proposing a below-cost timber sale. Below-cost timber sales would still be permissible; however, the Service must more thoroughly consider why it has chosen to do so.

III.

DIVERSITY AT ISSUE

AT THE VANGUARD: THE NINTH CIRCUIT

Because the geographical areas covered by the Ninth Circuit contain two of the important factors critical in NFMA diversity claims (namely most of the old growth forest left in the United States, and several endangered species such as the northern spotted owl), one would expect that most litigation over § 1604(g)(3)(B) arises there. Indeed it has, with one of the most important diversity cases handed down involving old growth forests in Washington, Oregon and northern California. This case was also one of the most procedurally complex, with no less than *eight* reported opinions under various names. Proceeding chronologically, *Seattle Audubon Society v. Evans*⁵⁴ upheld a district court's injunction halting timber sales under an existing LRMP. The plan had not considered diversity adequately, nor considered the ESA listing of the spotted owl, a species that resides exclusively in old growth forests. The court held that the diversity protections of § 1604(g)(3)(B) still applied, even though now the Forest Service had the additional responsibility of facilitating owl habitat in its plan.⁵⁵ The court found that the USFS evidenced an understanding of this in its implementing regulations, noting that Forest Service regulations contain three major components: first, identification of habitat and objectives for the maintenance

54. 952 F.2d 297 (9th Cir. 1991).

55. *Id.* at 302.

of habitat for "indicator species,"⁵⁶ which *may or may not include* species listed under the ESA; second, provision for a "viable population" of existing species;⁵⁷ and finally, inclusion of measures aimed at prevention of habitat destruction for ESA species.⁵⁸ The Forest Service's stated position, however, was that, if the ESA designation eclipsed the NFMA, the Service would need to provide habitat only for *listed* species, rather than for *all* native vertebrate species residing in the planning area.⁵⁹ The court found an abuse of agency discretion in this reading and affirmed the lower court's injunction pending revision of the LRMP.

After the Forest Service revised its plan pursuant to the *Evans* court ruling, the agency Record of Decision amending the plan was contested in *Seattle Audubon Society v. Moseley*.⁶⁰ There, the Forest Service sought another creative interpretation of § 1604(g)(3)(B), arguing that because the *Evans* court ordered it to protect only the spotted owl, it could select a plan alternative (to those enumerated in the new EIS) which would protect that species but provide only a "medium probability" of continued viability to other vertebrate species.⁶¹ Such an alternative would likely destroy the viability of other species. Judge Dwyer reasoned that in light of its "historical context and overall purposes," the NFMA's diversity provision "confirms the Forest Service's duty to protect wildlife . . . [which] requires planning for the entire biological community—not for one species alone."⁶² Indeed, Professor Wilkinson commented in 1985 that § 1604(g)(3)(B) "requires Forest Service Planners to treat the wildlife resource as a controlling, co-equal factor in forest management and, in particular, as a substantive limitation on timber production."⁶³

After holding that the NFMA diversity provision commanded the Forest Service to protect the viability of all forest species, Judge Dwyer envisioned the outer limits of § 1604(g)(3)(B) and

56. 36 C.F.R. § 219.19(a)(1) (1996). Criteria for indicator species simply require that the species selected is representative of changes in population in response to USFS management activities. *Id.*

57. 36 C.F.R. § 219.19 (1996).

58. 36 C.F.R. § 219.27(a)(8) (1996).

59. *Evans*, 952 F.2d at 301.

60. 798 F. Supp. 1484 (W.D. Wash. 1992).

61. *Id.* at 1488.

62. *Id.* at 1489.

63. Wilkinson & Anderson, *supra* note 5, at 296.

its practical ramifications which Congress didn't express but this article seeks to reveal:

NFMA and the regulations direct that the forests be managed so as to preserve animal and plant communities. Millions of acres of national forest lands . . . do not consist of spotted owl habitat and are suitable for logging. . . . Congress's mandate for multiple uses, including both logging and wildlife preservation, *can be fulfilled if the remaining old growth habitat is left standing*; it cannot be if the old growth in any national forest is logged to the point where native vertebrate species cease to exist there.⁶⁴

Furthermore, the judge noted that existing wilderness areas were not enough to satisfy NFMA diversity requirements, and ESA protection⁶⁵ doesn't comprehensively protect an intertwined biological community, for which the NFMA "offers a last chance [for survival]."⁶⁶

With its LRMPs for the Washington, Oregon and northern California national forests rejected yet again, the USFS went back to the drawing board to comply with *Moseley*.⁶⁷ Revising the LRMPs to comply with *Moseley* and *Evans*, the agency found its management plans contested yet again (the plaintiffs not content to wait until an individual timber sale was proposed), in *Seattle Audubon Society v. Lyons*.⁶⁸ This time the Forest Service got it right. Judge Dwyer upheld the plan in the face of claims by environmentalist plaintiffs and timber interest intervenors that

64. *Moseley*, 798 F. Supp. at 1490 (emphasis added).

65. Besides ESA and wilderness area protections, if applicable, the Migratory Bird Treaty Act, 16 U.S.C. § 703 (1994) (MBTA), has begun to emerge as another tool with which to protect species (at least birds). Though the MBTA does not in and of itself provide for citizen enforcement of its provisions, the Administrative Procedure Act, 5 U.S.C. § 706(a)(2), "arbitrary and capricious" standard has been successfully employed. See, e.g., *Sierra Club v. Martin*, 933 F. Supp. 1559, 1564-66 (N.D. Ga. 1996). But see *Mahler v. United States Forest Serv.*, 927 F. Supp. 1559 (S.D. Ind. 1996).

66. Others have noted this fundamental limitation of ESA protection:

Biologists and environmentalists have begun to seriously question the efficacy of focusing on a single species when the real goal is to preserve the habitats in which these species live. Indeed, it is futile for the federal government and private individuals to invest in costly single species recovery programs while ignoring the fact that habitats are disappearing.

Julie B. Bloch, *Preserving Biological Diversity in the United States: The Case for Moving to an Ecosystems Approach to Protect the Nation's Biological Wealth*, 10 PACE ENVTL. L. REV. 175, 198-99 (1992).

67. In the interim, the USFS had appealed only the NEPA violation holding of *Moseley*, contending the EIS had adequately discussed why the agency didn't examine the current condition of the spotted owl. The court found the EIS inadequate. *Seattle Audubon Soc'y v. Espy*, 998 F.2d 699, 704 (9th Cir. 1993).

68. 871 F. Supp. 1291 (W.D. Wash. 1994).

the plan still violated various aspects of NFMA and NEPA, finding that the Service had now acted within its scope of discretion as granted by NFMA. Wryly, the judge noted that "any more logging sales than the plan contemplates would probably violate the laws."⁶⁹

So *what* kind of plan actually passes muster under § 1604(g)(3)(B)? The LRMPs for the forests within the spotted owl's range designate three main "partitions" to be made within each forest. First, the plan designates reserve areas where logging and other ground-disturbing areas are prohibited, protecting about 80% of the remaining late-successional forests from any harvesting.⁷⁰ The late-successional reserves equal about 7.4 million acres, out of a total of 15.6 million acres of national forest lands covered by the LRMP (not including wilderness areas or USFS administratively withdrawn areas). Second, a "matrix" (the court's label) of about 4 million acres is available for cutting, subject to NEPA and NFMA timber harvest requirements.⁷¹ Third, watershed conservation areas have been designated to conserve aquatic species, amounting to about 2.6 million acres.⁷² The remaining land is to be used as "adaptive management areas," essentially experimental forests located near affected communities as a laboratory for "new ways to achieve . . . economic goals."⁷³

Since the rejection of the previous LRMPs contested in *Moseley* and *Evans*, about 4 million more acres have been reserved to protect old-growth diversity.⁷⁴ The timber harvest levels given under the plan will total approximately 1 billion board feet per year, representing a 73% reduction from early 1980's levels, which Judge Dwyer characterized as unsustainable.⁷⁵

In his analysis, Judge Dwyer noted that "[g]iven the current condition of the forests, there is no way the agenc[y] could comply with the environmental laws *without* planning on an ecosystem basis."⁷⁶ The timber interest intervenors had contested this interpretation of NFMA, but the court found that comprehensive ecosystem management was appropriate under the multiple-use/

69. *Id.* at 1300.

70. *Id.* at 1305.

71. *Id.*

72. *Id.*

73. *Id.*

74. *Seattle Audubon Soc'y v. Lyons*, 811 F. Supp. 1291, 1305 (W.D. Wash. 1994).

75. *Id.* at 1305-06

76. *Id.* at 1313.

sustained-yield principles of MUSYA, incorporated into NFMA.⁷⁷ The intent of NFMA and the new LRMPs was to save existing diversity, not to eclipse other uses of the forests by expanding reserved forests to the original historic range of the spotted owl.⁷⁸ Indeed, the court upheld as within the agency's discretion the Forest Service's more inclusive interpretation of its own NFMA regulation,⁷⁹ expanding the rule's protection of plant and vertebrate species diversity to include non-vertebrate species.⁸⁰ The Service implicitly recognized by its diversity regulations that in an ecosystem, all species are interrelated and, after all, § 1604(g)(3)(B) simply states "plant and animal communities."

Lyons remains the seminal case on the diversity of species provision. On appeal, the Ninth Circuit summarily affirmed Judge Dwyer's opinion, adding only that the 80% old growth reservation (and 80% likelihood of viable spotted owl populations) was acceptable under the NFMA; a higher percentage would preclude all other NFMA/MUSYA multiple-uses.⁸¹ Significantly, the environmental plaintiffs employed the diversity of species provision as their primary tool to seek protection of the spotted owl national forest habitat; no ESA claim was brought.

Thus, the diversity of species provision has evolved into a "threshold" cause of action that can be employed either alongside or separate from an ESA claim. Examples of the former can be found in *Mt. Graham Red Squirrel v. Madigan*, where environmental plaintiffs presented both an ESA claim and a claim that the diversity of species provision was violated when the USFS failed to show minimum viable populations of the red squirrel would exist.⁸² Examples of the latter can be found in *Friends of the Wild Swan v. United States Forest Service* (alleged violation of NFMA diversity requirement by failing to show viable populations of bull trout in LRMP).⁸³

77. *Id.*

78. *Id.* at 1312.

79. 36 C.F.R. § 219.19 (1996).

80. *Seattle Audubon Soc'y v. Lyons* 871 F. Supp. 1291, 1315 (W.D. Wash. 1994).

81. *Seattle Audubon Soc'y v. Moseley*, 80 F.3d 1401, 1404 (9th Cir. 1996).

82. 954 F.2d 1441 (9th Cir. 1992). The court did not reach the merits, holding that Congress had sidestepped the NFMA by a special Act affecting that particular national forest. *Id.* at 1460 (construing Arizona-Idaho Conservation Act of 1988, Pub. L. No. 100-696, 102 Stat. 4571).

83. 910 F. Supp. 1500, 1505 (D. Or. 1995) (holding that the claim was not ripe, the court took the unusual step of retaining jurisdiction over the case rather than dismissing, in order to give the USFS time to develop an amendment to the LRMP).

While the epic spotted owl-related cases marched along, several other NFMA cases quietly arose in the Ninth Circuit. The most prominent, *Inland Empire Public Lands v. United States Forest Service*, examined the degree to which the Forest Service must provide for viable species populations in order to satisfy the diversity statute.⁸⁴ *Inland Empire* involved several contested timber sales, a small portion of which (1237 acres out of 12,374 total acres) would be from old growth forests.⁸⁵ With regard to seven indicator species, none exclusively old-growth inhabiting or endangered, environmental plaintiffs contested the sufficiency of the viability analysis (i.e., claiming that the Forest Service never estimated actual population size).⁸⁶

In reply, the Ninth Circuit distilled the conflict to a battle over methodologies, writing that the Service was not "plainly erroneous" in deciding to rely on field studies of minimum acres of territory needed, then sparing that amount from harvest.⁸⁷ The court implied in its holding that, so long as the goals required by the diversity provision are met, the Forest Service has some discretion in selecting the means: "In this case, the Service's methodology reasonably ensures such [viable] populations by requiring that the decision area contain enough of the types of habitat essential for survival."⁸⁸ Thus, the focus is on habitat preservation as the engine which will satisfy the diversity requirement. This is the most logical approach. Though the Ninth Circuit will step in and dictate the means by which to meet the ends of the diversity requirement when necessary, (as for old growth species in *Lyons*), when diversity is otherwise met by habitat preservation in an LRMP (as in *Inland Empire*), the court will grant the Forest Service discretion in selecting the means.

Inland Empire also put into high relief the relationship between the diversity provision and old growth. In dicta, the court gave its benediction to reductions in old growth habitat in the Kootenai National Forest by 11-12%, stating that such a reduction was acceptable under the NFMA so long as viable popula-

See, e.g. *United States v. Washington*, 384 F. Supp. 312 (W.D. Wash. 1974), *aff'd*, 520 F.2d 676 (9th Cir. 1975).

84. 88 F.3d 754 (9th Cir. 1996).

85. *Id.* at 758.

86. *Id.* at 758 n.1.

87. *Id.* at 761.

88. *Id.* Addressing plaintiffs' demand for assessing actual species populations in each national forest, the Court replied: "We would encourage such analyses and hold only that they are not *required*." *Id.* at 761 n.8 (emphasis added).

tions remained.⁸⁹ Although this is true in theory, in practice a reduction of old growth by any significant percentage is likely to threaten overall forest diversity, given the small amount of such stands in absolute terms.

A district court opinion, *Oregon Natural Resources Council v. Lowe*, focused on the Winema National Forest in Oregon and addressed the habitat requirements of old growth-inhabiting species under the NFMA.⁹⁰ Specifically, environmentalist plaintiffs contested the sufficiency of the amount of habitat reserved in an LRMP to ensure viable populations of these species. The court simply deferred to the "wide discretion" the Service has to "weigh and decide the proper uses within any area of the national forests," stating, incredibly, that the NFMA awards wide discretion akin to that of the MUSYA standing alone.⁹¹ This, however, is simply incorrect, as all the NFMA opinions addressing the issue hold that the NFMA is not merely procedural, but rather imposes substantive limitations on timber and land use planning to provide for diversity.⁹² There was no ESA claim nor was clearcutting at issue, so the substantive mandate of § 1604(g)(3)(B) was put into high relief. The district court recited the regulatory procedures for providing for diversity in the LRMP, then summarily found that there was no abuse of discretion, based on the fact that the agency had complied with the procedural requirements.⁹³ However, the court did not address whether *in fact* the *substantive requirements* of the NFMA diversity provision have been complied with. Just because an agency has "gone through the motions" does not mean that diversity is being achieved out in the woods.

Another Ninth Circuit case to consider the NFMA, *Nevada Land Action Ass'n. v. United States Forest Service*,⁹⁴ involved an LRMP challenged by ranchers who had permits for grazing in the Toiyabe National Forest (the LRMP would reduce grazing levels). The court found that the agency had permissibly balanced competing uses, decreasing grazing levels to protect ripa-

89. *Id.* at 762-63.

90. 836 F. Supp. 727 (D. Or. 1993) (*Winema*).

91. *Id.* at 733 (quoting Big Hole Ranchers Ass'n v. United States Forest Serv., 686 F. Supp. 256, 264 (D. Mont. 1988)).

92. *See, e.g.*, Seattle Audubon Soc'y v. Lyons, 871 F. Supp. 1291, 1308 (W.D. Wash. 1994).

93. *Lowe*, 836 F. Supp. at 734 (*Winema*).

94. 8 F.3d 713 (9th Cir. 1993).

rian areas.⁹⁵ This holding reflects the NFMA's allowance of changes in levels of the six different multiple uses if one of the uses is compromised for another. It is only a short analogy to see how timber uses must be balanced against wildlife uses, the former possibly being reduced where the latter is being unreasonably harmed.

In what is likely an anomaly for the Ninth Circuit, especially after *Lyons*, the Forest Service successfully employed an argument that diversity would be improved by large-scale clearcutting. In *Resources, Ltd., Inc. v. Robertson*, Judge Beezer approved an LRMP for the Flathead National Forest in Montana upon the Service's simple assertion that uneven-aged cutting of the dominant young stands in the sale area would *decrease* tree species diversity.⁹⁶ Without further analysis (and without even citing the diversity statute or regulations), the court upheld the sales, stating only that the agency had "studied [the issue] thoroughly."⁹⁷ Here, the Forest Service was able to use the preservation of tree species diversity as a justification for clearcutting (at least, the clearcutting of younger even-aged stands). It remains to be seen if such an argument would survive after *Lyons*.

A. *Confronting the Issue: Other Courts*

The Ninth Circuit's spotted owl litigation features prominently in the NFMA diversity provision cases, leading the way toward protection of ecosystems as a logical result of § 1604(g)(3)(B)'s mandate. The other prominent case in the "twin towers" of definitive diversity analysis is *Sierra Club v. Marita* ("*Nicolet*").⁹⁸ However, the Seventh Circuit, in reviewing the Nicolet National Forest LRMP, has not been very friendly toward extending the "diversity" requirement to include comprehensive ecosystem management. As to the four significant factors involving diversity determinations, in *Nicolet* there was no ESA claim, clearcutting was not at issue, and the plan itself was being contested instead of a specific timber sale. However, in considering the fourth factor, presence of old-growth forest, the *Nicolet* court found the lack of old-growth in the case at bar to be critical in deciding the diversity issue.

95. *Id.* at 718.

96. 35 F.3d 1300, 1307-08 (9th Cir. 1993).

97. *Id.* at 1307.

98. 46 F.3d 606 (7th Cir. 1995).

The Nicolet National Forest's old growth had been virtually cleared over the period from 1850 to the early 1920's, later to be replaced beginning in the 1930's.⁹⁹ The environmentalist plaintiffs claimed the Forest Service had failed to consider a logical conclusion of § 1604(g)(3)(B)'s diversity mandate: In order to provide for diversity *effectively*, sufficiently large tracts of "older" forest must be spared when those tracts are completely surrounded by cut-over areas. Under the aegis of "conservation biology," sufficient habitat to maintain both viable *and* diverse species must be set aside.

Conservation biology basically dictates that larger surviving stands are necessary to combat three problems observed by biologists. First, larger stands offer more area to avoid "large-scale disturbances," such as disease or predator infestation; second, the smaller the patch, the greater the chance the surrounding, different habitat (e.g., an enveloping clearcut) will "swallow up" the patch (known as "edge effects"); third, as noted above, when similar isolated habitats are distanced from each other, the chance of migration in case of a "large-scale disturbance" (or a timber harvest) is effectively foreclosed (known as "island biogeography").¹⁰⁰ Indeed, species affected by island biogeography "suffer from genetic deterioration brought on by inbreeding; there is 'no assurance that [a population] will remain viable if it is isolated from other populations.'"¹⁰¹

Conservation biology is a logical conclusion of the NFMA diversity requirement,¹⁰² implicitly understood in the Ninth Circuit spotted owl litigation (and the main point of this article). If the Forest Service is to treat the whole forest as a rotating crop of trees (i.e. a checkerboard pattern of tree stands at various stages of growth, from newly clearcut to older trees), so that *every acre* of a forest will *eventually* be cut down, then, in reality, species that inhabit old-growth forests and older replanted trees will effectively be playing a game of "musical chairs." Animals will be forced to move from their existing range to an adjacent area that

99. *Id.* at 609 n.1.

100. *Id.* at 617-18.

101. James A. Siemans, *A "Hard Look" at Biodiversity and the National Forest Management Act*, 6 TUL. ENVTL. L.J. 157, 161 (1992) (citation omitted).

102. As one commentator has written, "The biological diversity provision, which accounts for the Forest Service's viable population regulations, incorporates conservation biology considerations into the national forest planning and management process." Robert B. Keiter, *Beyond the Boundary Line: Constructing a Law of Ecosystem Management*, 65 U. COLO. L. REV. 293, 310 (1994).

can (hopefully) sustain them like the previous older range (plant species obviously do not have this option). In the case of old-growth species, there is *no* adjacent land they could successfully inhabit.¹⁰³ Professor Wilkinson has noted that the diversity provision's "distribution requirement will prevent species from becoming isolated on islands of suitable habitat. For instance, planners may not rely on a single wilderness area to furnish habitat for a species dependent on old-growth forests or roadless solitude, if that habitat exists elsewhere in the national forest."¹⁰⁴ In the case of replanted forests such as the Nicolet, one must question the Service's assumption that diversity and viability can be maintained under its existing harvesting scheme unless sufficiently large, old, and adjacent stands remain.

In *Nicolet*, the court initially had to decide if standing would be conferred for challenging a forest management plan instead of an individual sale. The Ninth Circuit had found sufficient standing for challenging a plan, whereas the Seventh Circuit held that there was only a sufficient chance of injury at the plan implementation level, i.e., an individual timber sale. The *Nicolet* court held that there was standing, reasoning that the plaintiffs "need not wait to challenge a specific project when their grievance is with an overall plan."¹⁰⁵

The *Nicolet* plaintiffs claimed that smaller tracts of land were biologically inferior for maintaining diversity and viability of various species in the long run.¹⁰⁶ The opinion recites in detail the conscientious efforts of the Forest Service to maintain diversity of plant and animal species, closely monitoring indicator species and ensuring that the *kinds of habitat* available were themselves diverse (i.e. age of trees, proximity to water sources, relative hilliness of the ground).¹⁰⁷ The Service then simply calculated the minimum viable population necessary to sustain each indicator species and withheld from harvest a minimum amount of land throughout the forest to theoretically sustain these populations.

103. Indeed, most if not all old growth-dependent species cannot "play musical chairs" and move as old growth is "rotated." In addition to the northern spotted owl, consider the red-cockaded woodpecker, which would have been reduced to nonviable numbers if an LRMP to cut trees on a rotational basis had been approved. *Sierra Club v. Lyng*, 694 F. Supp. 1260, 1271-72 (E.D. Tex. 1988).

104. Wilkinson & Anderson, *supra* note 5, at 299.

105. *Sierra Club v. Marita*, 46 F.3d 606, 614 (7th Cir. 1995) (*Nicolet*) (quoting *Seattle Audubon Soc'y v. Espy*, 998 F.2d 699, 703 (9th Cir. 1993)).

106. *Id.*, 46 F.3d at 617.

107. *Id.* at 616.

Therefore the issue presented was exactly *how large* each tract must be to really be useful, rather than simply the *number* of species currently present in the forest.

Considering the lack of old growth in the forest, the *Nicolet* court held that the Service had complied with § 1604(g)(3)(B)'s requirements. Standing behind the APA's "arbitrary and capricious" standard of review,¹⁰⁸ the court found that the agency had followed all of its diversity regulations, and refused to require the application of conservation biology in order to maintain diversity. Instead, the court found that the agency had discretion to consider only the number of species and kind of habitat present in the forest, rather than the size of habitat.¹⁰⁹ In commenting on the adequacy of the regulations in meeting § 1604(g)(3)(B)'s command, the court ruled that it was enough for the agency to set up its indicator species monitoring program.¹¹⁰

However, the court failed to see the difference between the population levels of one indicator species, versus the *overall* diversity of the forest. Indicator species are selected because they represent how the most sensitive species in the forest respond to Forest Service actions; but can the long-run diversity of the forest really be sustained when plants and animals are isolated in small "islands" of forests? Counting population levels of certain selected species is quite different from counting the *number* of different species. The court recognized that the Forest Service's guidelines may not meet the requirements of biology: "[A]n [indicator species] should *to some degree* indicate [forest fragmentation's] impact on diversity."¹¹¹

Nicolet significantly diverges from the spotted owl litigation in its consideration (or lack thereof) of the old growth factor when evaluating diversity. The latter had extensively analyzed the issue of preserving old growth forest in order to meet the NFMA diversity requirements. Conversely, the *Nicolet* court was ambiguous in its recital of the old growth content of the forest.¹¹² The court elected to discount the significance of old growth and old growth-dependent species, even when presented with specific

108. *Id.* at 619 (quoting 5 U.S.C. § 706(2)(A) (1996)).

109. *Id.* at 619.

110. *Id.* at 620.

111. *Sierra Club v. Marita*, 46 F.3d 606, 620 (7th Cir. 1995) (*Nicolet*) (emphasis added).

112. *Id.* at 609 n.1: "The forests now contain a mixture of trees that markedly differs from the forests' pre-1800 'natural' conditions but is also more diverse in terms of tree type and age."

findings of fact by the lower court that substantial old growth had "grown" over the last 150 years.¹¹³ Indeed, the closest the Seventh Circuit Court of Appeals came to acknowledging any significant presence of old growth was in passing during its recital of the factors the Forest Service used in evaluating vegetative diversity.¹¹⁴ Seeing the Nicolet as mainly a newer, regrown forest, the court held that USFS regulations did not require "natural forest" diversity but rather . . . diversity at least as great as that found in a natural forest."¹¹⁵

But what does the court really mean? To find the answer, one must consider the ramifications of the *Nicolet* court's holding. Apparently, the Forest Service need not preserve existing diverse species ("natural forest"), especially those dependent on old growth, so long as it provides *substitute* species in a wide enough variety as were found before ("diversity at least as great").¹¹⁶ In other words, that if there were X number of species occurring naturally, but some of those could only survive in old growth forests, the Forest Service could eventually cut down the old growth, and replace species that could not survive with species that could, so long as a *total* of X number of species are present in the forest.¹¹⁷ This is simply a contrary reading of what the NFMA requires. As the court in the spotted owl litigation observed, the Forest Service may use different procedures to preserve diversity (such as an indicator species program or planning on an ecosys-

113. "The total number of wildlife species associated with the mature and old growth forest condition is about equal to the number associated with the regenerating and young timber conditions." *Sierra Club v. Marita*, 843 F. Supp. 1526, 1536 (E.D. Wis. 1994).

114. *Sierra Club v. Marita*, 46 F.3d 616, 617 (7th Cir. 1995) (*Nicolet*).

115. *Id.* at 621.

116. Significantly, the Congressional drafters of the diversity provision had originally proposed that "systems of silviculture [be employed] which maintain the diversity of forest types and species *found naturally* in each national forest." (Comparison of S. 3091, as Amended, With Proposed Amendments By Sen. Metcalf, 94th Cong., 2d Sess. (1976)), D. LEMASTER, *DECADE OF CHANGE: THE REMAKING OF FOREST SERVICE STATUTORY AUTHORITY DURING THE 1970's* app. 3 (1984) (emphasis added). However, the deletion of the emphasized language does not lessen the mandate to preserve diversity via the avenue of sparing old-growth habitat.

117. At the very least, Forest Service administrators such as Chief Peterson interpret the statute as granting leave to employ "substitute diversity:" "The [diversity] law does not provide . . . an indication of how much diversity is required . . . [and] does not say that whatever diversity is there now must be kept. With proper justification, and to meet multiple use objectives, diversity could be altered or even reduced." Peterson, *Diversity Requirements in the National Forest Management Act*, in *NATURAL DIVERSITY IN FOREST ECOSYSTEMS* 26 (1984).

tem basis), but the *result* mandated by the NMFA (i.e., *maintaining* diversity) must be achieved.¹¹⁸ If no other procedure than preserving old growth will work, then the Forest Service must use that procedure.

The Forest Service argued in the alternative that it had considered conservation biology, but “ultimately determined that science to be uncertain *in application*.”¹¹⁹ Even though the district court conceded that conservation biology “represent[s] sound ecological theory,”¹²⁰ the *Nicolet* court labeled the conflict simply a difference in methodologies (i.e., within the discretion of the agency to decide).¹²¹ Apparently the court agreed that uncertainty in application meant that this forest management method had not been previously applied *in the Nicolet National Forest*. But conservation biology had been applied in Pacific Northwest forests:¹²² When then could it ever have been applied in the *Nicolet*? The court’s response: “The Service acknowledged the developments in conservation biology but did not think that they had been shown *definitively* applicable [sic] to forests like the *Nicolet*.”¹²³ When is it definitive? As Professor Tarlock has written, “[s]cientific biodiversity protection is ultimately not based on immutable values, but on the constant interplay between theory and practice, and thus is subject to constant modification as new information is acquired.”¹²⁴

B. “*Neo-diversity*”

Nicolet might lead one to conclude that, in the Seventh Circuit at least, old growth maintenance or preservation is a dead issue. However, *Glisson v. United States Forest Service* appears to ques-

118. See *Seattle Audubon Soc’y v. Lyons*, 871 F. Supp. 1291, 1311-12 (W.D. Wash. 1994). “The goal, recognizing that only a small fraction of old growth remains, was to comply with the laws based on *current* conditions.” *Id.* at 1312 (emphasis added).

119. *Sierra Club v. Marita*, 46 F.3d 606, 621 (7th Cir. 1995) (*Nicolet*) (emphasis added).

120. *Id.*

121. It is dubious whether conservation biology rises to the level of “uncertainty” the Court and the Forest Service ascribes it: “Much basic data concerning public domain biological resources is yet unknown. . . . [However], despite some technical uncertainties and data deficiencies, enough is known to provide public land managers with a knowledgeable basis for devising resource policies in ecosystem terms.” Keiter, *supra* note 102, at 323.

122. *Marita*, 46 F.3d. at 622.

123. *Id.* at 623 (emphasis added).

124. Tarlock, *supra* note 6, at 560 (citation omitted).

tion such a conclusion.¹²⁵ In *Glisson*, the court of appeals upheld a contested LRMP for the Shawnee National Forest which intended to effect a large-scale forest conversion from pine trees, many old enough to be considered old growth, to native hardwoods.¹²⁶ The hardwood species had been "removed" by settlers in the early 1800's.¹²⁷ At issue was the fate of the pine warbler, a non-native species which had come to make the Shawnee its home over the years.¹²⁸ A forest type conversion would essentially evict this species from its adopted habitat. In an interesting twist on the significance of old growth forests, the Forest Service maintained that since the warbler was not a true native of the forest *in its natural state*¹²⁹ (because it did not occupy naturally-found old growth hardwood stands), the species was not protected by the relevant diversity regulation.¹³⁰ The court allowed the elimination of the warbler from the Shawnee National Forest on a strict reading of the regulation; the bird was simply not a native species, and thus not guaranteed protection under the regulation.¹³¹

The opposite of the Ninth Circuit's old growth-dependent species issue can be found in *Glisson*: If the Forest Service elects to return regrown forest to its native (pre-settlement) state, what happens to species that have made the artificially modified forest their habitat? In *Glisson*, the Forest Service argued that its plan would result in a net increase in diversity of species, a type of "neo-diversity" not otherwise occurring if the forest were left alone. If diversity is maintained or improved, can the Service allow such a forest conversion? If so, could court approval of a conversion to native-type forests be used by analogy to convert old growth forests to non-naturally occurring tree species, (i.e., "tree farms") so long as net diversity is maintained? This result is not very likely; in *Glisson* total diversity in the Shawnee National Forest was decreasing because the introduced pines were

125. 876 F. Supp. 1016 (S.D. Ill. 1993), *aff'd without opinion*, 51 F.3d 275 (7th Cir. 1995).

126. *Id.* at 1020.

127. *Id.*

128. *Id.* at 1026.

129. *Id.*

130. "Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species . . ." 36 C.F.R. § 219.19 (1996).

131. *Glisson v. United States Forest Serv.*, 876 F. Supp. 1016, 1027 (S.D. Ill. 1993).

choking off various native plant species.¹³² Judge Foreman of the *Glisson* court wrote:

[T]he regulations do not specify a particular formula or method of achieving diversity. In fact, the Committee on Scientists, which helped draft the regulations, stated that the diversity [sic] “was one of the most perplexing issues dealt within [sic] the draft regulations. We believe it is impossible to write specific regulations to ‘provide for’ diversity.”¹³³

Glisson is, at the least, disharmonious with the *Nicolet* decision; the court viewed the preservation of old growth species differently in each case, in response to the Forest Service’s goals in each national forest.

“Neo-diversity,” that is, wielding a finding of increased net diversity as justification for plans significantly changing existing forest types, has been put forth elsewhere. In the Black Hills National Forest, an LRMP was approved which sought to modify the forest on a large scale from a dense forest to one with many open areas.¹³⁴ In *Black Hills I*, the unusual strategic choice was made to contest a timber sale implementing an LRMP as being inconsistent with the management plan language *itself*, rather than as violative of 16 U.S.C. § 1604(g)(3)(B) or USFS regulations. The LRMP attempted to enhance species diversity pursuant to § 1604(g)(3)(B)¹³⁵ by increasing *both* old growth (through preservation) and open, grassy areas¹³⁶ to benefit plant and animal communities that thrive in these two very different environments.¹³⁷ Plaintiff Sierra Club contended that cutting any mature trees to create open areas would be contrary to the plan goal to “cultivate” old growth.¹³⁸ Dealing with this King Solomon-like choice¹³⁹ of how to mete out different habitats, the court wrote:

The Forest Supervisor is not at liberty to ignore some Forest Plan standards in favor of other standards. If no timber were to be re-

132. *Id.* at 1030.

133. *Id.* at 1029 (citation omitted).

134. *Sierra Club v. United States Forest Serv.*, 878 F. Supp. 1295, 1311 (D.S.D. 1993) (*Black Hills I*).

135. At least it is inferred that the Forest Service was heeding § 1604(g)(3)(B); the statutory provision is not cited anywhere in the opinion.

136. *Sierra Club*, 878 F. Supp. at 1315 (*Black Hills I*).

137. In the planning area at issue, less than 1% of the region contained old growth and slightly more than 1% contained open, grassy areas. *Id.*

138. *Id.*

139. Unlike the Forest Service, the biblical king’s decision was not subject to judicial review.

moved from the . . . Planning Area, . . . the Forest Plan standards for [open, grassy] areas would continue to be violated.

The Forest Plan standards for old growth and for [open, grassy] areas are in a sense competing standards. One standard requires the continuing presence of trees in order to be met and the other standard requires the absence of trees in order to be met. The Forest Supervisor struck a reasonable compromise to try to meet both standards in providing for the designation of some timber to become old growth and the removal of other timber to create [open, grassy] areas. That decision was not arbitrary and capricious.¹⁴⁰

The court's opinion accurately grasps the dilemma that arises when dealing with similar emerging diversity issues such as in *Lynons*: What is the right balance of habitats in a national forest, and what level of old growth should remain? These issues will likely become more prominent in the legal jurisprudence over time as the battle over "naturally found" diversity versus "planned" diversity is joined. Significantly, the USFS in its regulations extended statutory diversity protection to "native and desired non-native . . . species" of fish and wildlife,¹⁴¹ but refused to give express regulatory protection to "native" (old growth) tree species. However, the emerging interpretation that § 1604(g)(3)(B) implicitly mandates *some* old growth protection appears to avoid this regulatory "oversight." Is this "neo-diversity" something the drafters of the NFMA envisioned (actively shaping the forest for diversity), rather than simply setting off areas for preservation? This is still an emerging issue in NFMA diversity jurisprudence.

After *Black Hills I*, the same environmental plaintiffs, in *Black Hills II*, changed strategies and contested the LRMP itself, instead of its implementation through specific timber sales.¹⁴² Though primarily a NEPA case, the court's further recital (improvingly) of the LRMP at issue reveals how far the Forest Service was taking the concept of diversity. Using diversity as its basis, the Service sought to restore the Black Hills National Forest to its pre-European appearance, before the "effects of forest management and fire prevention since the 1870's [had] allowed the forest to expand into previously open spaces."¹⁴³

140. *Sierra Club v. United States Forest Serv.* 878 F. Supp. 1295, 1315 (D.S.D. 1993) (*Black Hills I*).

141. 36 C.F.R. §§ 219.19, 219.27(a)(6) (1996).

142. *Sierra Club v. United States Forest Serv.*, 46 F.3d 835 (8th Cir. 1995) (*Black Hills II*).

143. *Id.* at 840 n.9.

“Neo-diversity” forest planning similar to *Glisson*, *Black Hills I*, and *Black Hills II* has also surfaced in the LRMP for the Green Mountain National Forest in Vermont.¹⁴⁴ In a very narrow opinion that focused only on whether timber sales conformed with the LRMP (not whether the LRMP complied with the diversity statute), the *Green Mountain* court endorsed the Service’s argument that the proposed clearcuts would enhance diversity by creating open areas.¹⁴⁵ An identical argument was employed in the Ninth Circuit case, *Resources, Ltd., Inc.*¹⁴⁶ These two cases present a possible trend, whereby the Forest Service would be invoking the diversity statute as justification for clearcutting in dense forests. In *Green Mountain*, the Service justified the clearcuts thus: “A careful blend of timber stands of various types and ages will *benefit diversity*, certain wildlife species . . . and visual quality. Practicing even-aged silviculture¹⁴⁷ for high quality sawtimber fits well with these objectives”¹⁴⁸ Although the Court acknowledged that the traditionally dense forest would become less hospitable for certain sensitive species such as the black bear, the new clearcuts would “provide wildlife with an opportunity to exploit a habitat type that does not currently exist in the . . . area.”¹⁴⁹ But how far can such a rationale be taken before it negates the original intent of the diversity provision? A strong argument *contra* asserts that the diversity provision was envisioned to *preserve* species of plants, animals and trees, not be used as a means to justify clearcutting.

*Cronin v. USDA*¹⁵⁰ makes a very astute point when addressing the problem of attempting to “shape” the forests—it takes a very long time to assess the results: “[T]rees cut down this fall will not have grown back to their present height till most of the plaintiffs are dead. The quantification of such a harm is difficult, but on the other side there is—nothing . . . [except] anticipated [Forest Service] revenues [of] . . . a few thousand dollars”¹⁵¹ Taken in the context of preservation of diverse species, it counsels cau-

144. *National Audubon Soc’y v. Hoffman*, 917 F. Supp. 280 (D. Vt. 1995) (*Green Mountain*).

145. *Id.* at 286.

146. *Resources, Ltd., Inc. v. Robertson*, 35 F.3d 1300, 1305 (9th Cir. 1994).

147. Timber harvest methods.

148. *Hoffman*, 917 F. Supp. at 283 (quoting 1987 Land Resource Management Plan at 4.102) (*Green Mountain*) (emphasis added).

149. *Id.* at 284-85.

150. 919 F.2d 439 (7th Cir. 1990).

151. *Id.* at 445.

tion when considering cutting these last remnants of original terrain.

C. *Once It's Gone, It's Gone - Or Is It?*

Circuit courts, other than the Ninth and Seventh, have ruled substantially on the outer parameters of the diversity provision; however, these opinions often contain incomplete analyses which may become the unstable foundations of precedent supporting an erroneously narrow interpretation of § 1604(g)(3)(B).

The sole NFMA case in the Sixth Circuit was a district court case which specifically reached the scope of § 1604(g)(3)(B). In that case, the LRMP for the Wayne National Forest in Ohio was contested.¹⁵² The district court upheld a clearcutting program on steep, non-old growth terrain. The plan for the Wayne Forest directed that 80% of the suitable land would be clearcut, with the other 20% using group selection. Harvesting would occur on narrow ridges and valleys with 15% to 55% grades, the steepest grade that is accessible to logging.¹⁵³ The main contention was that the agency did not adequately show how clearcutting was the "optimum" method as required by the NFMA.¹⁵⁴ The court held that the plan adequately justified the optimality of clearcutting. It found the agency's reasoning persuasive, agreeing that clearcutting gave the best chance for regeneration of the most commercially desirable tree species, i.e. hickory and oak, which require "poor, dry sites."¹⁵⁵ As the Service had virtually dedicated the use of this area to replanting commercial grade timber, it must have considered these areas of the forest reserved to a particular use that pre-empted other uses (recall the MUSYA provision that "some land will be used for less than all of the resources").¹⁵⁶ Then why cannot other areas, such as old growth regions, be dedicated to wildlife uses?

Of course, clearcutting is entirely acceptable under the NFMA when it is "optimal."¹⁵⁷ Throughout the Forest Service's justification of clearcutting, it cites benefits such as "higher revenues, lower costs, and less risk. . . . [T]his harvesting method does, in fact, imitate nature. Natural clearcutting occurs as a result of

152. *Sierra Club v. Robertson*, 845 F. Supp. 485 (S.D. Ohio 1994) (*Wayne*).

153. *Id.* at 490-91.

154. 16 U.S.C. § 1604(g)(3)(F)(i) (1996).

155. *Sierra Club*, 845 F. Supp. at 492 (*Wayne*).

156. 16 U.S.C. § 531(a) (1996).

157. 16 U.S.C. § 1604(g)(3)(F)(i) (1996).

wildfire, wind, insects and disease.”¹⁵⁸ The court observed that, in the optimality provision, Congress “considered the arguments for and against clearcutting . . . and struck a delicate balance between the two extremes.”¹⁵⁹ In the face of § 1604(g)(3)(B), however, the question becomes, how much clearcutting is “optimal” before it negatively affects wildlife diversity? *Wayne* has shown that the USFS can successfully justify optimality. It remains to be seen how much of the forest can be cut in this fashion before the diversity provision is implicated.

Notably, the *Wayne* court declined to follow the *Rio Grande* court’s interpretation of the MacCleery decision¹⁶⁰ (involving econometric analysis of below-cost timber sales). The court deferred to the Forest Service’s interpretation of this agency precedent, holding that since timber sales would decrease under the new LRMP (rather than increase as in MacCleery), the MacCleery decision did not apply.¹⁶¹ This interpretation is simply erroneous. Under this administrative law precedent, the agency is bound to thoroughly justify why below-cost timber sales have been approved, *regardless* of whether timber sales as a whole are less under the new plan than under prior plans.¹⁶²

The requirements of § 1604(g)(3)(B) and preservation of old growth forests were directly at issue in *Wayne*. Here, plaintiff Sierra Club contended that the NFMA diversity provision required preservation of at least some old growth stands. After examining the Forest Service regulations (instead of § 1604(g)(3)(B) itself) for such a requirement, the court found no such implication.¹⁶³ However, the court was unwilling to rule directly on whether preservation of some old-growth was mandated by the NFMA diversity provision. As in *Nicolet*, the *Wayne* court found the lack of “pure” old growth a controlling factor¹⁶⁴—that since virtually all of the forest had been cut at least once since the 1850’s, all portions of it could be recut again (despite the fact that a significant number of stands over one hundred years old are “almost” old growth and harbor dependent species). The court held that since the LRMP provided for

158. *Sierra Club v. Robertson*, 845 F. Supp. 485, 493 (S.D. Ohio 1994) (*Wayne*).

159. *Id.* at 493-94.

160. *Citizens for Envtl. Quality v. United States*, 731 F. Supp. 970, 987 (D. Colo. 1989) (*Rio Grande*). *See supra*, note 51.

161. *Sierra Club*, 845 F. Supp. at 498 (*Wayne*).

162. *Citizens for Envtl. Quality*, 731 F. Supp. at 987 (*Rio Grande*).

163. *Sierra Club v. Robertson*, 845 F. Supp. 485, 501 (S.D. Ohio 1994) (*Wayne*).

164. *Id.* at 502.

diversity of plant and animal life for the forest as a whole by reserving *some* areas, it was a valid exercise of discretion, even though the oldest stands of trees (comprising nine percent of the forest) would be clearcut.¹⁶⁵

Sadly, the court's reasoning implies that "once it's gone, it's gone." Consequently, once a forest has been cut, the Forest Service need only provide for the diversity of species that could survive in younger stands, disregarding the plant and animal communities that have inhabited the old growth-like 100-plus year old regrown stands. This decision gives the Forest Service an incentive to push forward the age at which trees are harvested in order to "scale back" the threshold of diversity required for the forest.

D. *Form Over Substance, Or, When Will A Diversity Claim Be Fully Considered?*

Of the remaining circuits, the Eighth Circuit found itself the forum for another procedurally complex case centered on the Ouchita National Forest¹⁶⁶ in Arkansas. There, the district court ruled on the merits of the LRMP, but on appeal the judgment was vacated for lack of standing. The Eighth Circuit affirmed the findings of the district court regarding the plan without further comment, but found that the plaintiffs would need to contest an individual implementation action instead of the plan itself to allege an imminent injury.¹⁶⁷ The Ouchita did not contain significant old growth, so the main issues were the legality of clearcutting and the provision for diversity in the LRMP.

Unfortunately for the plaintiffs, their diversity claims failed because, in essence, they were *too* specific. Rather than contesting that the LRMP did not sufficiently provide for the maintenance of "older tree"-inhabiting species (as in *Cronin*), claims were made against the agency's methods for evaluating diversity. Specifically, the Sierra Club contested the Service's evaluation of diversity on a stand-by-stand basis instead of species-by-species, and challenged the statistical methods for evaluating diversity.¹⁶⁸ As the above cases show, when contesting Forest Service *procedure* instead of compliance with the purposes of the NFMA di-

165. *Id.* at 502-03

166. *Sierra Club v. Robertson*, 810 F. Supp. 1021 (W.D. Ark. 1992), *vacated for lack of standing*, 28 F.3d 753 (8th Cir. 1994) (*Ouchita*).

167. *Sierra Club v. Robertson*, 28 F.3d 753, 757 (8th Cir. 1994).

168. *Sierra Club*, 810 F. Supp. at 1028 (*Ouchita*).

versity provision, the courts will almost always uphold the regulations. The *Ouchita* court did so here, finding the plaintiffs' arguments "mere disagreement[s] with agency methodology." Therefore, in the context of the APA's "arbitrary and capricious" review standard,¹⁶⁹ the court need "not . . . resolve disagreements among experts."¹⁷⁰

Finally, in response to the claim that the "natural forest is being turned into a pine tree farm," the court turned to the multiple use objectives embedded in § 1604(g)(3)(B) for guidance, stating that indeed *some* of the land could be reserved for specific uses that would take priority.¹⁷¹ Therefore, it was permissible for the Service to manage some small areas of the *Ouchita* for pine tree timber harvesting. Of course, such logic mirrors the argument that the MUSYA, along with the NFMA diversity provision, provide for similar "dedications" of sections of the forest for old growth wildlife uses.

The only other relevant Eighth Circuit case challenged an LRMP for the Nebraska National Forest.¹⁷² Neither old growth nor clearcutting was at issue; instead, the novel claim was made for the "diversity" of a particular species, here, the prairie dog. This species was not threatened in the ESA sense; rather, the plaintiff biologist believed that the agency's diversity analysis contained insufficient consideration of the prairie dog population. This case would have cast an intriguing angle on how far the NFMA diversity provision could intrude into the ESA's mode of species protection, (i.e., specific preservation of an individual species). The plaintiff here was essentially attempting to use the diversity of species statute to give protection to one discrete species as opposed to protecting the diversity of species in general; in other words, it was an attempt to employ the NFMA diversity provision in place of the ESA. Unfortunately, the court refused to reach the merits of the claim, holding that the plaintiff had failed to exhaust his administrative remedies.¹⁷³

169. 5 U.S.C. § 706(A) (1996).

170. *Sierra Club*, 810 F. Supp. at 1028 (*Ouchita*).

171. *Id.*

172. *Sharps v. United States Forest Serv.*, 28 F.3d 851 (8th Cir. 1994).

173. *Id.* at 853.

E. *How Does Diversity Figure In Mature Eastern Forests? A Case Study*

As with the Sixth Circuit, the Fourth Circuit's sole NFMA dispute was a district court case. Here, a site-specific timber sale in the George Washington National Forest in Virginia¹⁷⁴ was contested as violating § 1604(g)(3)(B). The first claim challenged the sufficiency of the procedures used to evaluate diversity, but, like *Ouchita*, these claims were minute enough to be considered a difference in methodology.¹⁷⁵ The plaintiff also contested the selection of particular indicator species, but the court also found the agency's choices within the discretion of the Forest Service: "[D]iversity is so vaguely defined in this statutory and regulatory scheme that the court is hard-pressed to find in it any substantive command to consider any particular creature."¹⁷⁶

The next claim went closer to the mark. In response to claims that the Forest Service's diversity efforts were simply attempts to diversify commercial timber stands and promote game species, the court was forced to resort to § 1604(g)(3)(B) and to the fact that, as an eastern forest, it contained no old growth: "[N]othing in the statute or its regulations requires that the naturally occurring forest ecosystems *in a particular area* are the sole yardstick by which diversity must be measured. In short, this is a *managed* environment."¹⁷⁷ By "particular area," the court means, in the words of the Forest Service, that diversity is provided "across the landscape, not maximum diversity on each acre of the forest."¹⁷⁸ The court cites the multiple use objectives of the NFMA as a qualification of the "pro-diversity command."¹⁷⁹ This is indeed a proper reading of the purpose of the diversity provision, but the court then fails to understand the ramifications of such a reading. If certain areas can be dedicated to one of the six multiple uses, such as timber harvesting or game species cultivation, then other areas must be reserved for wildlife uses in order to maintain diversity commensurate with § 1604(g)(3)(B).

Unfortunately, the controlling factor here was the specific agency action contested. The plaintiffs challenged an individual timber sale rather than the LRMP as a whole. Therefore, the

174. Krichbaum v. Kelley, 844 F. Supp. 1107 (W.D. Va. 1994) (*Washington*).

175. *Id.* at 1114.

176. *Id.*

177. *Id.* at 1115 (emphasis added).

178. *Id.* at 1115 n.13.

179. Krichbaum v. Kelley, 844 F. Supp. 1107, 1115 (W.D. Va. 1994).

court narrowed its scope to the propriety of this singular action. A diversity claim would likely carry more weight in the context of a comprehensive Management Plan.

Edge effects and fragmentation were also alleged as threatening the forest's diversity. Though the Forest Service "candidly admit[ed] that its approach to fragmentation . . . [was] 'rudimentary,'" the court accepted the agency's rationale that such issues are better addressed in the comprehensive LRMP, rather than in the context of an individual timber sale.¹⁸⁰ Hence, the court declined to analyze or elucidate a standard regarding these two effects on diversity.

The court then had to come to grips with the fact that, like the forest in *Wayne*, the areas that had been razed over a hundred years ago were becoming "old-growth." Noting that the "[p]laintiff rightly asserts that NFMA commands preservation and promotion of natural forest conditions," the court found that the statute gave considerable discretion to the Service in deciding *how* to go about preserving these natural conditions.¹⁸¹ However, Judge Michael was unwilling to articulate a standard for dealing with these emerging old-growth forests and the species dependent upon them:

It may be . . . that the agency's method of protecting old growth . . . may prove to be crude and ultimately inadequate once the agency's old growth standards are fully articulated. But again, this is a managed forest whose "natural condition" is becoming a consideration only now, not even a century after clearcutting dramatically altered its evolution. . . . The agency is therefore entitled to develop an old growth management policy [within the limits of NFMA]¹⁸²

The court therefore found that, at this stage of the plan, the Forest Service had acted within its scope of discretion. The next few years should hopefully see a comprehensive development of Forest Service policy towards these "neo-old growth" forests and judicial examination of conformance with the NFMA. This is a subject the NFMA apparently did not consider. What should be done when plant and animal species become dependent on these stands? Perhaps a future model for each national forest would include specific reserve areas for old growth inhabiting species, the rest being open to other multiple uses. Recall that in the

180. *Id.* at 1116.

181. *Id.* at 1115.

182. *Id.* at 1116.

spotted owl litigation, Judge Dwyer acknowledged the wisdom in such an arrangement.

F. Clearcutting and the Diversity Provision

Meanwhile, in the Fifth Circuit, two cases contested the harvest methods of the Forest Service. While diversity was not specifically at issue in either case, there were significant *dicta*. The first of these cases, *Sierra Club v. Espy*,¹⁸³ involved the appeal of an injunction barring clearcutting. The plaintiffs were contesting several individual timber sales, rather than the LRMP itself; therefore, the court specifically limited its review to whether the nine sales conformed to the Management Plan.¹⁸⁴

The clearcutting program was upheld, as the Fifth Circuit found that the NFMA "optimality" requirement¹⁸⁵ did not limit clearcutting to "exceptional circumstances;" instead, the Service could use clearcutting as an overall management strategy, so long as it "proceed[ed] cautiously" by considering competing uses.¹⁸⁶

In the context of the individual sales, the court did address the effect of clearcutting on diversity. It declined to define the "outer boundaries" of the NFMA diversity provision because it felt the Environmental Assessments (EA)¹⁸⁷ were adequate, and § 1604(g)(3)(B) was not directly at issue.¹⁸⁸ Providing for diversity is a process "involv[ing] trade-offs," the court noted. As some species thrive on the younger stands clearcuts generate, others thrive on the dense, mixed-age forests resulting from group selection, while still others can only thrive in old-growth forests.¹⁸⁹ It acknowledged there would be some effect on diversity after an area is cleared, but believed that because the EAs addressed how the cut would affect local species, it need not go further in the context of these individual sites.¹⁹⁰ As in *Washington*,¹⁹¹ the court was unwilling to examine the entire LRMP. From this trend, diversity challenges appear more likely to be

183. 38 F.3d 792 (5th Cir. 1994) (*Texas Forests I*).

184. *Id.* at 798.

185. 16 U.S.C. § 1604(g)(3)(F)(i) (1996).

186. *Espy*, 38 F.3d at 799 (*Texas Forests I*).

187. Under circuit precedent, while the more comprehensive EIS is required for LRMPs, individual site sales only require an EA. *Texas Comm. on Natural Resources v. Bergland*, 573 F.2d 201, 210-11 (5th Cir. 1978).

188. *Sierra Club v. Espy*, 38 F.3d 792, 801 (5th Cir. 1994) (*Texas Forests I*).

189. *Id.* at 802.

190. *Id.* at 801-02.

191. *See supra* notes 174-82 and accompanying text.

successful if brought against the Management Plan instead of during the implementation stage.

The other Fifth Circuit case, *Sierra Club v. Yeutter*,¹⁹² involved the protest of an LRMP. Though only regrown "neo-old growth" (100-plus year old) trees were involved, the Forest Service's clearcutting program came into conflict with ESA protection of the red-cockaded woodpecker.

The court made several points that are highly critical of clearcutting programs in general, both in terms of their economic efficiency and effect on diversity. It found that group selection is less expensive than clearcutting because the latter requires artificial reseedling and frequent measures to protect soil and watersheds; also, the even-aged forests that result from clearcutting are more susceptible to diseases and insect infestations (as there is no "tree" diversity).¹⁹³ In conclusion, the court commented that "[t]he sole reason for the Forest Service's adoption of . . . clearcutting as the management method of choice [was] the fact that it [was] preferred by the timber companies."¹⁹⁴

In many situations clearcutting can be an economically efficient method of timber harvesting and *can* coexist with other multiple uses such as wildlife so long as there are areas reserved for those uses. However, the presence of the red-cockaded woodpecker in some of the older stands of these Texas forests created a physical "border" at which the Forest Service should refrain from timber harvesting.

IV.

WHAT DOES THE FUTURE HOLD FOR THE FORESTS?

Congress giveth, and Congress can taketh away.¹⁹⁵ As the benefits to the public of sustained diversity were given under the discretion of Congress to manage public lands as it sees fit, it could simply remove the diversity provision and even go so far as to declare the national forests "tree farms." Since the NFMA was passed in 1976, Congress has tried on several occasions to again shape the direction of forest policy through the controversial use of legislative appropriations riders. Realizing that environmental plaintiffs were challenging proposed timber cuts under

192. 926 F.2d 429 (5th Cir. 1991) (*Texas Forests II*).

193. *Id.* at 433 (quoting *Sierra Club v. Lyng*, 694 F. Supp. 1260, 1268 (E.D. Texas 1988)).

194. *Id.*

195. A variation on the biblical passage.

the old timber cutting schedules allowed to stand until the NFMA plans were finally in place, Congress sought to enjoin judicial review of attacks of the *old* plans and any cuts proposed under those plans.¹⁹⁶ Finding the intent and authority of Congress clear to foreclose this avenue of pursuit, the Ninth Circuit upheld the rider in *Oregon Natural Resources Council v. Mohla*.¹⁹⁷ The moratorium continued from 1988 through 1990, when the renewed rider¹⁹⁸ barring judicial review was again contested. This time, the Supreme Court stepped in, upholding the rider in the face of claims that the legislation was a violation of separation of powers.¹⁹⁹ Congress used the guise of salvaging decaying timber to suspend judicial review of plans yet again for the fiscal year 1996.²⁰⁰ What is clear from the above discussion is that Congress can indeed change the underlying law, effectively throwing out long standing LRMPs by amending the NFMA.

There is no question the nation is perceiving the finiteness of the national forests. Already by 1989, the 191 million acres in the National Forest System were allocated to pressing uses—108.1 million acres for logging, 32.5 million acres legislatively set aside as wilderness areas, and 50.4 million acres of roadless, undeveloped areas²⁰¹ comprising the “frontier” upon which the battle for the six MUSYA competing uses is being fought.

The Forest Service has long sought to support the economies of local communities by allowing a steady supply of low-cost timber, and has used this rationale in quantifying benefits when calculating the cost-benefit equation for timber sales. While the NFMA approves of this and the “farming of timber” as one of the approved multiple uses (as indeed there is a public demand for forest products), the extent of the benefits is not as great as it

196. Pub. L. No. 100-446, § 314, 102 Stat. 1825 (1988).

197. 895 F.2d 627, 629 (9th Cir. 1990).

198. Pub. L. No. 101-121, § 318, 103 Stat. 701 (1990).

199. *Robertson v. Seattle Audubon Society*, 503 U.S. 429, 438 (1992) (Congress had referred to two pending cases in its rider modifying NFMA and other environmental laws).

200. “Any timber sale [covered by this Act] shall be deemed to satisfy the requirements of the following federal laws: . . . (3) NEPA; (4) ESA; (5) NFMA; (6) MUSYA.” Pub. L. No. 104-19, §§ 2001-02, 109 Stat. 194 (1995). This rider has been upheld. *See Idaho Conservation League v. Thomas*, 917 F. Supp. 1458, 1463 (D. Idaho 1995); *Kentucky Heartwood, Inc. v. United States Forest Serv.*, 906 F. Supp. 410, 412 (E.D. Ky. 1995) (scope of review very narrow, i.e., whether the decision to sell salvage timber is arbitrary).

201. *Citizens For Envtl. Quality v. United States*, 731 F. Supp. 970 (D. Colo. 1989) (*Rio Grande*).

might seem. Indeed, the Eleventh Circuit ruled that harvesting timber on public lands was not a right—even a timber contract could be rescinded if other multiple uses would be impermissibly eclipsed.²⁰²

As Judge Dwyer noted, private lands can meet much of the present demand, supply could be increased by utilizing standing private forests and restricting log exports (bypassing local mills), and many mill closures have been caused by decreased needs for personnel (i.e., through automation).²⁰³ While the Forest Service's motive to assist local communities is laudable, in reality, "job losses . . . will continue regardless [of wildlife protection] . . . and . . . preservation of old growth [forests] brings economic benefits."²⁰⁴

In closing, the Forest Service has begun to "see the light"—that the NFMA diversity provision *does* put a limit on how much and where the agency can harvest timber. There is no question that the Service has been one of the most competent and professional agencies in its area of expertise, the cultivation and harvest of trees.²⁰⁵ Indeed, the harvesting of timber has always been one of the main purposes of the national forests.²⁰⁶ As noted in *Nicolet*, "it was precisely the [Service's] intervention in the past fifty years that permitted the forests to rejuvenate after the logging and fires prior to the 1930s."²⁰⁷ However, this expertise involved replanting after harvesting, a silvicultural practice. What is "new and foreign" to the agency is the ecosystem-wide preservation aspect of § 1604(g)(3)(B).²⁰⁸ Simply put, the Forest Service is realizing that it cannot really maintain diversity by utilizing a checkerboard of stands in various growth stages which

202. *Region 8 Forest Serv. Timber Purchasers Council v Alcock*, 993 F.2d 800, 808 (11th Cir. 1993).

203. *Seattle Audubon Soc'y v. Evans*, 771 F. Supp. 1081, 1094-95 (W.D. Wash. 1991).

204. *Id.* at 1095.

205. David H. Jackson, *Economic Suitability of Lands for Timber Production: A Proposed Rule of Reason*, 10 PUB. LAND L. REV. 73, 77-78 (1989).

206. *Sierra Club v. Robertson*, 845 F. Supp. 485, 489 (S.D. Ohio 1994) (*Wayne*).

207. *Sierra Club v. Marita*, 46 F.3d 606, 621 (7th Cir. 1995) (*Nicolet*).

208. "The fact is that few, if any, of the principal laws governing public land management are modeled upon contemporary ecological principles." Keiter, *supra* note 108, at 314. Congress has begun to propose various laws attempting to comprehensively protect species diversity on public lands, such as the National Biological Diversity Conservation and Environmental Research Act, H.R. 305, 103rd Cong., 1st Sess. (1993). *Id.* at 315.

will *all* be cut eventually. Instead, a handful of those “checker squares”—the old growth—must remain intact.