

Cooling the Core Habitat Provision of the Endangered Species Act Before It Goes Critical: Practical Critical Habitat Reformulation

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The Endangered Species Act contains provisions that aim to protect “critical habitat.” While these provisions have both generated controversy and served as fertile ground for legal, political, and economic theorists, they have done little to reduce the impact on endangered species from the land uses for which private owners put their property. This article synthesizes several of the most powerful criticisms of critical habitat designations, and corresponding responses, to argue that the agencies implementing the Act presently have low-cost options available under the Act that might pay big habitat dividends over the longer term. In a nutshell, these suggested improvements consist of the reworking of internal agency policies and manuals that structure how field office personnel conduct critical habitat analyses, interact with state and local governments, and partner with private landowners.

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I. SUMMARY	101
II. INTRODUCTION.....	101
A. Brief Overview of the Critical Habitat Designation Process.....	101
B. The Fish and Wildlife Service's Current Use and Perception of Critical Habitat	103
C. Benefits of Critical Habitat Designations	105
D. Criticisms of Critical Habitat Designations.....	106
III. WHAT SHOULD CRITICAL HABITAT BECOME?.....	108
A. The Mechanism of Implementation.....	110
B. Overcoming the Expense of Economics: Redefining the Economic Analysis.....	111
C. Distributing Designation Authority Among Levels of Government.....	114
D. Incorporation of Science into the Decision Analysis Guidelines	118
E. Expansion of Critical Habitat's Scope.....	119
IV. CONCLUSION	120

I. SUMMARY

Habitat loss, alteration, and degradation are the greatest threats to imperiled species in the United States.¹ The Endangered Species Act provides a mechanism for the protection of listed species' "critical habitat."² Although current critical habitat designations have benefited recovery for some species, historically they have been underutilized and some commentators have criticized them for their limited scope,³ high expense,⁴ scientific soundness,⁵ and as a questionable source of federal control over local land use.

The uniqueness of this article does not stem from its identification of the benefits and criticisms regarding the critical habitat designation [hereinafter "CHD"] process. Other scholarly discourse has already done so with much more detail and eloquence. Rather, the novelty of this article exists in the solution it poses. Through detailed "decision analysis guidelines" incorporated into a manual to guide the process of critical habitat designations, this article suggests a feasible method to retain the current benefits of critical habitat designations while mitigating the aforementioned criticisms.

II. INTRODUCTION

A. Brief Overview of the Critical Habitat Designation Process

Congress enacted the Endangered Species Act [hereinafter "Act"] in 1973 with three major purposes: (1) "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved," (2) "to provide a program for the conservation of such endangered species and threatened species," and (3) to take steps to achieve the goals of existing international environmental treaties and agreements.⁶ Consistent with the first purpose of conserving endangered species' local environs, the Act provides for the designation of a listed species' "critical habitat."⁷ Regulations define critical habitat as the specific areas within the geographical region occupied by the species at the time of listing "on which are found those physical

¹ See David S. Wilcove et al., *Quantifying Threats to Imperiled Species in the United States*, 48 *BIOSCIENCE* 607, 608 (1998).

² See generally 16 U.S.C. § 1533(b) (2006).

³ See Notice of Intent to Clarify the Role of Habitat in Endangered Species Conservation, 64 *Fed. Reg.* 31,871, 31,872 (June 14, 1999) [hereinafter Notice of Intent to Clarify].

⁴ *Id.*

⁵ See Amy N. Hagen & Karen E. Hodges, *Resolving Critical Habitat Designation Failures: Reconciling Law, Policy, and Biology*, 20 *CONSERVATION BIOLOGY* 399, 403 (2006).

⁶ 16 U.S.C. § 1531(b) (2006).

⁷ 16 U.S.C. § 1533(b).

or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection,” as well as areas outside the geographic range of the species that are nonetheless “essential to the conservation of the species.”⁸ In determining whether an area qualifies as essential, the factors considered are (1) whether there is space for individual and population growth, (2) availability of nutritional or physiological requirements, (3) availability of cover or shelter, (4) availability of breeding or rearing sites for offspring, and (5) whether the area is protected from disturbance or representative of the historical distribution of a species.⁹ Thus, a critical habitat designation does not necessarily encompass the entire geographic range that a species inhabits, but by the same token, it may also extend to areas that the species does not occupy.

The Act provides that, concurrent with the listing of a species, the Secretary of the Interior [hereinafter “Secretary”] shall designate critical habitat “to the maximum extent prudent and determinable” and “solely on the basis of the best scientific and commercial data available.”¹⁰ Unlike the listing procedure, which limits the Secretary’s discretion to determine a species’ threatened or endangered status based solely on non-commercial factors,¹¹ the Secretary shall only designate critical habitat “after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat” and “may exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat.”¹²

In considering whether a CHD would be “prudent and determinable,” the Secretary must account for several potential scenarios. Such a designation would not be “prudent” if the species is threatened by human taking and designating critical habitat would facilitate that taking by making the species’ location known, or if a designation of critical habitat would not be beneficial to the species.¹³ Additionally, designating critical habitat would not be “determinable” where sufficient information does not exist regarding either the impacts of the designation or the biologic needs of the species. If deemed prudent and determinable however, the Secretary then balances the biological benefits versus the economic impacts of such a designation.¹⁴ If the designation survives this stage, a proposed rule delineating the critical habitat is published for public comment.¹⁵

⁸ 50 C.F.R. § 424.02(d) (2010).

⁹ See 50 C.F.R. § 424.12(b) (2010).

¹⁰ 16 U.S.C. § 1533(a)-(b).

¹¹ See *id.* § 1533(a)(1)(A)-(E).

¹² *Id.* § 1533(b)(2).

¹³ 50 C.F.R. § 424.12.

¹⁴ 16 U.S.C. § 1533(b)(2).

¹⁵ See *id.* § 1533(b)(4)-(5).

Once critical habitat is designated, it only has a direct effect on federal agencies. Each federal agency must consult with the U.S. Fish and Wildlife Service [hereinafter “Service”] to ensure that the agency action will not likely result in the “destruction or adverse modification” of critical habitat.¹⁶ In consultation, the Secretary will then determine whether the agency action will violate any of sections of the Act and whether any reasonable and prudent alternatives to the suggested agency actions exist.¹⁷ After consultation, the Secretary will provide the agency with the predicted impact of the agency action on any endangered species and specify if reasonable and prudent alternatives that minimize that impact exist.¹⁸ However if no alternatives exist, the agency action cannot be authorized by the Secretary.¹⁹ Private parties are most likely to feel the indirect effects of CHDs through the federal agency nexus of licensing and permitting for specific proposed activities to take place on private or public lands, and should be considered in the Secretary’s balancing of economic impacts and biological needs.²⁰

B. The Fish and Wildlife Service’s Current Use and Perception of Critical Habitat

Despite explicit statutory language that authorizes – if not mandates – the designation of critical habitat, the Service does not designate critical habitat with regularity. “As of May 5, 2009, critical habitat has been designated for 523 of the 1,317 U.S. species listed as threatened or endangered.”²¹ Although only approximately one-third of listed species have critical habitat designated, this represents a significant increase not only from the beginning of the decade, but also compared to a few years ago.²² For example, between April 1996 and July 1999, the Service listed more than 250 species, but designated critical habitat for only two of them.²³

Economic reasons underlie the Service’s reluctance to designate critical

¹⁶ 16 U.S.C. § 1536(a)(2) (2006).

¹⁷ *See id.* § 1536(b)(4)(A).

¹⁸ *See id.* § 1536(b)(4)(C).

¹⁹ *See* Memorandum from David Bernhardt, Solicitor of Department of the Interior on The Secretary’s Authority to Exclude Areas from a Critical Habitat Designation under Section 4(b)(2) of the Endangered Species Act (Oct. 3, 2008), <http://www.doi.gov/solicitor/opinions/M-37016.pdf> at 11.

²⁰ *See id.*

²¹ U.S. Fish and Wildlife Service, *Critical Habitat: What is it?* July 2009, <http://www.fws.gov/midwest/endangered/saving/CriticalHabitatFactSheet.html>.

²² *See* U.S. Fish & Wildlife Service, *Critical Habitat: What is it?* Revised May 2000, <http://www.fws.gov/verobeach/images/pdflibrary/Critical%20Habitat%20Fact%20Sheet.pdf> (In May 2000, only 150 of the 1,231 listed species had designated critical habitat); *see also* Josh Thompson, *Critical Habitat Under the Endangered Species Act: Designation, Re-designation, and Regulatory Duplication*, 58 ALA. L. REV. 885, 891 (2007) (In 2007, 482 of the 1,007 listed species had designated critical habitat).

²³ S. Rep. No. 106-126, at 2 (1999).

habitat. Whereas the Secretary must only consider five discrete factors in the listing process, in critical habitat designations the Service must not only analyze the critical areas within and outside the species' geographic range essential to the species' conservation, but it must also consider "the economic impact, the impact of national security, and any other relevant impact, of specifying any particular area as critical habitat."²⁴ Because economic analyses can cost as much as \$500,000 within an annual listing budget of a few million dollars, the Service must carefully select their use and application.²⁵ Consequently, the Service has pursued other avenues to maximize conservation.²⁶

This selective approach was facilitated by a 1986 regulation that defined "destruction or adverse modification" of critical habitat as an "alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species."²⁷ Likewise, Section VII of the Act prohibits federal agencies from "jeopardiz[ing] the continued existence" of any listed species and requires agencies to consult with the Service regardless of critical habitat designation.²⁸ The 1986 regulation defined "jeopardiz[ing] the continued existence" as "to reduce appreciably the likelihood of both the survival and recovery of a listed species."²⁹ Therefore, the Service viewed both definitions and their effects as duplicative, imposing no additional restrictions upon agencies that would exist regardless of critical habitat designation. So long as an agency did not reduce the likelihood of a species' survival, regardless of its effect on recovery, the agency could take any action on designated critical habitat.³⁰ As a result, the designation of critical habitat was largely deemed an additional cost with no increased conservation benefit that would not exist otherwise.³¹

In recent years, however, many courts have held that the 1986 regulation, interpreting that the designation of critical habitat provides no additional restrictions beyond those within the preexisting jeopardy standard, is invalid.³² This invalidation has breathed new life into CHDs and created an onslaught of citizen suits petitioning for more critical habitat to be designated.³³

²⁴ See 16 U.S.C. § 1533(b)(2) (2006).

²⁵ See Notice of Intent to Clarify, *supra* note 3, at 31,873.

²⁶ See *id.*

²⁷ 50 C.F.R. § 402.02 (2010).

²⁸ 16 U.S.C. § 1536(a)(2) (2006).

²⁹ 50 C.F.R. § 402.02.

³⁰ See *Sierra Club v. U.S. Fish & Wildlife Serv.*, 245 F.3d 434, 439-45 (5th Cir. 2001) (holding that the adverse modification standard is inconsistent with legislative intent of ESA).

³¹ See Notice of Intent to Clarify, *supra* note 3 at 31,872.

³² See *Sierra Club*, 245 F.3d at 439-43; see also *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1069-70 (9th Cir. 2004); *New Mexico Cattle Growers Ass'n v. U.S. Fish & Wildlife Serv.*, 248 F.3d 1277, 1282-85 (10th Cir. 2001); *Conservation Council v. Babbitt*, 24 F.Supp.2d 1074, 1075-79 (9th Cir. 1998).

³³ See David Sunding, Aaron Swoboda & Jonathan Terhorst, *Federal Land Use Controls and*

C. Benefits of Critical Habitat Designations

Despite the resurgence in critical habitat designations over the last decade, the Service still suggests that designation only marginally improves upon the jeopardy standard by prohibiting agencies from destroying or adversely affecting areas currently unoccupied by the species, but that are nonetheless essential to the conservation of the species.³⁴ Others, however, have suggested that designation provides additional benefits.

First, critical habitat is said to provide more definite notice to agencies in determining whether to consult under Section VII of the Act.³⁵ A critical habitat's discrete boundaries and delineations provide notice of necessary consultation, whereas agency action that generally jeopardizes a species' continued existence may not appear as clearly.³⁶ Thus, a CHD informs potential private investors possessing the requisite federal nexus, as well.³⁷

Second, courts may be more likely to protect habitat when it has been deemed "critical."³⁸ In *Tennessee Valley Authority v. Hill*, the U.S. Supreme Court specifically relied on the fact that the construction area for the Tellico Dam was within snail darter critical habitat and subsequently enjoined the construction.³⁹ Pertaining to private or state party action in areas designated critical habitat, courts may be more likely to find that a "take" (through "harm") has occurred when a habitat modification actually kills or injures a species by "significantly impairing essential behavioral patterns, including breeding, feeding and sheltering" because areas designated critical habitat are deemed essential to the conservation of a species.⁴⁰

Finally, species with designated critical habitat are less than half as likely as species without critical habitat to have declining populations and more than twice as likely to have increasing populations.⁴¹ This observation, however, may actually be less novel than it appears. Species diversity and abundance correlate positively with habitat area,⁴² so species with protected habitat reap this benefit. It intuitively follows that species that have more resources devoted

the Planning Anticommons 2-3 (July 15, 2007), <http://are.berkeley.edu/~sunding/FederalLandUse.pdf> ("Proposed designations have included 6.9 million acres for spotted owl, 1.2 million acres for Canada Lynx, and 20,360 stream miles for salmon and steelhead.").

³⁴ See U.S. Fish and Wildlife Service, *supra* note 21.

³⁵ Jack McDonald, *Critical Habitat Under the Endangered Species Act: A Road to Recovery?*, 28 ENVTL. L. 671, 688 (1998).

³⁶ See *id.*

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 171 (1978).

⁴⁰ See McDonald, *supra* note 35, at 690.

⁴¹ Martin F.J. Taylor, Kieran F. Suckling & Jeffrey J. Rachlinski, *The Effectiveness of the Endangered Species Act: A Quantitative Analysis*, 55 BIOSCIENCE 360, 362 (2005).

⁴² See Ronny Millen & Christopher L. Burdett, *Critical Habitat in the Balance: Science, Economics, and Other Relevant Factors*, 7 MINN. J. L. SCI. & TECH. 227, 267 (2005).

to them will be better off and will command the most public concern.

D. Criticisms of Critical Habitat Designations

Criticisms of critical habitat include the provision's scope, expense, science, and federal control over local land use. First, critical habitat can be criticized for being limited in scope and effect. If no federal nexus exists within the critical habitat area,⁴³ no additional protections extend to the species (barring the proposed theory that courts will more likely find "takes" occurring in critical habitat).⁴⁴ Thus, species dependent on low elevation and fertile soils (which happen to also contain the greatest densities of humans), that exist outside the scope of traditional preserves, parks, and public lands,⁴⁵ and that lack a federal nexus, remain under-protected and gain no benefit from the CHD. Therefore, the preemptive benefits concomitant with the Section VII consultation are absent when the critical habitat lacks a public nexus.

Second, the sheer cost of critical habitat designation is a major criticism. As previously mentioned, the economic analysis for a single designation alone may comprise a large portion of the total annual listing budget.⁴⁶ The Service has stated that critical habitat designations represent a poor use of financial resources because "[t]he resources required to designate a critical habitat typically are ten times what would be required to list a backlogged candidate species."⁴⁷ Requiring critical habitat for just several species would devastate the annual listing budget.⁴⁸ Arguably, designating critical habitat for each species at the time of listing would ultimately be counterproductive to the purported goals of the Act because less species would be listed and other means of conservation would go neglected. The Service has also complained that the increase in citizen suits petitioning the Service has overextended its resources, yet courts have held that "the solution of being over-obligated and under-funded rests within Congress, and not the courts."⁴⁹ Thus, the courts remain unwilling to alleviate the associated fiscal stress that CHDs place on the agency's budget.

Third, from a scientific standpoint, the critical habitat designation process ignores how habitat elements provide different resources to a species' survival

⁴³ 16 U.S.C. § 1536(a)(2) (2006).

⁴⁴ See McDonald, *supra* note 35, at 690.

⁴⁵ See Susan Harrison, *Biodiversity and Wilderness: The Need for Systematic Protection of Biological Diversity*, 25 J. LAND RESOURCES & ENVTL. L. 53, 60-61 (2005). "Broadly speaking, the fertile, low-elevation, low-altitude areas that harbor the most native species also tend to attract and support the highest densities of humans. Thus, there may often be critical tradeoffs between protecting the lands that contain the greatest numbers of unprotected species, and preserving large blocks of little-altered natural habitat in which the sense of solitude and wildness prevails."

⁴⁶ See Notice of Intent to Clarify, *supra* note 3, at 31,873.

⁴⁷ Final Determination of Critical Habitat for the Southwestern Willow Flycatcher, 62 Fed. Reg. 39,129, 39,132 (July 22, 1997) [hereinafter Flycatcher Determination].

⁴⁸ See Notice of Intent to Clarify, *supra* note 3, at 31,873.

⁴⁹ *Butte Env'tl. Council v. White*, 145 F.Supp.2d 1180, 1185 (E.D. Cal. 2001).

and reproduction.⁵⁰ Resources beyond the key attributes recognized in the designation may play a vital role in the species' potential recovery but often go overlooked.⁵¹ For example, there may be vital minerals or soil properties beyond the traditional vegetation analyses not captured in the habitat assessment that contribute significantly to species' abundance.⁵² Additionally, the critical habitat designation process fails to account for source-sink metapopulation dynamics and emigration-immigration to and from other patches and populations.⁵³ Hypothetically, a sink patch could be designated as critical habitat, while a source patch could be excluded, and the CHD would have no effect on facilitating the recovery of the species.

Finally, "the greatest disadvantage of critical habitat is the controversy it creates. When lines are drawn on a map, opposition becomes galvanized. Critical habitat designation can inflame local interests, and trigger congressional pressure on the agency."⁵⁴ One could make the argument that the fallout from *Tennessee Valley Authority v. Hill* and the associated amendments to the Act were indirectly caused by local dissent regarding the critical habitat designation for the snail darter that halted construction of the Tellico Dam.

In some instances where a regulation has proposed listing a species or designating critical habitat, private landowners have acted under perverse incentive and removed all suitable habitat or developed the land as quickly as possible in fear of the economic loss associated with CHDs and species listings.⁵⁵ At the other end of the spectrum, the planning "anticommons" problem occurs when federally-implemented critical habitat designations overlap with uncoordinated local conservation efforts.⁵⁶ This lack of coordination reduces the stock of available land, thereby decreasing quantity and

⁵⁰ See Hagen & Hodges, *supra* note 5, at 403.

⁵¹ *Id.* The current factors considered in determining what areas of habitat are "critical" are (1) whether there is space for individual and population growth, (2) availability of nutritional or physiological requirements, (3) availability of cover or shelter, (4) availability of breeding or rearing sites for offspring, and (5) whether the area is protected from disturbance or representative of the historical distribution of a species. 50 C.F.R. § 424.12 (b)(1)-(5). Notably absent from this list of factors is the habitats' role in current metapopulation dynamics.

⁵² See Hagen & Hodges, *supra* note 5, at 403.

⁵³ See *id.* See also Millen & Burdett, *supra* note 42, at 256-57. Both articles cite the current critical habitat designation procedure's inadequacies in accounting for metapopulation dynamics, an evolving aspect of population dynamics and landscape ecology.

⁵⁴ McDonald, *supra* note 35, at 691.

⁵⁵ Jonathan H. Adler, *Anti-Conservation Incentives*, 30 REGULATION 54, 54-56 (2008). The author discusses landowners in North Carolina harvesting timber stands prematurely in response to proposed regulations aiming to protect the red-cockaded woodpecker on their land. He also provides an example of accelerated development in Tucson, AZ after critical habitat was proposed for the Cactus Ferruginous pygmy owl.

⁵⁶ See Sunding et al., *supra* note 33, at 3. The "anticommons" is wordplay on Garrett Hardin's classic 1968 paper "The Tragedy of the Commons" where multiple claims of ownership to a single parcel of land would result in overutilization and eventually render the total utility nil. In the case of the "anticommons" there is so much over-regulation that most utility in the land is lost.

significantly driving up the price of developable land.⁵⁷ Although these examples represent polar extremes of possible local response, they both implicate the major issues regarding federal involvement in local land use and planning. Whether the federal government should currently have so much lead control over critical habitat designations raises fundamental issues of federalism and represents one of the major issues with critical habitat implementation.⁵⁸

Deficiencies in current critical habitat designation procedures significantly outweigh the provision's benefits. In 2005, critical habitat was on the congressional chopping block to be repealed from the Act altogether.⁵⁹ Whether or not this constituted a mere political stunt, such an action would have been a significant blow to the "bite" and purpose of the Act, likely reducing the effectiveness of biodiversity conservation in the United States. Regardless of the proposal's underlying motivations, it illustrates the current perception of critical habitat. Repealing critical habitat, however, would not help achieve the Service's principal goal of returning "listed species to a point where protection of the Act is not longer required."⁶⁰

The attendant problems of current critical habitat implementation, considered altogether, have made it a vicious beast. CHDs require a significant portion of the listing budget. Budgetary constraints coupled with citizen suits and court orders have the potential to render the Service a politically unaccountable institution. Thus, in this author's opinion, the Service has the danger of becoming an extension of public interest groups affecting local land planning – a traditional realm of local and municipal councils – while using scientific methods of questionable integrity. Such federally centralized action has resulted in local public dissatisfaction or lack of coordination, which may result respectively in either a net loss of biodiversity or allowable development.⁶¹ If the current trend of court-compelled critical habitat designations continues, the legitimacy of the Act and the Service will receive even more scrutiny. Therefore, the scholastic and scientific communities must try to solve the current problems with the critical habitat designation process.

III. WHAT SHOULD CRITICAL HABITAT BECOME?

Before the critical habitat provision undergoes a debilitating overhaul or becomes eradicated altogether, the Service should attempt to remold it

⁵⁷ *Id.* at 4.

⁵⁸ See Millen & Burdett, *supra* note 42, at 228.

⁵⁹ A proposed bill including the repeal of critical habitat passed the House of Representatives by a vote of 229 to 193. See Threatened and Endangered Species Recovery Act of 2005, H.R. 3824, 109th Cong. (2005).

⁶⁰ See 50 C.F.R. § 424.11(d)(2) (2010).

⁶¹ See Sunding et al., *supra* note 33, at 3; Adler, *supra* note 55, at 54-56.

consistent with the drafters' intent of protecting the ecosystems on which listed species rely.⁶² The Service itself recognized this imperative in 1999 and solicited public comments on methods to streamline critical habitat designations.⁶³ However, the Service abandoned the effort, and no changes ever came to fruition. This section seeks to revive that lost effort and to propose a new method that maintains and expands the current benefits derived from traditional critical habitat implementation while attempting to eliminate or mitigate the program's current problems. Additionally, while extreme eco-centric approaches may exist, the proposed changes fall within the realm of practicability, as well as existing statutory and constitutional frameworks. The proposed reformulation will make critical habitat less costly, less dependent upon a federal nexus for effect, more connected to specific data about individual species, and more integrated with local and municipal governments for implementation, thus restoring their governmental roles as land use and planning administrators.

The conceptual framework of the proposed revision requires the designation procedure to incorporate "decision analysis guidelines" adapted from Hagen and Hodges⁶⁴ and similar to those used in the International Union for the Conservation of Nature (IUCN) criteria for international and regional species status determinations.⁶⁵ Hagen and Hodges have suggested an explicit step-by-step decision analysis for designating critical habitat.⁶⁶ This approach will help ensure good documentation for decisional reasoning and increase transparency in CHDs. The Service has adopted a similar method in its listing priority guidelines, which mitigates problems facing CHDs.⁶⁷ However, whereas the Service retains sole discretion regarding the Hagen and Hodges model, as well as the listing priority guidelines, the proposed "decision analysis guidelines" will have more local and state participation. Currently, the CHD guidelines do not provide enough guidance and are not tangible. The amount of discretion exercised turns the CHDs into litigation problems with terms like "prudent and determinable" and the weighing of benefits.⁶⁸ While these terms may contribute to the political accountability of the office by allowing the executive branch to exercise discretion in implementation, conservationist goals may benefit from a more limited, consistent approach. The decision analysis guidelines should read

⁶² 16 U.S.C. § 1531(b) (2006).

⁶³ See Notice of Intent to Clarify, *supra* note 3, at 31,873.

⁶⁴ See Hagen & Hodges, *supra* note 5, at 405.

⁶⁵ See Rebecca M. Miller et al., *National Threatened Species Listing Based on IUCN Criteria and Regional Guidelines: Current Status and Future Perspectives*, 21 CONSERVATION BIOLOGY 684 (2006).

⁶⁶ See Hagen & Hodges, *supra* note 5, at 405.

⁶⁷ See generally Endangered and Threatened Species Listing and Recovery Priority Guidelines, 48 Fed. Reg. 43,098 (Sept. 21, 1983).

⁶⁸ See 16 U.S.C. §1533(a)(3) (2006).

more like a “choose your own adventure” book, with the choices based on scientific data rather than personal preference.

The following sections attempt to identify the best procedural catalyst for executing the adapted “decision analysis guidelines.” This approach describes a general framework, but does not discuss specifics in great detail. The guidelines will be based on correcting the current shortcomings of the critical habitat provision, and will address its criticisms. By attempting to resolve the current problems associated with critical habitat designations, the biological effectiveness, efficiency, and public sentiment regarding critical habitat may greatly improve.

A. The Mechanism of Implementation

Determining the implementation process for the “decision analysis guidelines” requires consideration of two factors: (1) feasibility of implementation and (2) compliance with the existing statutory framework. Based on these factors, the best procedural mechanism for the decision guidelines would require a manual with incorporated “decision analysis guidelines.”

Incorporating changes to critical habitat through a manual is feasible for multiple reasons. First, the decision analysis guidelines will operate under preexisting directives and mandates of the Act, as well as under regulations governing critical habitat. Because the manual will “merely represent how the agency will treat . . . the governing legal norm,” it will not impose new legal obligations or require notice and comment rulemaking procedures.⁶⁹ The Act itself and the existing regulations are governing legal norms, and the manual will serve primarily as an internal agency procedure to increase effectiveness and efficiency under the Act. The manual will not impose new obligations on any regulated parties.

Second, by treating the manual as a policy statement and avoiding notice and comment procedures, the agency “retains the discretion and the authority to change its position – even abruptly.”⁷⁰ By retaining this power, the Service will have the discretion to make any adjustments in the manual using the decision analysis guidelines. Trial and error may work best for the Service’s regional offices to collectively find deficiencies in the proposed manual. It seems impractical to think that a manual would work flawlessly to regulate all of the nation’s habitats and species on the first try.

Third, the Service can implement the manual relatively quickly because the manual does not require a public comment period. Although it may take some time to determine the applicable focal issues of analysis, the guidelines will be

⁶⁹ *Syncor Int’l Corp. v. Shalala*, 127 F.3d 90, 94 (D.C. Cir. 1997).

⁷⁰ *Id.*

flexible and discretionary enough that the time-consuming effort to consider all angles and potential problems will not have to be spent.⁷¹

Finally, if after using the manual the Service wants to promulgate it as a rule, the Service can propose codification for the manual and subject it to public comment. In addition to public response, the Service will know from experience which aspects of the manual work and which do not.

The greatest benefit of using a flexible method derives from the experience gained by applying the manual in all of the regional offices. This nationwide application will give the Service the ability to propose variations of the manual for different regions, tailored to distinctive geographic attributes such as human population density or presence of public land. Commentators have long called for this type of decentralization and decreased regulatory homogenization because of the problematic nature of centralized federal regulation of local land use.⁷² In considering the dynamic nature of species and ecosystems throughout the country, the current national one-size-fits-all directives issued from a central source have proved inadequate and ineffective.

With a general framework of the proposed mechanism that will implement the decision analysis guidelines, the proposed manual must still overcome the deficiencies of the current critical habitat designation process. I will discuss the problems of the current critical habitat designation process in the order I consider to be most to least severe: (1) expense, (2) federal control over local land use, (3) incorporation of sound science, and (4) scope of application.

B. Overcoming the Expense of Economics: Redefining the Economic Analysis

As previously mentioned, critical habitat designations require consideration of “the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat.”⁷³ This substantial burden is absent from the listing procedure and is a major source of the Service’s traditional reluctance to designate critical habitat.⁷⁴ Two potential solutions exist which the “decision analysis guidelines” could incorporate to reduce the costs of performing economic analyses currently associated with designating critical habitat: (1) the obligation of performing the traditional economic analyses could be shifted to parties other than the Service, or (2) a

⁷¹ See Hagen & Hodges, *supra* note 5, at 405 (“[C]ritical habitat could be provisionally awarded to the area until the question[s] can be answered through research.”).

⁷² See generally Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159 (2006); Richard L. Revesz, *Federalism and Environmental Regulation*, 115 HARV. L. REV. 553 (2001). These authors make the argument that state governments should dictate local land uses and that a centralized agency making such decisions is inefficient and not representative of local concerns.

⁷³ 16 U.S.C. § 1533(b) (2006).

⁷⁴ See Notice of Intent to Clarify, *supra* note 3, at 31,872-83; Flycatcher Determination, *supra* note 47, at 39,132.

more qualitative analysis could replace the traditional quantitative method.

If the burden to perform the economic analysis for a critical habitat designation shifted to parties other than the Service, it would be likely that there would be an increase in the frequency of CHDs. The stigma of CHDs as “budget busters” would no longer exist. Under this approach, the agency would briefly consider the economic effects while allowing stakeholders, who have an interest in excluding areas from the designation, to repudiate the agency’s findings with the more formal and extensive analyses. However, several potential problems exist with this approach that make it less attractive.

First, a realistic concern exists that the economic analyses produced by stakeholders would be biased and unreliable. What private party would spend substantial resources on an economic analysis that does not serve their priorities? Second, such a construction may prove irreconcilable with the Act and regulations. Section IV of the Act reads “[t]he *Secretary* shall designate critical habitat” based on the “*best* scientific data available and . . . taking into consideration the economic impact” (emphasis added).⁷⁵ Additionally, current regulations require that “[t]he *Secretary* shall identify any significant activities . . . likely to be affected by the designation” (emphasis added).⁷⁶ Thus, if the agency performs less-than-formal economic analyses and leaves the in-depth analyses to the regulated parties with the “significant activities” to be regulated, a court may find the final agency action “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”⁷⁷ These concerns weigh heavily against the option of shifting the economic analyses away from the Service.

The more plausible solution would shift the paradigm of the economic analysis from the current quantitative approach to a more qualitative one. Existing criticisms of the quantitative method include that species preservation is not capable of being measured in an exact monetary value of costs and benefits, that too many uncertainties exist in these cost-benefit analyses that render the final analysis worthless, and that the technical terms in the data bar the lay person from understanding, which taints the democratic process.⁷⁸

While one may argue that species and land preservation are measurable in terms of opportunity loss, it seems difficult to place a value on the sheer existence of a species.⁷⁹ Instead, a simple comparative analysis between preservation and land utility loss would be better suited than a detailed analysis with calculated monetary values associated to the costs and benefits of a species.

⁷⁵ 16 U.S.C. § 1533(b)(2).

⁷⁶ 50 C.F.R. § 424.19 (2010).

⁷⁷ 5 U.S.C. § 706(2)(A) (2006).

⁷⁸ See Millen & Burdett, *supra* note 42, at 274. See also Amy Sinden, *The Economics of Endangered Species: Why Less Is More in the Economic Analysis of Critical Habitat Designations*, 28 HARV. ENVTL. L. REV. 129, 200-08 (2004).

⁷⁹ See Millen & Burdett, *supra* note 42, at 275.

Further, the value of wild species derives from their nonuse or inherent value, not tangible economic benefits.⁸⁰ The methods used for deriving an exact monetary value, such as willingness-to-pay surveys, rest on questionable grounds and compromise the entire outcome of economic cost-benefit analyses.⁸¹ Finally, the complex formulas involved in the traditional economic analyses may make the average citizen feel under-qualified to comment, thus deterring participation in the process.⁸²

Further, whereas the burden shifting option appears contrary to the existing statutes and regulations, simply changing the economic analysis from a complex, quantitative approach to a simpler, qualitative approach may stay within the statutory confines. The Secretary will still discharge the obligation. Because the quantitative approach possibly contains many uncertainties that may taint the overall analyses, it could also be argued that in reality the qualitative approach is the “best scientific and commercial data available,”⁸³ thus qualifying as the proper method to use. The guidelines can also serve as evidence that the Secretary considered the economic factors when making the determination, thus improving the chances that a judge will not deem the final designation arbitrary or capricious.⁸⁴

The criteria used in the qualitative analyses could easily be incorporated into the decision analysis guidelines. This more holistic approach would place less emphasis on precise calculations derived from questionable sources of underlying core data. Examples of such guidelines could include consideration of the effects of designation on local employment, iconic status of the species or an iconic species’ dependence upon the species under consideration, rarity and distribution, potential land uses, or necessity of the area proposed for designation. Many of these factors do not unambiguously possess monetary value. Balancing them generally in the aggregate may achieve the most efficiency, while still ensuring recognition of any potential severe hardships or economic losses on the local, and possibly, national scale. Because of the terms’ simplicity, public input may increase, which will further ensure broader consideration of a multitude of factors. Thus, while guidelines may restrict the Secretary’s discretion and executive accountability, that loss may be recovered through increased public participation resulting from a simpler economic analysis.

Complexity and time consumption of the analysis will decrease greatly, which will likely free much needed budgetary resources. The Service will be able to designate more critical habitat or utilize other programs as it sees fit. Overall,

⁸⁰ *See id.* at 278.

⁸¹ *See id.* at 278-79.

⁸² *See id.* at 280.

⁸³ 16 U.S.C. § 1533(b)(2) (2006). *See* 50 C.F.R. § 424.19 (2010).

⁸⁴ *See* 5 U.S.C. § 706(2)(A) (2006).

adoption of a qualitative economic analysis into the decision analysis guidelines represents a wise choice that will allow the Service to operate more effectively.

C. Distributing Designation Authority Among Levels of Government

The designation of critical habitat currently exists as a federal decision that affects local land use and development, traditionally the realm of state, local, or municipal government. As a result, unilateral federal control causes a myriad of problems, ranging from aggravated landowners destroying available habitat to uncoordinated local and federal planning.⁸⁵ This issue strikes at the core of environmental regulation, not just endangered species conservation. The traditional question was whether activity affecting the environment should be regulated at the federal or state level.⁸⁶ The existing exclusivity of regulatory roles stems from years of Supreme Court jurisprudence attempting to define non-overlapping, jurisdictional boundaries of state and federal government.⁸⁷ However, when the federal government primarily controls regulation, like endangered species conservation, the aforementioned problems occur. Additionally, when a singular, centralized regulatory program applies, the benefits of fifty varying regulatory schemes derived from the “laboratories of democracy”⁸⁸ do not accrue. In the field of wildlife biology, where composition of species, abundance, behavior, and even ecotypic differences within the same species vary tremendously across regions, it can be posited that geographically specific types of regulatory regimes may operate more effectively.

However, ceding environmental regulatory power entirely to states may also present potentially severe pitfalls. According to conventional theory, public interest groups that seek regulation only have the resources to lobby the federal legislatures, whereas businesses with deregulatory interests have the ability to access the individual legislatures of each state.⁸⁹ Known as the “Public Choice Claim,” this theory says that state sovereignty over environmental regulation would largely result in mass deregulation and a degraded environment. Professor Richard Revesz has largely dismissed the “Public Choice Claim” as lacking any empirical support. He advocates that states can fully provide adequate, if not greater, environmental regulation compared to that currently provided by the federal government.⁹⁰

⁸⁵ See Adler, *supra* note 55, at 55-56; Sunding et al., *supra* note 33, at 3.

⁸⁶ See Engel, *supra* note 72, at 163.

⁸⁷ See *id.* at 175.

⁸⁸ See *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) (“It is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.” *Id.* Thus, when a single regulatory scheme is applied federally, the individual state “laboratories” do not exist).

⁸⁹ See Revesz, *supra* note 72, at 560.

⁹⁰ See *id.* at 558.

While Revesz's argument may hold true for other forms of environmental regulation, the recent gray wolf saga in the Northern Rockies tends to support the underlying theories of the "Public Choice Claim," at least as applied to wildlife conservation. In short, reintroduction of gray wolves in Wyoming and Idaho during the mid-1990s provoked a strong rancher lobby opposition.⁹¹ At the time of reintroduction, the Service initially asked the states to manage the populations.⁹² Idaho refused, and Wyoming considered the wolves predators "to be shot on sight."⁹³ Under the Service's management, the wolves thrived, proving a great success story and resulting in their delisting in 2009. The states immediately adopted aggressive hunting seasons at the urging of local business interests, mainly rancher and trophy ungulate hunter groups, despite public interest petitions, as well as cries in the scientific community questioning the validity of the demographic data.⁹⁴ Predictably, the pro-business lobby flexed its muscles at the state level, and environmental public interest groups unsuccessfully sought redress through federal channels. Without passing judgment on the merits of the Service's decision to delist or the states' management plans, this example seems to fit within the preexisting notions of the "Public Choice Claim," thus reestablishing concern about pure state control of wildlife conservation. Although the gray wolf stands as an anecdotal example of particular historical contention not rising to the level of empirical data sought by Revesz, it may indicate future potential conservation issues under a solely state-controlled conservation strategy.

Because both alternatives of purely federal- and purely state-administered CHDs appear to possess significant shortcomings, the decision analysis guidelines should incorporate a hybridization of the two. This would retain some of the "laboratories of democracy" flexibility and benefits, as well as the assurance of maintaining a minimum floor of federal conservation measures. The type of flexibility sought already exists to some degree in voluntary conservation partnerships associated with individual parties. These partnerships both promote cooperation through avoidance of Section IX penalties and provide grants for preservation of habitat.⁹⁵ Through this approach, regional offices may develop and administer different decision analysis guidelines for different areas.

As Millen and Burdett suggest, the broad language that requires the Service to account not only for economic factors, but also "any other relevant impact" prior

⁹¹ See Rob Dubuc, *The Northern Rocky Mountain Wolf Delisting: What Would Leopold Think?*, 32 ENVIRONS ENVTL. L. & POL'Y J. 215, 218-19 (2009).

⁹² See *id.* at 219.

⁹³ *Id.*

⁹⁴ See Valerie Bittner, *Wolves in the Crosshairs: A Scientific Case Against the Final Rule of the U.S. Fish and Wildlife Service Removing Northern Rocky Mountain Gray Wolves From the Endangered Species List*, 15 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 281, 301-02 (2009).

⁹⁵ See Millen & Burdett, *supra* note 42, at 289-90.

to designating critical habitat⁹⁶ may also require consideration of the chilling and counterproductive effects that the current unilateral federal control has on municipal governments and individuals.⁹⁷ Therefore, this provision may implicitly impose a duty upon the Service to incorporate state and local governments in the process. However, the Constitution may limit the extent of such incorporation. The Supreme Court has “always understood that even where Congress has the authority under the Constitution to pass laws requiring or prohibiting certain acts, it lacks the power directly to compel the States to require or prohibit those acts.”⁹⁸ Although Congress has the ability to persuade State policy through “incentives,”⁹⁹ it may not circumvent the prohibition on direct commandeering of state legislatures by merely “conscripting the State’s officers directly.”¹⁰⁰ Accordingly, under the current structure of the Act, States must comply with the Act due to their acceptance of federal funds,¹⁰¹ and the federal government has the ability to regulate species directly through the Commerce Clause.¹⁰²

Like many environmental statutes, the Act adopts a “cooperative federalism” approach and provides that “the Secretary shall cooperate to the maximum extent practicable with the States.”¹⁰³ Scholars have recognized that although this authorization resembles those found in other statutes, the Act does not capitalize upon the full potential for cooperative federalism.¹⁰⁴ Further, the courts may have exacerbated the absence of state participation, especially in the realm of critical habitat designations. In *Natural Resource Defense Council v. United States Department of the Interior*, a leading case on the “not prudent” exception to CHDs, the Ninth Circuit rejected in dicta the Service’s argument that a “far superior” state-run comprehensive habitat management program sufficed as a substitute for federal designation of critical habitat.¹⁰⁵ The court reasoned that a “[c]ritical habitat designation triggers mandatory consultation requirements for federal agency actions involving critical habitat. The [state] alternative, in contrast, is a purely voluntary program that applies only to non-

⁹⁶ 16 U.S.C. § 1533(b)(2) (2006).

⁹⁷ See Millen & Burdett, *supra* note 42, at 298-99.

⁹⁸ *New York v. United States*, 505 U.S. 144, 166 (1992).

⁹⁹ *Id.*

¹⁰⁰ *Printz v. United States*, 521 U.S. 898, 935 (1997).

¹⁰¹ Fish and Wildlife Service Manual: Federal Aid Compliance Requirements, 523 F.W. 1 (1992), <http://www.fws.gov/policy/523FW1.html>.

¹⁰² See LAWRENCE R. LIEBESMAN & RAFE PETERSEN, *ENDANGERED SPECIES DESKBOOK* 56 (2003).

¹⁰³ 16 U.S.C. § 1535(a) (2006).

¹⁰⁴ See Robert L. Fischman & Jaelith Hall-Rivera, *A Lesson for Conservation from Pollution Control Law: Cooperative Federalism for Recovery Under the Endangered Species Act*, 27 COLUM. J. ENVTL. L. 45, 79 (2002).

¹⁰⁵ *Natural Res. Def. Council v. U.S. Dep’t of the Interior*, 113 F.3d 1121, 1126 (9th Cir. 1997).

federal land-use activities.”¹⁰⁶ However, this language does not seem to rule out a state program that would delegate mandatory designation authority back to the federal government over federal lands.

The decision analysis guidelines would allow voluntary state and local participation, thereby avoiding constitutional issues. The process resembles the delegation of federal permitting authority to states in other forms of environmental regulation.¹⁰⁷ When the Service announces that it is considering designating critical habitat, it will issue notice to the local governments in charge of regional land use planning. The local and municipal governments will then have the opportunity to designate and govern any area as critical habitat, pursuant to guidance from regional Service offices which will ensure that the local designations comply with federal standards. The Service will then review the proposed local designations to determine their adequacy compared with the federal standard. If approved, such areas will avoid federal designation, but the local governments must continue to enforce their proposed plans as long as the species remains listed. All local and state plans must contain provisions similar to those contained within the Act. For example, if local authority proposes an action to occur in locally-designated critical habitat, the authority must present the impacts of the action to the local land use committee to determine whether any options exist to mitigate the adverse effects. If not, the action cannot be authorized.

Notably, under the decision analysis guidelines, the Service still retains designation authority over federal lands. Additionally, other federal agencies will continue to engage in Section VII consultations with the Service. Federal retention of these functions should allow the state designations to remain valid under *Natural Resource Defense Council v. United States Department of the Interior*.¹⁰⁸

Sovereignty over local land use and avoidance of federal meddling should provide major incentive for state and local governments to perform such voluntary designations. Problems associated with uncoordinated conservation at varying levels of government should also diminish. Additionally, because local actors will make the decisions with greater per capita constituent representation, less local dissent and frustration should result.

Conversely, many developers have the ability to strong arm local land planning commissions.¹⁰⁹ Due to the day to day interactions with developers, many land use commissioners begin to view developers as their clients and partners within their jurisdictions, resulting in far greater access for developers

¹⁰⁶ *Id.* at 1127.

¹⁰⁷ *See, e.g.*, Clean Water Act, 33 U.S.C. §§ 1251-1376 (2008).

¹⁰⁸ *Natural Res. Def. Council*, 113 F.3d at 1127.

¹⁰⁹ *See* Vicki Been, “Exit” as a Constraint on Land Use Exactions: Rethinking the Unconstitutional Conditions Doctrine, 91 COLUM. L. REV. 473, 510 (1991).

to the local commissions.¹¹⁰ Local commissioners further serve developer's interests because of developers' financial and political contributions to elected members on local boards.¹¹¹ In this respect, the decision analysis guidelines will mandate local land use commissions to consider conservation goals and check the influence of developers over local land use commissions.

As an additional concern, federal oversight and evaluation of locally-derived critical habitat designations may demand too many administrative resources. Yet the Service has recently promoted voluntary cooperative conservation programs with individuals that require equal, if not more, oversight than the proposed decision analysis guidelines.¹¹² Therefore, the argument that the decision analysis guidelines demand too much fails when compared to the resources required for Service-promoted conservation partnerships.

In sum, the decision analysis guidelines contained within the proposed manual will create a hybrid power sharing scheme between federal, state and local governments in designating critical habitat. This approach will improve communication, increase coordination, and result in greater public participation and cooperation.

D. Incorporation of Science into the Decision Analysis Guidelines

The integrity and effectiveness of critical habitat designation rests upon sound scientific methods. Currently, designations receive significant scientific criticism for their failure to account for metapopulation dynamics.¹¹³ The term "metapopulation," coined by Richard Levins in 1970, has become one of the hallmarks of wildlife biology and landscape ecology.¹¹⁴ A metapopulation is defined as a series of groups of populations that occupy smaller patches of habitat, rather than one large continuous area.¹¹⁵ The way in which the groups interact with each other is known as metapopulation dynamics.¹¹⁶ Metapopulation theory has gained significant attention in recent years because it

¹¹⁰ See James Olmsted, *Handling the Land Use Case: A User's Manual for the Public Interest Attorney*, 19 J. ENVTL. L. & LITIG. 23, 46-47 (2004).

¹¹¹ See *id.* at 47.

¹¹² See generally Craig Manson, *The Collaborative Future of the Endangered Species Act: An Address to the Duke University School of Law*, 14 DUKE ENVTL. L. & POL'Y F. 291 (2004); Fish and Wildlife Service Manual: Partners for Fish and Wildlife Program, 640 F.W. 1 (1992), <http://www.fws.gov/policy/640fw1.html>. The address given by Assistant Secretary Manson advocated for an increase in the use of cooperative conservation with individuals. The FWS Manual on cooperative conservation demonstrates the amount of oversight and agency interaction needed to implement these programs.

¹¹³ See Hagen & Hodges, *supra* note 50, at 403; Millen & Burdett, *supra* note 42, at 256-57.

¹¹⁴ See Stephen J. Dinsmore & Douglas H. Johnson, *Population Analysis in Wildlife Biology*, in TECHNIQUES FOR WILDLIFE INVESTIGATIONS AND MANAGEMENT 154, 180 (Clait E. Braun ed., 6th ed. 2005).

¹¹⁵ See *id.*

¹¹⁶ See *id.*

deals with source-sink dynamics and connectivity among patches. Moreover, it represents a key component for calculating population viability in fragmented habitats.¹¹⁷ Metapopulation dynamics most frequently apply to species that occupy fragmented habitat matrices caused by human development.

Because habitat degradation and loss represent the greatest threats to most of the listed species in the United States,¹¹⁸ metapopulation theory seems particularly well-suited for endangered species conservation. Further, when analyzing species that occur sporadically across a landscape, one must “recognize that conclusions based on treating a population as continuous may be flawed.”¹¹⁹ As Hagen and Hodges note, one must not only identify the patch characteristics upon which species depend, but also the corridors that connect patches.¹²⁰

Because critical habitat includes not only occupied areas, but also areas outside the geographic range of the species that are nonetheless “essential for the conservation of the species,”¹²¹ the designation process could easily account for metapopulation dynamics. Thus, decision analysis guidelines contained in the manual could feasibly integrate metapopulation theory. The manual guidelines could contain step-by-step procedures, derived by the local field offices, to determine whether a particular area has low- or high-connectivity potential between primary habitat patches, and whether it should receive designation. The guided analysis contained in the manuals may particularly appeal to the scientific community because it reads like a dichotomous key for habitat selection and may be easily adjusted. Additionally, the guideline provisions could issue to the state and local governments when they are making designations, saving them expense and ensuring more uniformity among designations.

With the adoption of metapopulation theory, the decision analysis guidelines will better identify the areas that have any potential use for a species. Conversely, many areas that would receive designation under current procedures may now seem unnecessary and excludable under the proposed decision analysis guidelines in the manual. Using metapopulation theory will make critical habitat designations less sweeping and more selective. This, coupled with the perceived use of sound science, should increase the legitimacy of critical habitat and make CHDs more effective and efficient tools.

E. Expansion of Critical Habitat's Scope

Some have criticized critical habitat as having limited scope because it

¹¹⁷ *See id.*

¹¹⁸ *See* Wilcove et al., *supra* note 1.

¹¹⁹ Dinsmore & Johnson, *supra* note 114.

¹²⁰ Hagen & Hodges, *supra* note 5, at 403-04.

¹²¹ 50 C.F.R. § 424.02(d)(2) (2010).

requires a federal nexus to trigger the Section VII consultation.¹²² However, attempting to extend the scope of critical habitat through the decision analysis guidelines would prove unnecessary. Instead, delegation of critical habitat authority to states will indirectly circumvent the problem of lacking a federal nexus. When determining zoning and development, state and local governments' traditional role of land use planning will allow them to consider the effects that private actors will have upon critical habitat. Additionally, the Service's consultation requirements still apply to federal public lands administered by agencies if a proposed action may have an adverse effect on critical habitat. Thus, extending critical habitat authority to state and local governments avoids the issue of the scope of critical habitat.

IV. CONCLUSION

By adopting the suggested decision analysis guidelines, the traditional problems of expense, federal control over local land use, questionable science in the designation methods, and scope of effect associated with the critical habitat designation process will greatly diminish. As the human population in the United States continues to grow rapidly, wild species and their habitats will experience more pressure. Therefore, species' habitats must receive protection in an efficient and effective way. Although the solution proposed here does not constitute a panacea to all potential issues associated with critical habitat, I hope that it can serve as a launching point to stimulate scholarly thought on possible methods to reform the critical habitat designation process.

¹²² See LIEBESMAN & PETERSEN, *supra* note 102, at 21.