

MAKING REGULATION EVOLVE:
A CASE STUDY IN MALADAPTIVE MANAGEMENT

Alejandro E. Camacho

ABSTRACT

This Article is the first cross-disciplinary, comprehensive assessment of one of the earliest regulatory reinvention programs developed to foster more participation and adaptation in decision-making—the Endangered Species Act’s Habitat Conservation Plan Program. Drawing not only from legal sources but also integrating data from recent scientific studies, interviews, surveys of government officials, newspaper investigations, and unpublished databases, this Article delves into the pioneering but defective HCP program as an example of regulatory innovation gone awry.

In the active literature on regulatory reinvention, many have pointed to the HCP program as a prototype for collaborative, experimentalist innovations in governance. Though a few HCPs processes are promising examples of the value of broad participation and adaptation in regulation, this Article asserts that the HCP program, as implemented, largely allows for the proliferation of bilateral and inert agreements between agencies and developers for evading the ESA’s otherwise strict prohibitions. More fundamentally, the Article suggests that the HCP regulatory experiment is failing because the agencies charged with administering it have never seriously treated it *like* an experiment. As Congress again contemplates substantial ESA amendments, the Article argues that regulatory programs must themselves be periodically and systematically adapted in order for agencies, Congress and the public at large to learn and adapt from regulatory mistakes and successes. Only by viewing a regulatory program as an experiment, and by addressing the incentives of the agencies and applicants to cultivate participation and regulatory adaptation, can the HCP program—and indeed all regulation—evolve.

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INTRODUCTION

In 1982, Congress established what leading scholars have called a grand “experiment”¹ and “paradigm shift”² in regulatory design—the Endangered Species Act’s (“ESA”) Habitat Conservation Plan (“HCP”) program. Departing from the ESA’s initially strict and broad prohibition on harming any listed species, the 1982 ESA amendments authorized the issuance of incidental take permits (ITPs) that allowed protected species and/or their habitat to be harmed if carried out in conjunction with an approved HCP. HCPs were to rely on negotiated, collaborative decision-making and focus on developing creative, flexible ways for managing uncertain, evolving ecosystems based on the best available science. The HCP program was thus the earliest of a number of experimental innovations touted by many leading scholars as transforming administrative law from its traditionally static and inflexible “command-and-control” regulatory model into a negotiated process that balances public goals through both collaborative and adaptive decision-making.³

¹ E.g., Jody Freeman, *The Private Role in Public Governance*, 75 N.Y.U. L. REV. 543, 664 (2000) (referring to HCP program as an “experiment”); A. Dan Tarlock, *Fred Bosselman as Participant-Observer Lawyer: The Case of Habitat Conservation Planning*, 17 J. LAND USE & ENVTL. L. 43, 50 (2001) (“HCP experiments represent a potentially important turning point in environmental law.”); J.B. Ruhl, *Regulation by Adaptive Management-Is It Possible?*, 7 MINN. J.L. SCI. & TECH. 21, 39-40 (2005) (explaining the “HCP adaptive management experiment”); See also J.B. Ruhl & James Salzman, *Mozart and the Red Queen: The Problem of Regulatory Accretion in the Administrative State*, 91 GEO. L.J. 757, 847 n.289 (2003) (“The [HCP] program is often included as an example of an innovative performance-based regulatory reinvention.”).

² Lindell Marsh, *Conservation Planning Under the Endangered Species Act: A New Paradigm for Conserving Biological Diversity*, 8 TUL. ENVTL. L.J. 97, 98 (1994). See also Robert Thornton, *Searching for Consensus and Predictability Habitat Conservation Planning under the Endangered Species Act of 1973*, 21 ENVTL. L. 605, 607 (1991); David A. Dana, *The New Contractarian Paradigm in Environmental Regulation*, 2000 U. ILL. L. REV. 35, 38-40 (describing HCP program as the earliest occurrence of the “new contractarian paradigm” in administrative regulation).

³ See, e.g., Philip Harter, *Negotiating Regulations: A Cure for Malaise*, 71 GEO. L.J. 1 (1982); Daniel Farber, *Revitalizing Regulation*, 91 MICH. L. REV. 1278 (1993); Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1 (1997); Michael Dorf & Charles Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267 (1998); ARCHON FUNG & ERIK OLIN WRIGHT, *DEEPENING DEMOCRACY: INSTITUTIONAL INNOVATIONS IN EMPOWERED PARTICIPATORY GOVERNANCE* (2003); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342 (2004); Alejandro Camacho, *Mustering the Missing Voices: A Collaborative Model for Fostering Equality, Community Involvement and Adaptive Planning in Land Use Decisions: Installment Two*, 24 STAN.

Notwithstanding the scholarly support for these new experimental programs, few in-depth analyses of them exist in the literature. As the first comprehensive, cross-disciplinary assessment of the ESA's HCP program, this Article demonstrates the resistance to experimentation by both the regulators and the regulated in collaborative administrative programs, and the need to attend to the incentives of these actors for regulatory adaptation to succeed. In light of the recent and increasingly insistent appeals by scientists for workable solutions to address the alarming and worsening biodiversity crisis⁴—and as the U.S. Congress once again contemplates substantially modifying the ESA⁵—a comprehensive assessment of the HCP program is particularly valuable. As one of the first experimental approaches to governance seeking to reinvent public regulatory law, the HCP program serves as an ideal case study both for analyzing the value such characteristics bring to regulatory decisions and the suitability of existing regulatory institutions in developing them. Drawing not only from conventional legal primary and secondary sources but also integrating recent biological and social scientific studies, newspaper investigations, interviews, surveys of government officials, and unpublished scientific databases on HCPs, this Article attempts these functions.

When initially added to the ESA in 1982, the HCP program was seen by many as a fundamental shift in administrative regulation that incorporated two primary elements.⁶ The first “collaborative” element suggested that

ENVTL. L.J. 269 (2005); Jody Freeman & Daniel Farber, *Modular Environmental Regulation* 54 DUKE L.J. 795 (2005).

⁴ See Michel Loreau et al., *Diversity Without Representation*, 442 NATURE 245 (2006) (recent statement from nineteen preeminent biologists asserting: “There is ... clear scientific evidence that we are on the verge of a major biodiversity crisis. ... Despite this evidence, biodiversity is still consistently undervalued and given inadequate weight in both private and public decisions. There is an urgent need to bridge the gap between science and policy.”); E.O. WILSON, *THE DIVERSITY OF LIFE* 254 (1992) (stating biodiversity loss is the “scientific problem of great[est] immediate importance to humanity.”).

⁵ The U.S. House of Representatives passed a significant amendment to the ESA on September 29, 2005, proposing to replace critical habitat requirements with less restrictive “recovery habitat” requirements, provide incentive programs and guarantees to landowners, and pay landowners for the market value of development they could no longer undertake if found to be endangered species habitat. See *Threatened and Endangered Species Recovery Act of 2005 (TESRA)*, H.R. 3824, 109th Cong. (2005). A potential Senate bill focusing on similar issues has been referred to the Senate Environment and Public Works Committee, though the Senate is unlikely to consider any such bill until 2007. See *Collaboration and Recovery of Endangered Species Act (CRESA)*, S. 2110, 109th Cong. (2005). See also Allison Freeman, *Sen. Inhofe ready to take over ESA rewrite*, ENERGY & ENVIRONMENT DAILY, April 4, 2006; Allison Freeman & Dan Berman, *Senate ESA rewrite unlikely this year*, *Chafee says*, ENERGY & ENVIRONMENT DAILY, March 29, 2006.

⁶ See *infra* Part I.

engaging the affected stakeholders in meaningful involvement is likely to lead to better regulatory decisions—and ultimately more effective environmental protection—than traditional regulation that relies almost exclusively on agency resources. The second “adaptive” element emphasized a reliance on “contingency planning”⁷ or “adaptive management”⁸ protocols—repeated review and, if necessary, adjustment of regulatory restrictions to account for new information or changed circumstances that arise during implementation. Many, including private land developers, government officials, academics, and environmentalists have hailed the program as innovative and a more effective approach to administrative regulation than the traditional, command-and-control model.

The past two decades have seen the HCP program become “the centerpiece of ... endangered species and ecosystem conservation policy,”⁹ as HCPs have proliferated throughout the United States. Though some HCPs processes have voluntarily replicated these collaborative efforts, this Article argues that key interpretations and management decisions by the United States Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) (collectively, the Services)¹⁰ by and large allow for decision-making processes to provide few meaningful participation opportunities.¹¹ As a result, existing empirical evidence demonstrates that most HCP processes relegated interested stakeholders to a narrow and late role in the decision-making process while the Services and developer-applicant negotiate the vast majority of the plan.¹² This often produces risky regulatory approvals that lack key information despite the ESA’s stated requirement of basing permit decisions on the “best scientific and commercial data available.”¹³ Although the growing empirical evidence demonstrates that providing early and periodic opportunities for participation in HCP processes is valuable, information gathering regularly ignores opportunities for alternative information from non-developer stakeholders and rarely encourages independent scientific review.

⁷ See 50 C.F.R. §§ 17.22(b)(5), 17.32(b)(5) (2004)

⁸ See Availability of a Final Addendum to the Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, 65 Fed. Reg. 35,252 (June 1, 2000) (hereinafter “HCP Handbook Addendum”).

⁹ Bradley Karkkainen, *Adaptive Ecosystem Management and Regulatory Penalty Defaults: Toward a Bounded Pragmatism*, 87 MINN. L. REV. 943, 970 (2003)

¹⁰ The ESA is primarily administered by the Secretary of the Interior through the FWS for land and freshwater species, and the Secretary of Commerce through the NMFS for marine species. See 16 U.S.C. § 1532(15) (2000) (defining “Secretary”); *Id.* § 1533(a)(2); 50 C.F.R. § 424.01 (2005) (FWS/NMFS joint regulations).

¹¹ See *infra* Part II.A.

¹² See *infra* Part II.B.

¹³ 16 U.S.C. 1536(a)(2) (2000).

Perhaps more discouraging is the limited use of contingency planning and adaptive management by the Services, despite how critical such activities are to the participatory democratic and conservation goals of the HCP program. Because of key interpretations by the Services, and the incentives created for applicants and Service staff by these interpretations, this adaptive management approach fundamental to the HCP program has largely been disregarded.¹⁴ Monitoring of plan compliance is usually deficient, if not entirely absent, and subsequent adaptation of HCPs to integrate new information acquired during implementation is even rarer. Though the Services have repeatedly suggested adaptive management and contingency planning would be valuable characteristics of HCPs, their actions suggest an aversion to implementing these characteristics.

Yet, as problematic as these defects may be, this Article more fundamentally argues that the HCP program has failed to embrace experimentalism and adaptive management *with regard to the regulatory process itself*.¹⁵ By being demonstrably un-adaptive, the Services have failed to take full advantage of the valuable knowledge readily available from preceding HCP processes. Not only are the Services insufficiently adapting individual HCPs; they have failed to gather systematic information about the HCP program, learn from its successes, or adjust to its failures. In doing so, the HCP program has merely repeated the mistakes of its regulatory brethren in failing to harness the potential for regulatory learning that exists for every regulatory program. By adjusting the Services and applicants incentives toward greater attention to monitoring, collection and dissemination of information about HCP processes, Congress, the Services, and the public can finally gain the tools to assess regulatory outcomes.¹⁶ Only then can the HCP program—long seen as a pioneering approach in the ever-increasing wave of alternatives to command and control regulation in environmental governance—serve as a model for other regulatory programs on the potential for regulatory learning.

The Article consists of five parts. For purposes of the case study, Part I provides a detailed account of the development of the ESA's HCP program as one of the earliest experiments in regulatory innovation. It also explores the promise of adaptively managing regulatory processes both for environmental conservation and administrative regulation generally. Parts II through V assess how well the HCP program has lived up to the promise of adaptive regulation. Part II analyzes the Services interpretation and

¹⁴ See *infra* Part III.

¹⁵ See *infra* Part IV.A

¹⁶ See *infra* Part IV.B.

management of the participation requirements of the HCP program. This Part marshals evidence signifying the considerable value of participation in fostering better quality decisions and decision-making processes, as well as the Services' and applicants systematic aversion to it. Part III then examines the significant Service interpretations of the monitoring and adaptation elements of the HCP program, exploring the incentives and disincentives that the Services have created for applicants and Service staff to provide opportunities for monitoring and adaptation. This Part then analyzes the impeding effect of these interpretations on monitoring and adaptation in the implementation of HCPs.

In Part IV, the Article explores the maladaptive management of the HCP program as a whole, arguing that the Services ignore the need for programmatic, systematic collection and analysis of HCP formation, information gathering, and implementation processes for learning about the HCP program itself. Finally, Part V draws on the lessons of the HCP program experiment to explore the ways the HCP program should be altered to serve as a more participatory, experimental, adaptive, and ultimately more cost effective, approach to environmental regulation. The Article concludes by considering how lessons learned from the HCP program about adaptive regulatory management can help us to develop protocols of adaptively managing other regulatory processes generally.

I. THE EVOLUTION OF THE HABITAT CONSERVATION PLAN PROGRAM

A. *The Endangered Species Act and Habitat Conservation Plan Amendments*

The federal Endangered Species Act has evolved dramatically since its adoption in 1973 as a strict and broad prohibition on the "take" of any endangered species.¹⁷ Congress enacted the ESA to actualize the public goal of "better safeguarding, for the benefit of all citizens, the Nation's heritage in fish, wildlife, and plants,"¹⁸ recognizing many vulnerable species are of "esthetic, ecological, educational, historical, recreational, and scientific value."¹⁹ From the outset, the ESA declared as a primary purpose not only the conservation of endangered and threatened species but also the protection of the ecosystems upon which such species depend.²⁰ To fulfill

¹⁷ 16 U.S.C. §1532 (2000).

¹⁸ *Id.* § 1531(b).

¹⁹ *Id.* § 1531(a).

²⁰ See *id.* § 1531(b); see also *Babbitt v. Sweet Home Chapter of Communities for a Greater Oregon*, 515 U.S. 687, 699-700 (1995) (acknowledging that the ESA serves to

these goals, the ESA incorporated restrictions applied to species listed as threatened or endangered based on a careful assessment of the risk of extinction relying on “the best scientific and commercial data available.”²¹

Established as a strict prohibition statute, the ESA expressly forbids harmful actions against listed endangered and threatened species.²² In addition to the Section 7 prohibition of any federal action²³ that would “jeopardize the continued existence”²⁴ of any listed species or result in the modification of their “critical habitat,”²⁵ the ESA through Section 9 strictly prohibited the “take” of any endangered species by any person, public or private.²⁶ The statute extends the stringent ban on taking quite broadly to include to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct,”²⁷ and subsequent judicial opinions have upheld expansive regulatory interpretations of this language to include habitat modification.²⁸

protect vulnerable ecosystems, with listed species functioning as an indicator that the underlying ecosystem is faltering).

²¹ 16 U.S.C. § 1531(b)(1) (2000). Species may be listed only after public participation and solicitation of independent scientific peer review. *See id.* § 1533 (b)(1)(A); Endangered and Threatened Wildlife and Plants: Notice of Interagency Cooperative Policy for Peer Review in Endangered Species Act Violations, 59 Fed. Reg. 34,720 (July 1, 1994).

²² *See* 16 U.S.C. § 1533(b) (2000 & Supp. III 2004); 16 U.S.C. § 1538(a) (2000).

²³ Action includes any activity “authorized, funded, or carried out, in whole or in part, by federal agencies.” 50 C.F.R. § 402.02 (2005).

²⁴ 16 U.S.C. § 1533 (2000 & Supp. III 2004). *See also T.V.A. v. Hill*, 437 U.S. 153 (1978) (finding jeopardy determination must be made strictly without regard to costs and benefits of the proposed agency action).

²⁵ 16 U.S.C. § 1533(b)(2) (2000 & Supp. III 2004). If a species is listed, the Services must designate critical habitat (CH) in areas where the species is currently found or which might provide additional habitat for the species’ recovery. *See id.* However, FWS has only designated CH for thirty-six percent of listed domestic species as of June 2006. *See* Eugene H. Buck et al., *The Endangered Species Act (ESA) in the 109th Congress: Conflicting Values and Difficult Choices*, RL33468 CONGRESSIONAL RESEARCH SERVICE REPORT 3 (2006).

²⁶ 16 U.S.C. § 1538(a)(1) (2000). For threatened species, the take prohibition is not automatic; FWS may apply the ban at its discretion (*see id.* § 1533(d)), which it has done in most cases. *See* TIMOTHY BEATLEY, HABITAT CONSERVATION PLANNING: ENDANGERED SPECIES AND URBAN GROWTH 17 (1994).

²⁷ 16 U.S.C. § 1532(19) (2000).

²⁸ *See Palila v. Hawaii Dept. of Land & Natural Resources*, 639 F. 2d 495, 497 (9th Cir. 1981); *Babbitt v. Sweet Home Chapter of Communities for a Greater Oregon*, 515 U.S. 687 (1995) (determining Service interpretation of statutory definition of “harm” to include “significant habitat modification or degradation” that significantly impairs breeding, feeding or sheltering patterns was reasonable).

In the first decade after the statute's enactment, Section 9's strict and broad prohibition on the take of listed species caused concern not only among private landowners and developers, but also government officials and environmentalists. Unsurprisingly, landowners were alarmed by the financial implications and criminal liability of the broad take prohibition's land use restrictions.²⁹ Yet some officials and environmentalists also found Section 9 ineffective as a tool for species conservation on private lands.³⁰ Evidence indicated that species continued to decline and habitat continued to be destroyed after listing, in large part because of poor enforcement due to the Services' limited resources³¹ and the difficulty of monitoring and enforcement on private lands.³² In addition, because of the strict effect of Section 9, listing decisions became very adversarial and politicized,³³ and the Services were reluctant to enforce a take prohibition that raised such political rancor.³⁴ Finally, environmentalists criticized Section 9's focus on prohibiting harm to isolated species and guarding fragmented habitat rather than fostering the ESA's goal of a more comprehensive, ecosystem-based approach to conservation and recovery.³⁵

In part as a result of these criticisms, in 1982 the ESA was amended to allow the Services to issue "incidental take" permits (ITPs), allowing permittees to harm or even destroy members of a protected species. Under Section 10(a), the Services may issue a permit to private and non-federal public actors authorizing the incidental take of a listed species in conjunction with an approved habitat conservation plan (HCP).³⁶ In

²⁹ See LAURA HOOD, FRAYED SAFETY NETS: CONSERVATION PLANNING UNDER THE ENDANGERED SPECIES ACT 1-2 (1998).

³⁰ Michael Bean and D.S. Wilcove, *The Private Land Problem*, 11 CONSERVATION BIOLOGY 1-2 (2001).

³¹ See HOOD, *supra* note 29, at 1.

³² See George F. Wilhere, *Adaptive Management In Habitat Conservation Plans*, 16 CONSERVATION BIOLOGY 20, 23 (2001) (stating landowners often interfered with monitoring and refrained from reporting when species were on property). HOOD, *supra* note 29, at 1-2 (reporting that due to limited Service oversight, landowners sometimes destroyed potential habitat before it was discovered).

³³ Craig Thomas, *Habitat Conservation Planning: Certainly Empowered, Somewhat Deliberative, Questionably Democratic*, 29 POLITICS & SOCIETY 105, 107 (2001).

³⁴ See Buck et al., *supra* note 25, at 19; Wilhere, *supra* note 32, at 22.

³⁵ See HOOD, *supra* note 29, at 3; Thomas, *supra* note 33, at 107.

³⁶ 16 U.S.C. § 1539(a) (2000). Federal agencies and federal permittees can also circumvent the Section 9 prohibitions if the Service issues an incidental take statement (ITS) through the Section 7 interagency consultation process. See *id.* §§ 1539(a)(1)(B), 1536(b)(4). Though this Article focuses on the HCP program, many of the same criticisms are also likely to be valid for the Section 7 ITS program (which accounts for at least as many incidental take activities as HCPs). An ITS flows from the Services to an applicant through the permitting agency, and is in many respects the functional equivalent of a

seeking an ITP, a developer-applicant must submit a proposed HCP that specifies: (1) the planned action's projected impact; (2) steps to be taken to monitor, lessen, and mitigate the taking's impact; (3) funding for such mitigation; (4) alternatives to the taking the applicant considered and "the reasons why such alternatives are not being utilized;" and (5) any other measures the Service requires.³⁷ To grant an ITP, the Services must, after affording opportunity for public comment,³⁸ find that: (1) the proposed taking is "incidental;"³⁹ (2) the HCP minimizes and mitigates the taking's impacts "to the maximum extent practicable;" (3) the applicant has ensured "adequate" funding for the HCP; (4) the taking will not "appreciably" reduce the likelihood of survival and recovery of the species; and (5) the HCP meets any other "necessary or appropriate" measures.⁴⁰ Section 10(a)'s moderation of the ESA's strict prohibition thus allowed for the first time the systematic consideration of questions of economic feasibility in species conservation disputes.⁴¹ As evident from such open terms as "practicable," "adequate," "appreciably," and "appropriate"—and reinforced by the Service's interpretive guidelines⁴²—the requisite findings provide considerable flexibility to whoever is allowed access to participate in the formation of the plan.

section 10 authorization. Like ITPs, an ITS is not available for public examination or comment until it has been finalized. *See* U.S. FISH & WILDLIFE SERVICE, ENDANGERED SPECIES ACT SECTION 7 CONSULTATION HANDBOOK 1-12 (1998).

³⁷ 16 U.S.C. § 1539(a)(2)(A) (2000).

³⁸ *See id.* § 1539(c); 50 C.F.R. § 17.22(c) (2005) (FWS implementing regulations); *Id.* § 222.24(a) (NMFS implementing regulations).

³⁹ An "incidental take" is broadly defined as any taking "that result[s] from, but [is] not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02 (2005).

⁴⁰ 16 U.S.C. § 1539(a)(2)(B) (2000). *See also Gerber v. Norton*, 294 F.3d 173, 185 (D.C. Cir. 2002) (finding Service, and not just developer, must determine that alternatives considered were impracticable).

⁴¹ Section 7's 1978 Endangered Species Committee amendments do allow federal actions a cabinet-level extraordinary exemption from the prohibition against jeopardizing a listed species when the action's benefits "clearly outweigh" the benefits of conservation alternatives. *See* 16 U.S.C. § 1536(e) (2000). However, only one exemption has ever been executed pursuant to this section. *See* Buck et al., *supra* note 25, at 19, 23-24.

⁴² The Services' jointly promulgated "HCP Handbook" provides that any mitigation mandated in an HCP must be "commensurate with the impacts," and based on a "sound biological rationale." U.S. FISH & WILDLIFE SERVICE & NATIONAL MARINE FISHERIES SERVICE, HABITAT CONSERVATION PLANNING HANDBOOK 3-19, 7-3 (1996) (hereinafter "HCP HANDBOOK"). The HCP Handbook also provides two variables in determining the sufficiency of proposed mitigation: (1) the extent to which the measures provide substantial benefits to species; and (2) whether mitigation is the maximum practicable in light of the "costs and benefits of additional mitigation," the applicant's abilities, and mitigation provided by other applicants in similar circumstances. *Id.* at 3-19, 7-3.

B. An Experiment in Collaborative and Adaptive Regulation

The introduction of the HCP process to the ESA was not only touted as a method for taking into account economic considerations, but more widely as an innovative, collaborative shift in environmental dispute resolution. Though there were many appeals to soften Section 9's strict prohibition, the prototype for the amendments actually adopted came directly from a successful collaborative planning effort in San Bruno, California that assembled a wide range of interested parties in a steering committee to resolve a complex development and species conservation dispute.⁴³

The flaws of Section 9's restrictive approach were starkly evident on San Bruno Mountain. Because the underlying ecosystem and even the listed species were vulnerable to non-development threats such as nonnative species, merely prohibiting development from harming the listed species and habitat would not only frustrate economic interests but long-term conservation concerns as well.⁴⁴ As a result, federal, state and local officials, landowners, developers, and conservation organizations engaged in a multilateral, rigorous data-gathering and negotiation process seeking an alternative that culminated in a 30-year conservation agreement. The accord allowed limited development that would take critical habitat but provide a long-term program funded by the development to protect and enhance the remaining plan area as habitat.⁴⁵ The plan relied on (1) shared information gathering on the impact and alternatives of the proposed take based on the best available science, (2) meaningful multiparty deliberation on the mitigation plan for the species, and (3) continued monitoring and adjustment during implementation to manage and restore the evolving ecosystem for the life of the plan.⁴⁶

The San Bruno HCP's integration of these characteristics into the decision-making process was a central motivating factor for the 1982 ESA amendments.⁴⁷ In adopting the amendment, Congress stated that the San

⁴³ See Thornton, *supra* note 2, at 622; BEATLEY, *supra* note 26, at 17.

⁴⁴ See HOOD, *supra* note 29, at 30; Zygmunt Plater, *The Embattled Social Utilities of the Endangered Species Act - A Noah Presumption and Caution Against Putting Gasmasks on the Canaries in the Coalmine*, 27 ENVIRON. LAW 845, 874 n.111 (1997).

⁴⁵ See Lindell Marsh & Robert Thornton, *The San Bruno Mountain Habitat Conservation Plan*, in MANAGING LAND-USE CONFLICTS 114, 119-125 (1987).

⁴⁶ See Michael Bean et al., RECONCILING CONFLICTS UNDER THE ENDANGERED SPECIES ACT 52 (1991).

⁴⁷ See BEATLEY, *supra* note 26, at 17, 19; Graham Lyons, *Habitat Conservation Plans: Restoring the Promise of Conservation*, 23-Fall ENVIRONS ENVTL. L. & POL'Y J. 83, 102 (1999).

Bruno HCP was the model for the Section 10(a) incidental take permit and that the “adequacy of similar conservation plans should be measured against the San Bruno plan.”⁴⁸ Congress emphasized the public involvement and support for the San Bruno process,⁴⁹ the reliance on “independent exhaustive biological study,” a more comprehensive, ecosystem-based approach,⁵⁰ and effective, adaptable implementation.⁵¹ Service officials underscore that the HCP program was created out of a desire to transform the ESA from a static and narrow emergency statute into a multilateral, collaborative tool for addressing complex, long-term environmental disputes.⁵² Similarly, practitioners involved in species conservation disputes saw the HCP program as a necessary alternative to the ESA’s conventional but inflexible, expensive, and ultimately ineffective approach to resolving resource conflicts:

[I]t was becoming increasingly apparent that the wildlife conservation objective would be difficult, if not impossible, to attain by utilizing our historic project-by-project, adversarial, quasi judicial processes. ... The interest in the HCP approach reflects the conclusion that the result of this historic model has been fragmented and ineffective mitigation, very expensive and often unsuccessful attempts to save “endangered” species, an unacceptable level of frustration and conflict, and the belief that we must do better, without compromising the two principles of biodiversity conservation and freedom.⁵³

In its promotion of meaningful participation and long-term ecosystem-based solutions, the HCP program’s multilateral, agreement-based approach to regulation was one of the earliest in a wave of experimental approaches

⁴⁸ H.R. Rep. No. 97-835, 97th Cong., 2d. Sess. 31 (1982). *See also id.* (stating the HCP process could “reduce conflicts between listed species and economic development activities,” “integrate non-Federal development and land use activities with conservation goals,” “provide a framework that would encourage ‘creative partnerships’ between the public and private sectors” and “create a climate of partnership and cooperation.”); Thornton, *supra* note 2, at 624; HCP HANDBOOK, *supra* note 42, at 1-2.

⁴⁹ *See* Lyons, *supra* note 47, at 102 (“Congress was sure to point out the fact that local citizens and environmental organizations supported the San Bruno plan.”).

⁵⁰ H.R. REP. NO. 97-835, at 32 (1982).

⁵¹ *See id.* at 31, 32 (1982).

⁵² *See* George Frampton, *Ecosystem Management in the Clinton Administration*, 7 DUKE ENVTL. L. & POL’Y 39, 40 (1996) (key Interior Department official stating HCP reforms represent an effort to transform the ESA from “a species-by-species ‘emergency room’ regulatory tool or safety net into a comprehensive vehicle for regional multi-species habitat planning in collaboration with state and local governments, private landowners and other interest groups.”); Robert D. Thornton, *Habitat Conservation Plans: Frayed Safety Nets or Creative Partnerships?*, 16 NAT. RESOURCES & ENV’T 94 (2001).

⁵³ Marsh, *supra* note 2, at 110.

to governance that have since percolated in public regulatory law.⁵⁴ Such innovations seek to reinvent regulation to address widespread concerns regarding the ineffectiveness and adversarialism of existing decision making processes⁵⁵ by incorporating more meaningful participation opportunities and flexibility in a wide range of regulatory processes.⁵⁶ Established programs in this vision have been relatively few in number at the federal level,⁵⁷ but they have nonetheless arisen in a variety of local and less formal regulatory contexts.⁵⁸ In addition, some existing conventional regulatory programs are being modified to be more adaptive to changing circumstances and new information.⁵⁹

In this context, a number of models have been proposed in the legal and social science academies emphasizing the value of participation and adaptation in making public governance more effective and fair. These models, and the experimental programs upon which they are based, rely heavily on promoting participation by the affected parties and the development of regulatory institutions that allow for flexibility and learning in and through the regulatory process.⁶⁰ Numerous new conceptions of regulation identified as “empowered participatory governance,”⁶¹

⁵⁴ See Camacho, *supra* note 3, at 273-75.

⁵⁵ See Freeman, *supra* note 3, at 3, 35 (1997); Harter, *supra* note 3, at 6-7 (1982).

⁵⁶ See LAWRENCE SUSSKIND ET AL., USING ASSISTED NEGOTIATION TO SETTLE LAND USE DISPUTES: A GUIDEBOOK FOR PUBLIC OFFICIALS 19-23 (1999); Judith E. Innes, *Planning Through Consensus Building*, 62 AM. PLAN. ASS’N. J. 460, 464-65 (1996); *Cases and Commentaries*, THE CONSENSUS BUILDING HANDBOOK: A COMPREHENSIVE GUIDE TO REACHING AGREEMENT 679-1010 (Lawrence Susskind et al. eds., 1999).

⁵⁷ In addition to the ESA’s HCP program, the most prominent examples of federal negotiated administrative processes include regulatory negotiation under the Negotiated Rulemaking Act (Negotiated Rulemaking Act of 1990, 5 U.S.C. §§ 561-70 (2000)) and the negotiation of Final Project Agreements under the Environmental Protection Agency’s Project XL. See Regulatory Reinvention (XL) Pilot Projects, 60 Fed. Reg. 27,282 (May 23, 1995).

⁵⁸ See FUNG & WRIGHT, *supra* note 3, at 6-14; SUSSKIND ET AL., *supra* note 56, at 19-23; Lobel, *supra* note 3, at 404-07.

⁵⁹ See, e.g., National Environmental Policy Act Revised Implementing Procedures, 69 Fed. Reg. 10,866 (Mar. 8, 2004) (amending NEPA implementation regulations to make adaptive management an explicit goal of NEPA environmental impact review).

⁶⁰ See, e.g., Freeman, *supra* note 3, at 22, 28-29 (emphasizing harnessing and enhancing the capabilities of private and democratic institutions through processes that encourage broad participation, a problem solving orientation, adaptable regulatory solutions, accountability through interdependence and mutual monitoring, and a flexible, engaged agency).

⁶¹ FUNG & WRIGHT, *supra* note 3, at 15; ARCHON FUNG, EMPOWERED PARTICIPATION: REINVENTING URBAN DEMOCRACY (2004). See also CHARLES SABEL ET AL., BEYOND BACKYARD ENVIRONMENTALISM (2000).

“collaborative governance,”⁶² “democratic experimentalism,”⁶³ and “directly deliberative polyarchy”⁶⁴ stress the value of multilateral deliberation in fostering more informed and widely supported regulatory decisions. In addition to its communitarian value,⁶⁵ many claim an open participatory process can thwart the potential for capture and corruption associated with conventional bilateral approaches to regulation, provide valuable information for shaping regulatory decisions that are more satisfactory to those affected and the public generally,⁶⁶ and enhance accountability for governmental services and decisions.⁶⁷ Drawing on a pragmatic notion of decision-making as an ongoing, iterative process of design, implementation and evaluation,⁶⁸ these and other scholars⁶⁹ also promote the development of regulatory institutions that allow for flexibility and learning within the regulatory process.⁷⁰ Regulation is reconceived of as a continuing process of monitoring and adaptation that must be flexible to maximize effectiveness.⁷¹ Though the commitments to participation and

⁶² See generally Freeman, *supra* note 3; Camacho, *supra* note 3.

⁶³ Dorf & Sabel, *supra* note 3, at 286-87.

⁶⁴ *Id.* at 288 (defined as “citizens in each locale participate directly in determining and assessing the utility of the services local government provides, given the possibility of comparing the performance of their jurisdiction to the performance of similar settings.”); Joshua Cohen & Charles Sabel, *Directly-Deliberative Polyarchy*, 3 EUR. L. J. 313-340 (1997).

⁶⁵ See Freeman, *supra* note 3, at 27.

⁶⁶ See Thomas Beierle & Jerry Cayford, *Dispute Resolution as a Method of Public Participation*, in THE PROMISE AND PERFORMANCE OF ENVIRONMENTAL CONFLICT RESOLUTION 53, 63-66 (Rosemary O’Leary & Lisa B. Bingham eds., 2003) (discussing the instrumental, substantive and normative values of public participation); Dorf & Sabel, *supra* note 3, at 317 (discussing fundamental value of direct and continuous participation).

⁶⁷ See Dorf & Sabel, *supra* note 3, at 288 (stating local participation in service provision evaluation can serve to increase the accountability of regulatory institutions).

⁶⁸ See *id.* at 285 (stating pragmatism accepts “the impossibility of defining first principles that survive the effort to realize them, as a constitutive feature of thought and action, and not as an unfortunate incident of modern political life”).

⁶⁹ Proponents of “eco-pragmatism” and “jurisdynamics” also emphasize an understanding of the law as a fundamentally iterative process. For a comprehensive justification of eco-pragmatism, see DANIEL FARBER, *ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD* (1999); Daniel Farber, *Building Bridges over Troubled Waters: Eco-pragmatism and the Environmental Prospect*, 87 MINN. L. REV. 851 (2003). For a complete account of jurisdynamics, see THE JURISDYNAMICS OF ENVIRONMENTAL PROTECTION: CHANGE AND THE PRAGMATIC VOICE IN ENVIRONMENTAL LAW (Jim Chen ed., 2003); Jim Chen, *The Pragmatic Ecologist: Environmental Protection as a Jurisdynamic Experience*, 87 MINN. L. REV. 847 (2003).

⁷⁰ See Freeman, *supra* note 3, at 28-29; Dorf & Sabel, *supra* note 3, at 285.

⁷¹ See Freeman, *supra* note 3, at 28 (“[A] flexible, adaptive system capable of responding to advances in science, technology, knowledge, and shifting human judgments will produce better rules that are more likely to accomplish legislative goals.”).

adaptation do not necessarily require a commitment to the other, many suggest that they are synergistic.⁷²

These negotiated regulatory processes are promoted as new private-public relationships that harness the capacities of affected private parties to assist in governance.⁷³ Rejecting the perception of regulation as an authoritarian exercise of power through static, detailed, uniform rules,⁷⁴ proponents suggest that regulation should more appropriately be understood as a set of negotiated relationships analogous to bilateral or multilateral contract.⁷⁵ Negotiated regulatory decision-making is seen as enhancing both governmental and private power by ensuring private involvement in public decision-making, while allowing agencies to influence projects in more effective ways.⁷⁶

Despite the growing theoretical literature in support of this professed paradigm shift, fundamental questions still persist about the promise of this burgeoning new generation of administrative regulation. Can administrative institutions adapt to new modalities of regulation that require transparency, dexterity in the adoption and implementation of regulatory decisions, and a re-conception of the agency's role as one of facilitator/mediator? What factors are essential for fostering an adaptive approach to regulation? In what regulatory contexts is a collaborative, adaptive approach more likely to flourish? As one of the earliest versions of multilateral, collaborative and adaptive regulation, the HCP program is an ideal case study of the challenges of this new paradigm, providing valuable early lessons on the capacities of existing administrative institutions to engage in adaptive regulatory management in other contexts. Unfortunately, as detailed in Parts II through IV, *infra*, the experience of the HCP program is that much must evolve in existing institutions for adaptive regulation to have any chance of success.

II. AN AVERSION TOWARD PARTICIPATION

As implemented by the Services, the 1982 HCP regulatory experiment has undoubtedly transformed the ESA. Though at first only a dozen HCPs were approved in the decade following institution of the HCP program, they exploded in use during the Clinton and Bush (II) administrations, with three

⁷² See J.B. Ruhl, *Is the Endangered Species Act Eco-Pragmatic?*, 87 MINN. L. REV. 885, 936 (2003).

⁷³ See Freeman, *supra* note 3, at 4; Harter, *supra* note 3, at 103.

⁷⁴ See Freeman, *supra* note 3, at 28-29.

⁷⁵ See Freeman, *supra* note 1, at 548-49.

⁷⁶ See *id.* at 671.

hundred HCPs adopted by the end of 2000⁷⁷ and over 460 HCPs approved to date.⁷⁸ Furthermore, as detailed in this Part, there is encouraging evidence that the more collaborative, multilateral prototype on which the 1982 HCP amendments relied has considerable promise in cultivating better informed, and ultimately higher quality, regulatory decisions. Unfortunately, as a result of limited Service interpretations of Section 10(a) and inhibited program management, existing empirical evidence reveals that the HCP program predominantly has served merely to allow bilateral, ill-informed HCPs to circumvent the ESA's Section 9 take prohibition.

A. *Designing Participation's Role*

The success of the San Bruno HCP approach of comprehensive, long-term planning relied in part on bringing together for thorough discussion a broad range of parties that represented different stakes in the problem. Providing opportunities for all affected parties to interact with Service officials in the plan formation and implementation processes would serve to increase (1) the information available regarding the various interests and proposed plan's possible effects and alternatives, (2) the likelihood of affected parties' support for the plan, and (3) the likelihood of successful implementation and enforcement of the plan.⁷⁹ The prototype forum for participation was the multilateral stakeholder steering committee, which allowed interested and affected parties to participate in setting plan objectives, providing and reviewing data on the impacts and alternatives of the proposed take, and deliberating on the appropriate mitigation and recovery plan for species.⁸⁰ Though affected parties are not provided a veto power on an HCP's provisions, they are given substantial access and meaningful opportunities to participate—resulting in an HCP that most if not all parties (including environmentalists) considered acceptable.⁸¹ By integrating the various affected parties early and throughout the agreement formation and implementation processes, collaborative regulation would

⁷⁷ See STANFORD ENVIRONMENTAL LAW SOCIETY, THE ENDANGERED SPECIES ACT 133 (2001).

⁷⁸ See U.S. Fish and Wildlife Service, *Endangered Species Habitat Conservation Planning*, http://ecos.fws.gov/conserv_plans/public.jsp (last visited Aug. 14, 2006).

⁷⁹ See, e.g., JEREMY ANDERSON ET AL., BALANCING PUBLIC TRUST AND PRIVATE INTEREST: PUBLIC PARTICIPATION IN HABITAT CONSERVATION PLANNING, A SUMMARY REPORT 13 (1998).

⁸⁰ Steering committees are "a group of persons who represent affected interests in a broad-scale HCP planning area and generally oversee HCP progress and development." HCP HANDBOOK, *supra* note 42, at 3-3.

⁸¹ See Marsh & Thornton, *supra* note 45, at 128; BEATLEY, *supra* note 26, at 17. In this sense, the original San Bruno HCP construct resembles a multilateral accord that brings interested stakeholders together to address development-conservation disputes.

serve to better approximate the public interest than traditional processes that rely on the habitually under-resourced and overwhelmed Services to establish the public interest.

Though proponents of the HCP program and Congress emphasized the value of and need for public participation and detailed information gathering for the success of HCPs,⁸² the 1982 amendments were more elusive. Section 10(a)'s brief language only states that the Services must afford an "opportunity for public comment" before making findings regarding the permit application.⁸³ Furthermore, Section 10(c) requires a minimum of thirty days for interested parties to comment on a permit application.⁸⁴ Nonetheless, the Services are provided significant discretion to shape the timing, amount and types of participation by interested stakeholders and the public generally in the HCP formation and implementation processes.⁸⁵ For example, in response to widespread criticism regarding the lack of meaningful participation opportunities for non-applicant stakeholders in the HCP process, the Services opted to lengthen the minimum public comment period required for larger HCPs.⁸⁶ Though the Services did not vary the type or extent of participation or even try to synchronize participation opportunities to when key decisions were being made, they nonetheless demonstrated the flexibility they have in shaping participation in the HCP process.

Although the 1982 amendments did not add any new express participation requirements, some early HCPs nonetheless relied on the San Bruno HCP approach. These HCPs incorporated rigorous scientific data during HCP development and substantial opportunities for participation during the HCP process's information gathering, negotiation and implementation phases.⁸⁷ This led many government officials, developers

⁸² See *supra* notes 47 - 53 and accompanying text.

⁸³ 16 U.S.C. § 1539(a)(2)(B) (2000).

⁸⁴ See *id.* § 1539(c); 50 C.F.R. § 17.22(c) (2005) (FWS implementing regulations); *Id.* § 222.24(a) (NMFS implementing regulations).

⁸⁵ See ANDERSON ET AL., *supra* note 79, at 22.

⁸⁶ The Services extended the comment period to sixty days except for "low effect" HCPs (thirty days), individual permits under a program-level HCP (thirty days), and large-scale, regional, or exceptionally complex HCPs (ninety days unless there was significant public participation during HCP development). See HCP Handbook Addendum, *supra* note 8, at 35,242, 35,256.

⁸⁷ See Laura Watchman et al., *Science & Uncertainty in Habitat Conservation Planning*, 89 AMERICAN SCIENTIST 4, 4 (2001); Thornton, *supra* note 2, at 631-32.

and environmentalists to support the HCP process as a valuable model for resolving complex and contentious conservation/development conflicts.⁸⁸

However, as the HCP program has grown, the Services have interpreted the ESA's flexibility regarding participation to consign any multilateral, collaborative procedures to the whim of the applicant. The Services take the position that other than a brief comment period provided immediately before HCP approval, any outside involvement throughout the HCP formation and implementation processes is at the applicant's subjective discretion.⁸⁹ The Services do claim to strongly encourage integrating public input throughout the HCP process,⁹⁰ but do not require it. The Services justify this interpretation based on the statutory language that it is the applicant who "submits to the Secretary a conservation plan"⁹¹ and claim that the ESA only requires an "opportunity for public comment" before the Service finally approves the plan.⁹² Because of these provisions, the Services assert that the HCP is the applicant's plan on which they *cannot* impose participation restrictions until after the application is formally submitted and deemed complete.⁹³

Yet nothing in these brief statutory provisions precludes requiring other interested stakeholders to have access to any early and ongoing negotiations about the framework and composition of the HCP, or to be able to comment or even participate in the scoping of the plan.⁹⁴ Indeed, the statute does not

⁸⁸ See Steve Vanderheiden, *Habitat Conservation Plans and the Promise of Deliberative Democracy*, PUBLIC INTEGRITY 205, 209 (2001).

⁸⁹ See HCP Handbook Addendum, *supra* note 8, at 35,246-47 ("[W]e maintain that the inclusion of other interested parties in the development of an HCP is ultimately the decision of the applicant. The ESA and its implementing regulations do not mandate public participation before an applicant submits a permit application; only a public comment period after it is submitted and published in the Federal Register.").

⁹⁰ See HCP HANDBOOK, *supra* note 42, at 3-3 ("[T]he Services should encourage the applicant to provide opportunities to brief or inform representatives of interested parties of key elements or issues to be addressed in the proposed HCP."); HCP Handbook Addendum, *supra* note 8, at 35,247 ("We strongly encourage applicants to include more public participation at all stages of development."). See also *id.* at 35,256 ("The Services will strongly encourage potential applicants to allow for public participation during the development of an HCP, particularly if non-Federal public agencies ... are involved.").

⁹¹ 16 U.S.C. § 1539(a)(2)(A) (2000).

⁹² *Id.* § 1539(a)(2)(B).

⁹³ See Jon Luoma, *Habitat-Conservation Plans: Compromise or Capitulation?*, AUDUBON 43 (Jan-Feb 1998). Indeed, one past FWS director claimed that "[i]f we had our druthers, we'd certainly open up the HCP process to more public involvement. But the way the law's written, it's not our HCP." *Id.*

⁹⁴ See NATURAL HERITAGE INSTITUTE, WHERE PROPERTY RIGHTS AND BIODIVERSITY CONVERGE: LESSONS FROM EXPERIENCE IN HABITAT CONSERVATION PLANNING 20 n.85

require *any* negotiations between Service staff and the developer-applicant over a plan's provisions before the draft plan is formally submitted. These bare statutory provisions also do not mandate that any negotiations that do occur before formal application submittal *must* occur without any access or opportunity for input by other interested stakeholders. Other than making the bare assertion that they do not have the authority to shape participation requirements, the Services provide no additional support for their claim.

Significantly, the steering committee feature key to the original HCP's success is not required under the Services' interpretation. Though the Services permit the use of steering committees throughout the HCP process and emphasize their possible utility to applicants, an applicant can simply refuse such a working group.⁹⁵ When used, steering committee members are appointed by the applicant-developer.⁹⁶

As with the negotiation of HCPs, the Services also authorize subsequent alterations to HCPs without the involvement of other stakeholders. In fact, the Services encourage making some amendments to HCPs or ITPs informally, away from the scrutiny of non-applicant stakeholders.⁹⁷ While the Services do *allow* the involvement of "other stakeholders to help identify the alternative strategies," and the use of both scientific advisory committees and independent peer review to examine a monitoring program, they again leave such involvement to the total discretion of the applicant.⁹⁸ Whether in a concerted effort to persuade developers to enter into HCPs,⁹⁹ a

(2000) ("Other federal statutes allow stakeholders to help shape natural resource use and protection. ...Nothing in the ESA precludes the Services from employing similar measures to involve the public in the HCP development process.").

⁹⁵ See HCP HANDBOOK, *supra* note 42, at 3-3, 3-4 (explaining applicants may decline such processes if they view them as "giving 'outside interests' too much access," or allow for "the intrusion of outside interests into proprietary or sensitive economic matters.").

⁹⁶ See *id.* at 3-3.

⁹⁷ See *id.* at 3-33. Though limited to situations where an adopted HCP included "specific procedures for incorporating minor amendments so that the public had an opportunity to comment on the process," such procedures allow a developer-applicant to make subsequent changes to the HCP without public input as long as the net effect on the species is not "significantly different" than analyzed when the HCP was approved. *Id.*

⁹⁸ HCP Handbook Addendum, *supra* note 8, at 35,253.

⁹⁹ Several commenters have noted that the Services' developer-friendly interpretations are a result of President Clinton's Interior Secretary Bruce Babbitt's calculated decision to expand usage of ITPs. See John Leshy, *The Babbitt Legacy at the Department of the Interior: A Preliminary View*, 31 ENVTL. L. 199, 213-14 (2001) (Interior Department Solicitor's account); David Dana & Susan Koniak, *Bargaining in the Shadow of Democracy*, 148 U. PA. L. REV. 473, 511-512 (1999); Ruhl, *supra* note 72, at 936 ("Babbitt not only stuck to the HCP program reforms in the face of intense opposition from preservationists, he broadened them ... with adaptive management as the central

belief in their expertise¹⁰⁰ and the triviality of participation,¹⁰¹ or simply a reticence toward change and learning, the Services have failed to establish any requirement or substantial incentive for applicants to engage other parties.

B. Devaluing Participation

The Services' decision to merely encourage multilateral stakeholder participation and only require a short, post-negotiation public comment period has been the determining factor shaping the role of participation in the HCP program. Existing evidence substantiates that the Services' interpretations simply fail to value participation or link it to when it might serve a useful function: when information is being gathered, perspectives are being shaped, alternatives are being considered, and actual decisions are being made.

Though published studies by the Services are nonexistent, existing independent data demonstrates that the "vast majority" of adopted HCPs are subject to little if any participation from the public or interested stakeholders during HCP formation and approval.¹⁰² A comprehensive University of Michigan analysis determined that outside stakeholders were involved in less than forty percent of the HCPs studied.¹⁰³ Unfortunately,

implementation approach." Cf. A. Dan Tarlock, *Slouching Toward Eden: The Eco-Pragmatic Challenges Of Ecosystem Revival*, 87 MINN. L. REV. 1173, 1199 (2003) ("[T]he Babbitt Department of Interior promoted AM [adaptive management] to induce stakeholder participation in large-scale, multi-species HCPs, as a way to counter efforts to roll back the ESA").

¹⁰⁰ See *infra* notes 313 – 320 and accompanying text.

¹⁰¹ See ANDERSON ET AL., *supra* note 79, at 30.

¹⁰² John Kostyack, *Habitat Conservation Planning: Time to Give Conservationists and Other Concerned Citizens a Seat at the Table*, 14 ENDANGERED SPECIES UPDATE 51, 52 (1997). See also HOOD, *supra* note 29, at 43-44; ANDERSON ET AL., *supra* note 79, at 9; Holly Doremus, *Preserving Citizen Participation in the Era of Reinvention: The Endangered Species Act Example*, 25 ECOLOGY L.Q. 707, 713 (1999); Michael Lipske, *Giving Rare Creatures A Fighting Chance*, 36 NATIONAL WILDLIFE 2, 4 (1998) ("Landowners and government representatives hammer out the details behind closed doors. Public review typically occurs only after the plan has been created.").

¹⁰³ See ANDERSON ET AL., *supra* note 79, at 17. Though applicants were moderately or actively involved before the comment period in 91% of the HCPs studied, not even one environmental group was at least moderately involved before the comment period in 51% of the HCPs. See STEVEN YAFFEE ET AL., *BALANCING PUBLIC TRUST AND PRIVATE INTEREST: AN INVESTIGATION OF PUBLIC PARTICIPATION IN HABITAT CONSERVATION PLANNING* 5-3, 5-5 (1998). In only a minority of cases did local governments (40%), business groups (28%), or independent scientists (28%) so participate prior to the comment period. See *id.* at 5-5, 5-6, 5-9. Even the higher local government participation level is

though the HCP process provides considerable opportunities for negotiation over the scope of development and species conservation,¹⁰⁴ this negotiation is usually restricted to the applicant and Service staff.¹⁰⁵

Other stakeholders are habitually relegated to a comment period that is both cursory¹⁰⁶ and late,¹⁰⁷ usually after the key aspects of the plan have been negotiated extensively over a long period.¹⁰⁸ In contrast, existing evidence shows that participation is more likely to affect an HCP the earlier that it occurs in the process.¹⁰⁹ This evidence is consistent with empirical studies analyzing other regulatory processes.¹¹⁰ Unfortunately, participation

misleading; the study found that local government participation was closely correlated with whether the government owned land subject to the HCP. *See id.* at 5-5.

¹⁰⁴ *See* David Moser, *Habitat-Conservation Plans Under the U.S. Endangered Species Act: The Legal Perspective*, 26 *Environmental Management* S7, S10 (2000) (stating HCPs are “rarely submitted to the FWS ‘cold,’ ... FWS strongly prefers to work with applicants in developing the HCP.”).

¹⁰⁵ *See* Kostyack, *supra* note 102, at 52.

¹⁰⁶ *See* YAFFEE ET AL., *supra* note 103, at A-Weyerhaeuser-5 (“Many considered the time provided for public review ‘woefully inadequate considering the technical issues involved and the difficulty in getting documents.’”) (citing environmental representatives).

¹⁰⁷ *See* Barbara Pederzoli, *Public Participation and Biological Soundness in Habitat Conservation Plans*, MASTER’S THESIS, SAN JOSE STATE UNIVERSITY 75 (1999) (finding participation occurred during early design phase in only eight of thirty HCPs studied (27%)); ANDERSON ET AL., *supra* note 79, at 17 (finding outside stakeholders “tended to be more involved during the comment periods ... than during earlier phases of the planning process when most key HCP decisions are made.”).

¹⁰⁸ *See* Patrick Parenteau, *Rearranging the Deck chairs: Endangered Species Act Reforms in an Era of Mass Extinction*, 22 *WILL. & MARY ENVIR. J.* 227, 309 (1998); Luoma, *supra* note 93, at 43 (“[O]nce HCPs receive that preliminary approval, the details are published in *The Federal Register*, and public comment is considered. But in many cases federal regulators have by that point already been closely involved in developing the HCP. ... Fish and Wildlife Service officials have frequently provided extensive technical support ... and engaged in detailed give-and-take negotiating.... Public notice ... comes only when the giving and taking is over.”).

¹⁰⁹ *See* YAFFEE ET AL., *supra* note 103, at 5-13 (“[O]n average more significant changes occurred before the comment period than during the comment period, or after HCP approval.”); ANDERSON ET AL., *supra* note 79, at xv (“[I]n those cases where public participation resulted in substantive changes to the HCPs, public participation invariably began early in the process.”).

¹¹⁰ *See* Stephanie Tai, *Three Asymmetries of Informed Environmental Decisionmaking*, 78 *TEMPLE L. REV.* 659, 693 (2005); Donna M. Nagy, *Playing Peekaboo with Constitutional Law: The PCAOB and Its Public/Private Status*, 80 *NOTRE DAME L. REV.* 975, 1062 (2005) (describing the Administrative Procedures Act’s call for widespread public participation in the early stages of rulemaking, before policy decisions get “chiseled into bureaucratic stone”); Mary Grisez Kweit & Robert W. Kweit, *The Politics of Policy Analysis: The Role of Citizen Participation in Analytic Decision Making*, in *CITIZEN PARTICIPATION IN PUBLIC DECISION MAKING*, 19, 25-26 (Jack DeSario & Stuart Langton eds., 1987) (describing negative practical impacts of providing participation opportunities

rarely makes a difference in the HCP program¹¹¹ because outside stakeholders typically are allowed to the drafting table only after the HCP is drafted.¹¹² In the rare circumstances when included in plan formation by developers, stakeholders tend to be involved only in providing information or reviewing technical data and not in deliberations as to the terms of the HCP.¹¹³ Even when early public briefings provide the public an opportunity for input, the applicant typically still controls the process.¹¹⁴

Weak stakeholder involvement is particularly egregious for HCPs in which the applicant was a private developer rather than a public body.¹¹⁵ Two comprehensive studies have found that the level of participation voluntarily provided by the applicant was highly correlated with whether the permittee was a private or public entity.¹¹⁶ These typically larger,

only later in decision-making process).

¹¹¹ ANDERSON ET AL., *supra* note 79, at xv (“[P]ublic participation resulted in significant substantive changes to only three out of forty-five responding HCPs.”). *See also id.* (finding in more than seventy-five percent of the HCPs studied, public participation led to “only minimal or moderate changes”).

¹¹² *See, e.g.,* YAFFEE ET AL., *supra* note 103, at A-Orange County-9 (quoting local government administrator as stating: “The problem was people felt they had already missed the point to really affect the plan and that decisions were already made. So a lesson we learned ... is the need to do more public workshops before the comment period—when it is easier to make adjustments.”).

¹¹³ *See* David Ostermeier et al., *Habitat Conservation Planning: Current Processes and Tomorrow’s Challenges*, 2 ENVIRONMENTAL PRACTICE 166, 172 (2000).

¹¹⁴ *See, e.g.,* YAFFEE ET AL., *supra* note 103, at A-Weyerhaeuser-4.

Certainly, for most development projects necessitating an HCP, there typically are other local and/or state government fora (e.g., local development permitting) at which stakeholders may have the opportunity to provide input on the proposed development. As a result, focusing exclusively on HCP participation may underestimate the extent of participation opportunities available, as some of the informational and other values of participation that are not attained through the HCP formation process may to a limited extent be provided in one of these other nodes of participation. Yet it would be a mistake to suggest that the existence of these fragmented and uncoordinated fora could come close to resolving the participation limitations of the HCP program. Beyond the certain inefficiency of this fragmented approach, the conservation questions considered in HCP deliberations are often only tangentially attended to in these other fora.

¹¹⁵ *See* Ostermeier et al., *supra* note 113, at 170.

¹¹⁶ *See* YAFFEE ET AL., *supra* note 103, at 4-13, 5-5 (finding 88% of HCP processes employing low levels of participation (minimal interest group involvement, no steering committee, and no independent scientific review) involved strictly private lands, while only 12% involved public lands). In contrast, 11% of HCP processes providing high levels of participation (multiple interest groups, early involvement, a steering committee, and typically independent scientific review) regulated strictly private lands, while 89% involved public lands. *See id.* *See also* Ostermeier et al., *supra* note 113, at 170 (“Of the thirteen private cases, none had representative participation, six had expanded participation and seven involved only the applicant and service representatives. For public plans, fifteen

regional HCPs by necessity incorporate substantially more stakeholder participation than private, single-project HCPs. Not coincidentally, local and state officials are more likely than private developers to have the political incentives or obligation under state or local law to provide public participation opportunities before submittal of application materials to the Services.¹¹⁷ Yet, even state agency applicants have treated the public review process as a token exercise in certain instances.¹¹⁸

Existing evidence also shows that very few HCPs processes include independent scientists in scientific or technical review committees, and even fewer use independent scientific peer review at any stage of the HCP's development.¹¹⁹ Any independent scientist involvement typically occurs only after negotiation or initial HCP implementation, and even then only "at the behest of the outside scientist, not as a result of solicited peer review," or "as part of routine practice in the formulation of a habitat conservation plan."¹²⁰ As a result, any independent scientific assessments of proposed HCPs tend to come when the chances for changing elements of the plan are slim, relegating science to at best the role of "an adversarial interest at the approval stage rather than a shaping influence at the foundational stage."¹²¹ In short, too little information is made available too late to many interested parties who have an ability to contribute substantively to the HCP's terms. This is an unfortunate loss not only to those stakeholders, but also regulatory experimentation and ultimately habitat conservation.

of eighteen were either representative or expanded with the remaining three involving the service and permittee only."). This study defined "expanded" participation as "one or more individuals or representatives beyond that required" and "representative" participation as "those in which the intent was to involve representatives of all interests." *Id.* at 169.

¹¹⁷ See, e.g., YAFFEE ET AL., *supra* note 103, at A-Clark County-6 (quoting facilitator as stating "ESA matters are explosive and most government entities love it when the enviros walk hand in hand with the biggest developer in the region and request in unison for them to do something. The decision becomes relatively easy then.").

¹¹⁸ See, e.g., Thomas Lippe & Kathy Bailey, *Regulation of Logging on Private Land in California Under Governor Gray Davis*, 31 GOLDEN GATE U. L. REV. 351, 396 (2001) (quoting superior court decision finding state agency failed to follow its mandated public review procedures as stating "[a] believer in orchestration might reasonably conclude [the agency's] actions were intentionally executed to prevent public exposure or comment.").

¹¹⁹ Data from an unpublished database indicates that independent scientists were involved in scientific or technical committees in only fourteen percent of the 274 HCPs approved before 1999, and less than eight percent of HCP processes integrated independent scientific peer review at any stage of the HCP's development. See DEFENDERS OF WILDLIFE, HABITAT CONSERVATION PLAN DATABASE, Questions 30, 31, *available at* <http://www.defenders.org/hcp/guide.html> (last visited Aug. 14, 2006) (hereinafter "DEFENDERS HCP DATABASE").

¹²⁰ NATURAL HERITAGE INSTITUTE, *supra* note 94, at 19.

¹²¹ *Id.* at 20.

Similar data exists for the HCP implementation stage as well. Because the Services leave to the developer's discretion whether to use a scientific advisory committee or independent peer review during HCP implementation,¹²² most HCPs rely exclusively on applicant reporting and limited Service oversight.¹²³ External monitoring and oversight is largely absent.¹²⁴ Other affected parties are typically shut out during interpretation of HCP provisions.¹²⁵ In fact, the Services have stated in agency guidance that no other stakeholders *should* be allowed to enforce an HCP's terms.¹²⁶

Despite the Services' claims to actively encourage participation in the HCP process,¹²⁷ substantial evidence suggests otherwise. The Services continue to habitually treat "participation as a procedural burden," "a legally required step in an approval process that must be completed as quickly and effortlessly as possible."¹²⁸ Stakeholders seeking to participate often have to rely on laborious Freedom of Information Act (FOIA)¹²⁹ requests even to obtain access to the products of Service/developer negotiations.¹³⁰ Researchers also point to additional Service policies that actively hinder meaningful participation.¹³¹ For example, the Services' permit processing schedules, in some cases self-imposed and in others negotiated with the applicant, have led to hasty approvals despite stakeholder appeals for additional time and a Service official's recognition that "we ended up without enough time to review things thoroughly."¹³² A

¹²² See HCP Handbook Addendum, *supra* note 8, at 35,253.

¹²³ See DEFENDERS HCP DATABASE, *supra* note 119, at Question 31 (revealing that fewer than eight percent of 274 HCP processes integrated independent scientific peer review at any stage of the HCP's development).

¹²⁴ See Thomas, *supra* note 33, at 115. One study found that though applicants were at least moderately involved in 85% of responding HCPs during the implementation phase, in only a minority were environmental groups (40%), business and development groups (23%), or independent scientists (15%) at least moderately involved. See YAFFEE ET AL., *supra* note 103, at 5-3, 5-5, 5-6, 5-9. In fact, in only one out of fifteen HCPs did a FWS official report that "the public was very involved in the monitoring of HCP implementation." See *id.* at 5-8.

¹²⁵ See Lippe & Bailey, *supra* note 118, at 393.

¹²⁶ See HCP HANDBOOK, *supra* note 42, at app. 9, Template HCP Implementation Agreement § 14.8; Plater, *supra* note 44, at 872.

¹²⁷ See *supra* note 90.

¹²⁸ See ANDERSON ET AL., *supra* note 79, at 23.

¹²⁹ 5 U.S.C. § 552 (2000 & Supp. II 2003).

¹³⁰ See, e.g., Luoma, *supra* note 93, at 42-43. See also *infra* note 251.

¹³¹ See ANDERSON ET AL., *supra* note 79, at 21, 22.

¹³² *Id.*

federal court has also found that the Services have stonewalled attempts to even comment on proposed plans.¹³³

Likewise, though the National Environmental Policy Act's¹³⁴ requirement of the preparation and disclosure of an environmental impact statement (EIS) for certain federal actions¹³⁵ provides another potential opportunity for more in-depth stakeholder involvement, the Services application of NEPA serves to limit rather than increase such input. The EIS process includes public opportunities to comment through early open "scoping" meetings on the impacts of and alternatives to the proposed action, as well as requiring responses to comments made on the project.¹³⁶ However, the Services almost never require ITP applications to follow the EIS process, almost always recommending applicants prepare a much briefer environmental assessment¹³⁷ or categorically excluding an HCP from NEPA review.¹³⁸ These exceptions to the EIS process avoid the EIS's early participation opportunities, extended public comment period, detailed evaluation of impacts and alternatives,¹³⁹ and the requirement that the Services respond to comments.¹⁴⁰

In contrast with the majority of HCP processes that at best tolerate minimal participation in the HCP process, where applicants (almost always government entities) voluntarily opened up the negotiations to stakeholders, the instrumental value of such participation has been impressive.¹⁴¹ In one study, 94% of FWS officials reported "that public participation increased the quality of information available to develop HCPs."¹⁴² The increase in

¹³³ See, e.g., *Gerber v. Norton*, 294 F.3d 173, 181 (D.C. Cir. 2002) (reprimanding FWS for withholding from public a key map showing location of mitigation, stating "an agency may not turn the provision of notice into a bureaucratic game of hide and seek.").

¹³⁴ 42 U.S.C. §§ 4321-4375 (2000).

¹³⁵ NEPA requires preparation of an EIS for any major federal action (including permit approval) significantly affecting the quality of the environment. See *id.* § 4322(2)(C).

¹³⁶ See HOOD, *supra* note 29, at 44; ANDERSON ET AL., *supra* note 79, at 22.

¹³⁷ See Barton H. Thompson, Jr., *The Endangered Species Act: A Case Study in Takings and Incentives*, 49 STAN. L. REV. 305, 380 (1997) (revealing ninety-nine percent of HCPs approved between 1994 and 1996 were accompanied only by environmental assessments); Doremus, *supra* note 102, at 713; Kostyack, *supra* note 102, at 53.

¹³⁸ See ANDERSON ET AL., *supra* note 79, at 22.

¹³⁹ See Doremus, *supra* note 102, at 713.

¹⁴⁰ See ANDERSON ET AL., *supra* note 79, at 22. Even when an EIS is required, though it may require an opportunity for stakeholders to provide comments before negotiations occur, it does not require stakeholders access to the negotiations themselves. See *id.* at 24.

¹⁴¹ See ANDERSON ET AL., *supra* note 79, at 9; Thomas, *supra* note 33, at 111.

¹⁴² ANDERSON ET AL., *supra* note 79, at 13. Cf. YAFFEE ET AL., *supra* note 103, at A-Weyerhaeuser-8 (quoting applicant as stating participation broadened the values and options considered during deliberations).

information also serves to decrease misperceptions and increase trust.¹⁴³ Another study found 75% of HCP participants “reported that collaborating on an HCP improved subsequent working relationships between the participants.”¹⁴⁴ This increased trust may in turn increase the likelihood of HCP approval and implementation and decrease the likelihood of litigation.¹⁴⁵ Perhaps most importantly, studies found that both participants and outside observers more widely support HCPs crafted with substantial and early opportunities for public input¹⁴⁶ and view such HCPs to be better quality HCPs.¹⁴⁷ In short, most stakeholders (including applicants) in the more collaborative HCP processes asserted “the benefits of representative participation outweighed their associated problems.”¹⁴⁸ In fact, the Services officially assert that their experience reveals there is a direct relationship between the extent of public participation in the plan approval process and the extent both participants and outsiders believe an HCP is effective.¹⁴⁹

Conversely, little data appears to exist supporting the Services’ approach to participation. No evidence exists that providing a public

¹⁴³ See *id.* at A-Weyerhaeuser-8 (quoting applicant employee stating that public participation can “help diffuse misperceptions from growing out of control.”); *id.* at A-Orange County-5 (quoting environmental group representative stating in-depth participation through steering committee “allowed us time to understand how the plan developed and evolved—and it is easier to accept it if you understand the series of step-wise decisions that occurred.... [It] was useful and allowed us to check for understanding by greatly facilitating communication beyond what you would ever get from written comments and hearings.”).

¹⁴⁴ Jeff J. Opperman & Paola Bernazzani, *Comparing Perspectives Of Participants & Outside Commentators On Habitat Conservation Plans*, 20 ENDANGERED SPECIES UPDATE 3, 5 (2003).

¹⁴⁵ See ANDERSON ET AL., *supra* note 79, at 13; Thomas, *supra* note 33, at 112. See also YAFFEE ET AL., *supra* note 103, at A-Clark County-6 (local administrator reporting that many stakeholders believed the steering committee provided a superior forum for resolving species conservation disputes).

¹⁴⁶ See ANDERSON ET AL., *supra* note 79, at 11, 13 (“HCPs with greater levels of public participation tend to have higher and broader levels of outside stakeholder satisfaction.”); NATURAL HERITAGE INSTITUTE, *supra* note 94, at 21 (“[T]he degree of public acceptance of an HCP is strongly related to the degree of public participation in the development of the plan.”).

¹⁴⁷ See ANDERSON ET AL., *supra* note 79, at 4. See also *id.* at A-Weyerhaeuser-7 (quoting FWS official stating “participation makes all of the difference in the world in terms of product”); Ostermeier et al., *supra* note 113, at 170 (reporting participants believed multilateral process led to “better conservation activities.”); Dan Silver, *Natural Community Conservation Planning: 1997 Interim Report*, 14 ENDANGERED SPECIES UPDATE 22, 24 (1997) (affirming the useful contributions provided by numerous stakeholder groups in a particularly inclusive HCP process).

¹⁴⁸ Ostermeier et al., *supra* note 113, at 170.

¹⁴⁹ See HCP Handbook Addendum, *supra* note 8, at 35,246.

comment period after bilateral negotiations is the optimal participation approach, whether for fostering an engaged civic community or gathering information to cultivate quality HCPs. Put another way, no evidence has been published establishing that having the applicant assess the value of the benefits of multilateral stakeholder participation against the strategic value of restricted participation is more likely to lead to an optimal level of participation and information than having the Services perform that role.

To be sure, the Services cannot reasonably contend that the applicant and Services typically have more than enough information on which to formulate an adequate HCP without the benefit of additional data, or that they use the most rigorous methods for obtaining information. Many scientists have criticized the Service for ignoring scientific standards of independent peer review of the data used to formulate HCPs.¹⁵⁰ The Services rely primarily on the applicant's consultants to provide the biological information to support the HCP, with often overstretched Service scientists reviewing the information for adequacy.¹⁵¹ These independent critics understandably question the scientific credibility of HCPs not evaluated by scientists who do not have a stake in the outcome.¹⁵²

Furthermore, scientists have consistently criticized the HCP formation process as regularly lacking even basic scientific data. Comprehensive biological studies confirm that approximately half of approved HCPs are adopted without even minimally necessary information about basic trends of species at issue¹⁵³ or even the proposed take's effect on the species.¹⁵⁴ A

¹⁵⁰ See Jocelyn Kaiser, *When a Habitat is Not a Home: Many Ecologists Say Conservation Plans Designed to Ease Tensions Between Landowners and Environmentalists are Not Grounded in Good Science*, 276 *SCIENCE* 1636, 1636 (1997); PETER KAREIVA ET AL., *USING SCIENCE IN HABITAT CONSERVATION PLANS*, *AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES* 5 (1999); F. James, *Lessons Learned from a Study of Habitat Conservation Planning*, 49 *BIOSCIENCE* 871 (1999).

¹⁵¹ See HOOD, *supra* note 29, at 80.

¹⁵² See *id.*

¹⁵³ See Watchman et al., *supra* note 87, at 4 (“[E]ven general trends (whether the species was improving or declining) were unknown for 49 percent of the species addressed by the reviewed HCPs.”); Elaine Harding et al., *The Scientific Foundations of Habitat Conservation Plans: A Quantitative Assessment*, 15 *CONSERVATION BIOLOGY* 488 (2001).

¹⁵⁴ See KAREIVA ET AL., *supra* note 150, at 3 (“[F]or only 56% of the instances in which a listed species might be ‘taken’ by an activity was the predicted take quantitatively estimated. And only 25% (23 of 97) of species treatments included both a quantitative estimate of take and an adequate assessment of the impact of that take.”); *Id.* at 4 (“In many cases, we found that crucial, yet basic, information on species is unavailable for preparers of HCPs. ... For example, in only one-third of the species assessments was there enough information to evaluate what proportion of the population would be affected by a proposed take.”); Watchman et al., *supra* note 87, at 4 (“47 of the 97 cases examined presented no

2006 study learned that all but one of the twenty-two multi-species HCPs evaluated failed to confirm that all species included in the HCP were even present in the plan area, with a full forty-one percent of the total species covered unconfirmed.¹⁵⁵ Additionally, measures included in HCPs to minimize or mitigate the proposed take's impact often are not species-specific,¹⁵⁶ are based on insufficient data,¹⁵⁷ or even ignore existing data.¹⁵⁸ As a result, almost half of HCPs failed to include sufficient measures to offset the expected take,¹⁵⁹ sometimes leading to disastrous results.¹⁶⁰ Because of these inadequacies, a group of prominent conservation biologists concluded that many HCPs "have been developed without adequate scientific guidance," and aggravate rather than alleviate threats to endangered species.¹⁶¹

estimate of how many individuals would be taken as a result of the proposed activities, and an additional 21 cases gave estimates that were so vague as to provide little aid to planners."); DEFENDERS HCP DATABASE, *supra* note 119, at Questions 13, 14 (data revealing 50% of 274 HCPs did not estimate how many of the species would be killed or harmed, while 86% did not quantify the projected impact on the species' population on a local, regional or global level). A 2005 investigative report found (1) 45% (41 of 92) of HCPs failed to quantify the number of listed species in the plan area, and (2) 57% (52 of 91) failed to quantify the number likely impacted by the proposed take. *See* Robert McClure & Lisa Stiffler, *Troubled Plans*, SEATTLE POST-INTELLIGENCER, May 4, 2005, at A12, available at <http://seattlepi.nwsourc.com/dayart/20050504/PIanalysisFIX1.gif> (last visited Aug. 14, 2006).

¹⁵⁵ *See* Matthew Rahn et al., *Species Coverage in Multispecies Habitat Conservation Plans: Where's the Science?*, 56 BIOSCIENCE 613, 615 (2006).

¹⁵⁶ *See id.* at 616 (finding nearly two-thirds of species included in HCP but unconfirmed to exist in plan area lacked species-specific conservation measures).

¹⁵⁷ *See* KAREIVA ET AL., *supra* note 150, at 3 ("Overall, particular mitigation measures commonly suffered from an absence of data indicating they were likely to succeed, leading to a situation in which "unproven" mitigation measures were relied on in the HCPs"); Watchman et al., *supra* note 87, at 4 ("[T]he team also found that the specific mitigation strategies chosen often lacked sufficient data to demonstrate their efficacy."); DEFENDERS HCP DATABASE, *supra* note 119, at Question 25 (finding 84% of 274 HCPs did not provide evidence or cite references that mitigation would work for each species listed on permit).

¹⁵⁸ *See* Watchman et al., *supra* note 87, at 5.

¹⁵⁹ *See* KAREIVA ET AL., *supra* note 150, at 26 ("Overall, for only 57% of the species in the sample did mitigation measures proposed in the HCP address the primary threat to the species to a degree considered 'sufficient' or better.").

¹⁶⁰ *See* Watchman et al., *supra* note 87, at 4 ("In perhaps the worst example, several HCPs relied heavily on relocation of threatened Utah prairie dogs ..., despite a study available to plan preparers concluding that nearly 80 percent of 480 Utah prairie dogs disappeared or died within three months following relocation. In this case, the proposed mitigation strategy was little better than killing the animals outright.").

¹⁶¹ Dennis Murphy et al., *A Statement on Proposed Private Land Initiatives and Reauthorization of the Endangered Species Act from the Meeting of Scientists at Stanford University, March 31, 1997*, in *THE SCIENCE OF CONSERVATION PLANNING* 214 (1997).

Given the insufficient data on which many HCPs are based, the Services cannot claim that requiring the participation of interested stakeholders and independent peer review would be wasteful and superfluous. Nor have they; though not the norm, the Services in some cases have recognized the usefulness of nonprofit organizations in providing information and assistance in managing habitat.¹⁶² However, by systemically ignoring the potential scientific resources available, the Services not only raise questions about the objectivity of the information used to make HCP decisions but also contravene the statutory mandate to base permit decisions on the “best scientific information available.”¹⁶³

Finally, though the extent that the Services have yielded to now-familiar concerns of agency capture may be difficult to ascertain through empirical evidence, it is clear that the Services’ bilateral approach to the HCP program provides opportunities for capture that did not exist under Section 9’s strict and non-negotiable prohibition. The potential for capture is not aided by the fact that courts are quite deferential in reviewing Service approval of HCPs and, except in egregious situations, do not serve as a significant restraint on negotiations between an applicant and the Services.¹⁶⁴ By providing applicants a crucial strategic role in shaping an HCP, the program grants such regulatory actors considerable influence over

¹⁶²See Lee Breckenridge, *Nonprofit Environmental Organizations and the Restructuring of Institutions for Ecosystem management*, 25 *ECOLOGY L. Q.* 692, 697 (1999).

¹⁶³Dennis Murphy et al., *supra* note 161, at 218.

¹⁶⁴In the program’s twenty-five years, only seven reported opinions have considered Service approval of an HCP (five reviewing initial approvals and two reviewing amended approvals after judicial invalidation). Four opinions invalidated permit approval. *See Gerber v. Norton*, 294 F.3d 173, 175 (D.C. Cir. 2002) (invalidating permit because FWS did not allow public access to a key mitigation map for the HCP); *Sierra Club v. Babbitt*, 15 F.Supp.2d 1274, 1279 (S.D.Ala. 1998) (invalidating two permits authorizing take of Alabama Beach Mouse because FWS ignored expert opinions); *Sierra Club v. Norton*, 207 F.Supp.2d 1310 (S.D.Ala. 2002) (enjoining permit approval for take of Alabama Beach Mouse again); *National Wildlife Fed’n v. Babbitt*, 128 F.Supp.2d 1274, 1292 (E.D.Cal. 2000) (invalidating Natomas Basin HCP because FWS failed to provide any economic analysis or even landowner representations supporting decision that chosen mitigation was the maximum extent practicable).

However, the opinions upholding permit approval demonstrate the wide discretion provided to the Services. *See Ctr. for Biological Diversity v. Fish & Wildlife Serv.*, 202 F.Supp.2d 594, 622 (W.D.Tex. 2002) (upholding permit approval on ground that absence of evidence that mitigation is not the maximum extent practicable is sufficient). *Loggerhead Turtle v. County Council of Volusia County, Fla.*, 120 F.Supp.2d 1005 (M.D.Fla. 2000) (upholding permit approval despite evidence of repeated permit noncompliance by applicant); *Nat’l Wildlife Fed’n v. Norton*, No. CIV-S-04-0579 DFL JF, 2005 WL 2175874 (E.D.Cal. Sept. 7, 2005) (upholding subsequently revised Natomas Basin HCP).

long-term policy decisions that substantially affect a wide range of interests. While this involvement on its own may be benign and indeed valuable in determining the optimal conservation plan, the Services delegation to the applicant of the primary role of determining who *else* gets to participate meaningfully makes the applicant's disproportionate influence over conservation decisions foreseeable, and perhaps inevitable.¹⁶⁵

III. A RETICENCE TOWARD INNOVATIVE IMPLEMENTATION

In contrast with the Services' narrow interpretations of the role of the public and stakeholders in the HCP program, from the outset the HCP program incorporated requirements that sought, in albeit limited fashion, to both foster monitoring of plan implementation and encourage continued adaptation of HCPs. However, like the development of the HCP program's participation provisions, Service interpretations of the program's monitoring and adaptation requirements have provided applicants and the Services considerable flexibility and incentives to ignore monitoring and evade adaptation. Consequently, as detailed in this Part, HCP monitoring and adaptation have both fallen exceedingly short of their potential.

A. *Examining the Role of Monitoring*

Because as currently structured the HCP program relies so heavily on the applicant-developer to be the principal monitor of the effect of the approved take and the effectiveness of adopted conservation measures in achieving HCP objectives, monitoring under the HCP program requires a high level of faith that permittees have both the incentive and ability to assess conformity with public goals on their own. To date there is little evidence that such trust is warranted.

1. **Devolving Monitoring Responsibilities**

Reliable and proficient monitoring procedures are a minimum requirement for promoting compliance and ensuring the legitimacy of even traditional command-and-control regulation, and certainly are critical to an adaptive regulatory approach. In a collaborative governance paradigm, monitoring and adaptation of regulatory decisions can serve the critical role of fostering accountability and legitimacy by ensuring that decisions account for the evolving character of complex systems and the existence of

¹⁶⁵ As one FWS official expressed, the Services expect staff to follow a "satisfied customer" approach to the HCP program, "with the applicant being considered the only customer." ANDERSON ET AL., *supra* note 79, at 21-23.

uncertainty when the initial regulatory decision is made.¹⁶⁶ An HCP can only be coherently adapted to account for new information or changed circumstances if the take's impacts, species and habitat condition, and adopted conservation mitigation program are monitored to assess whether such information or circumstances have occurred.¹⁶⁷ This is particularly necessary in the common circumstance where significant uncertainties regarding existing conditions, the project's effects and the mitigation's effectiveness are present.¹⁶⁸ Indeed, the Services expressly acknowledge the various critical functions monitoring can perform in the regulatory process: (1) as a check to ensure HCP compliance; (2) to assess a permitted take's impacts on the species as compared to projected impacts, which might trigger a need for alteration of mitigation measures; (3) to signal when new conditions arise in the plan area that might require adaptation of the HCP; (4) to assess progress toward the HCP's biological goals and objectives, for possible adaptation of the HCP; and (5) to provide data for evaluation of existing HCP strategies for possible use or modification for future HCPs or other regulatory programs.¹⁶⁹

As a result, the Services' implementing regulations have always required HCPs to specify the monitoring measures to be used during plan implementation, directing the Services to impose "monitoring and reporting requirements deemed necessary for determining whether [the ITP's] terms and conditions are being complied with."¹⁷⁰ Monitoring must be based on "sound science," and "previously established monitoring protocols," using a "multispecies approach when appropriate."¹⁷¹ However, though monitoring procedures must be incorporated in all HCPs, neither the ESA nor the implementing regulations specify *who* must conduct the monitoring, leaving considerable discretion to the negotiating parties to shape an HCP's monitoring program. Conceivably, the parties might rely on the Services to

¹⁶⁶ See Camacho, *supra* note 3, at 296.

¹⁶⁷ See K. Shawn Smallwood et al., *Environmental Auditing: Indicators Assessment for Habitat Conservation Plan of Yolo County, California, USA*, 22 ENVIRONMENTAL MANAGEMENT 947 (1998) (discussing need for assessment of ecological indicators in HCPs to ensure habitat remains suitable to sustain species); Watchman et al., *supra* note 87, at 5.

¹⁶⁸ See *Habitat Conservations Plans: Hearings Before the Subcomm. on Fisheries, Wildlife, and Drinking Water of the Comm. on Envtl. & Pub. Works*, 106th Cong. 150 (1999) (statement of Monica Medina, General Counsel, NOAA) ("Because HCPs are at the limits of our scientific capability and knowledge, extensive monitoring and adaptive management strategies are essential.").

¹⁶⁹ See *id.*

¹⁷⁰ 50 C.F.R. §17.22(b)(3) (endangered species), §17.32(b)(3) (2005) (threatened species). See also *id.* § 222.307(d) (NMFS reporting and inspection regulations).

¹⁷¹ HCP Handbook Addendum, *supra* note 8, at 35,254.

perform the monitoring functions exclusively, or encourage the various stakeholders to participate in oversight activities.

Through agency guidelines, however, the Services have opted to place the key monitoring functions primarily in the hands of the applicant-developer. The Services organize the HCP program's monitoring activities into compliance monitoring and "effect and effectiveness" monitoring functions.¹⁷² While compliance monitoring is limited to verifying permittee compliance with the HCP's terms, the bulk of monitoring activities fall within effect and effectiveness monitoring—including evaluating the development's effects on the plan area, the continued validity of "assumptions and predictions made when the HCP was developed and approved," and whether the HCP is "achieving the biological goals and objectives."¹⁷³ Despite the breadth of effects and effectiveness monitoring, Services regulations primarily assign all such monitoring to the applicant and make the Services primarily responsible only for compliance monitoring.¹⁷⁴ Furthermore, just as for the HCP formation process, Service interpretations leave full discretion to the applicant concerning whether to configure the plan's monitoring protocols to allow others to be even peripherally involved.¹⁷⁵

2. Violating Monitoring Requirements

As a result of these interpretations, the limited evidence that exists on biological monitoring under the HCP program suggests that the vast majority of HCPs do not provide adequate monitoring programs.¹⁷⁶ The Services usually offer little assistance on how to construct a scientifically

¹⁷² *Id.* at 35,253.

¹⁷³ *Id.* at 35,253. *See also id.* at 35,254 ("Effects and effectiveness monitoring includes, but is not limited to, the following: 1. Periodic accounting of incidental take that occurred ...; 2. Surveys to determine species status...; 3. Assessments of habitat condition; 4. Progress reports on fulfillment of the operating conservation program...; and 5. Evaluations of the operating conservation program and its progress toward its intended biological goals.").

¹⁷⁴ *See id.* at 35,254.

¹⁷⁵ At the applicant's discretion, HCPs may use oversight committees, made up of "species experts and representatives of the permittee, the Services, and other affected agencies and entities," "to ensure proper and periodic review of the monitoring program and to ensure that each program properly implements the terms and conditions of the incidental take permit." *Id.* at 35,255. Additionally, if the parties so negotiate, non-permittee parties (including private or public entities) are allowed to conduct all or portions of the monitoring functions. *See id.*

¹⁷⁶ *See* Craig Thomas, *Habitat Conservation Planning*, in FUNG & WRIGHT, *supra* note 3, at 144, 153-5; Bradley Karkkainen, *New Governance in Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping*, 89 MINN. L. REV. 471, 496 (2004).

adequate monitoring program, leaving it to the applicant to develop.¹⁷⁷ The most comprehensive empirical study to date on the science of HCPs, under the aegis of the American Institute for Biological Sciences, found that monitoring plans are usually nonexistent or so poorly described as to make them inadequate as a tool for compliance.¹⁷⁸ Only half (twenty-two out of forty-three) of the HCPs analyzed contained clear “effects and effectiveness” monitoring programs.¹⁷⁹ Furthermore, only seven (five percent) of the forty-three HCPs analyzed adopted a monitoring strategy that was sufficient to evaluate the success of the HCP,¹⁸⁰ i.e., the plan’s effects on the listed species or overall habitat¹⁸¹ or the effectiveness of the mitigation strategies adopted.¹⁸² Other analyses of HCP monitoring corroborate these results.¹⁸³

For those HCPs that do include satisfactory monitoring and compliance programs, there is little evidence that adopted monitoring protocols are being either implemented by applicants or enforced by the Services.¹⁸⁴ Monitoring information is not readily accessible, if it is publicly available at all.¹⁸⁵ However, substantial evidence exists that the Services’ simply do not employ sufficient staff to closely engage in the monitoring activities to

¹⁷⁷ See NATURAL HERITAGE INSTITUTE, *supra* note 94, at 24.

¹⁷⁸ See KAREIVA ET AL., *supra* note 150, at 28-29.

¹⁷⁹ See *id.* at 28. See also DEFENDERS HCP DATABASE, *supra* note 119, at Question 36 (results of study revealing 35% of 274 HCPs fail to require effectiveness monitoring, 23% indicate effectiveness monitoring will be done but provide little description of the program, 33% provide only a general description of what will be monitored, and only 9% contain a detailed description of an effectiveness monitoring program).

¹⁸⁰ See *id.* See also Wilhere, *supra* note 32, at 21.

¹⁸¹ See Watchman et al., *supra* note 87, at 5.

¹⁸² See KAREIVA ET AL., *supra* note 150, at 28-29.

¹⁸³ A more recent but unscientific investigative report of large HCPs found that 29% (twenty-seven of ninety-two) of the HCPs reviewed failed to include a monitoring program at all. See McClure & Stiffler, *supra* note 154. See also REED NOSS ET AL., THE SCIENCE OF CONSERVATION PLANNING: HABITAT CONSERVATION UNDER THE ENDANGERED SPECIES ACT (1997) (finding HCPs typically either completely lacked monitoring procedures or included only a bare requirement that plans should be modified based on monitoring data); DEFENDERS HCP DATABASE, *supra* note 119, at Questions 26, 27, 38 (data indicating only 6% of 274 HCPs approved before 1999 tied monitoring to biological goals, 80% did not include specific criteria for deciding if adopted mitigation measures are working, and only 10.5% provide a procedure for modifying the level of take or mitigation based on such criteria); HOOD, *supra* note 29, at 35 (concluding most of twenty-four HCPs analyzed have insufficient monitoring); Pederzoli, *supra* note 107, at 105 (finding a clear monitoring plan was only proposed in 18 of 30 plans studied).

¹⁸⁴ See Thomas, *supra* note 33, at 113-114 (“[W]e do not know whether the monitoring programs found to be sufficient were actually implemented.”).

¹⁸⁵ See *infra* Part IV.A.

which they have contractually committed.¹⁸⁶ In addition, HCPs regularly fail to reserve sufficient funding to engage in the adopted monitoring procedures. The ESA expressly requires adequate funding for all HCP activities prior to approval of the ITP, which ostensibly includes monitoring of HCP implementation.¹⁸⁷ Though most HCPs appear to at least identify some funding sources for HCP mitigation activities,¹⁸⁸ studies have found that HCPs often fail to provide *sufficient* funds to monitor species and identify problems over the long-term.¹⁸⁹

When the Services do actually engage in monitoring, they may use their substantial enforcement discretion to merely send notices of non-compliance or to suspend or revoke a permit.¹⁹⁰ Unfortunately for some HCPs, the Services simply failed to reserve the power to seek damages or alternative remedies if the applicant violates the HCP or a related implementing agreement.¹⁹¹ Unless the HCP itself establishes alternative enforcement mechanisms, the Services are left with the sole remedy of permit revocation, an empty threat when (as is usually the case) the most harmful taking activities occur early in HCP implementation.¹⁹² Unsurprisingly, permit revocation is not common.¹⁹³

¹⁸⁶ For example, one Service official is tasked with (among other duties) overseeing compliance with eleven HCPs in Washington state covering nearly 2.2 million acres. See Robert McClure & Lisa Stiffler, *Too Often, Inadequate Science Hampers Habitat Planning*, SEATTLE POST-INTELLIGENCER, May 4, 2005.

¹⁸⁷ See 16 U.S.C. 1539(a)(2)(b)(iii) (2000).

¹⁸⁸ See KAREIVA ET AL., *supra* note 150, at 28-29 (finding 98% of the HCPs studied delineated funding sources for proposed mitigation, but only 77% had significant funds set aside to pay for mitigation when the HCP was adopted).

¹⁸⁹ See DEFENDERS HCP DATABASE, *supra* note 119, at Question 42 (finding that only 48% of the 274 HCPs analyzed provided the funding for mitigation and other HCP activities before or at the time the take would occur); *id.* at 44, 45 (finding that though 22% of the HCPs analyzed depended on local, state, and/or federal government funding to implement mitigation, for only 4% was such public funding approved before the ITP was granted); HOOD, *supra* note 29, at 82.

¹⁹⁰ See STANFORD ENVIRONMENTAL LAW SOCIETY, *supra* note 77, at 153-154.

¹⁹¹ See Daniel Hall, *Using Habitat Conservation Plans to Implement the Endangered Species Act in Pacific Coast Forests: Common Problems and Promising Precedents*, 27 ENVTL. L. 803, 826 (1997).

¹⁹² See Lyons, *supra* note 47, at 103.

¹⁹³ See ECOS Conservation Plans and Agreements Database, http://ecos.fws.gov/conserv_plans/public.jsp (last visited Aug. 14, 2006) (demonstrating that of over 450 listed HCPs, there is no record of FWS revoking a single ITP). See also e.g., *Loggerhead Turtle v. County Council of Volusia County, Fla.*, 120 F.Supp.2d 1005, 1023-25 (M.D.Fla. 2000) (upholding decision to not revoke permit despite evidence of repeated applicant noncompliance).

By spurning systematic monitoring, the Services lack the ability to verify basic regulatory compliance, a common deficiency in administrative regulation generally.¹⁹⁴ Yet for regulatory processes like HCPs, in which regulatory decisions are particularly provisional and based on incomplete information, inadequate monitoring has the additional consequences of limiting the Services' ability to understand impacts and can exacerbate risks to sensitive species and habitat by increasing the difficulty of detecting potential problems.¹⁹⁵ Furthermore, by locating key monitoring functions with the applicant, the Services have made the temptation for an applicant to conceal unfavorable information incredibly strong.¹⁹⁶ These are precisely the concerns that collaborative innovations such as the HCP program were intended to counteract.¹⁹⁷

B. Neglecting Adaptive Implementation

Though the Services' regulations and guidelines provide for the possibility of adapting HCPs throughout the implementation process, the experience of the HCP program is that there is a lack of will and incentives for the Services and permittees to engage in earnest contingency planning or adaptive management.¹⁹⁸ With a few encouraging exceptions, the Services have largely neglected developing the potential for systematic rigorous evaluation and adaptation of HCPs.

1. Disincentives to Adaptation

In addition to monitoring, the Services claim to emphasize incorporating contingency planning and adaptive management procedures in the HCP implementation process. The Services confirm that usage of contingency planning—which attempts to manage uncertainty by anticipating foreseeable circumstances and adopting alternate regulatory strategies as circumstances change—has been a core objective of the HCP program since the San Bruno HCP.¹⁹⁹ Implementing regulations require contingency planning for changed circumstances²⁰⁰ if they are foreseeable,²⁰¹ and make

¹⁹⁴ See Freeman, *supra* note 3, at 16-17.

¹⁹⁵ See Watchman et al., *supra* note 87, at 5.

¹⁹⁶ See, e.g., Rebecca McLain & Robert Lee, *Adaptive Management: Promises and Pitfalls*, 20 ENVIRONMENTAL MANAGEMENT 437, 444 (1996).

¹⁹⁷ See Freeman, *supra* note 3, at 29.

¹⁹⁸ See Wilhere, *supra* note 32, at 21.

¹⁹⁹ See *id.* at 35,248.

²⁰⁰ Changed circumstances are defined as “circumstances that can be reasonably anticipated.” *Id.* at 35,253.

²⁰¹ See 50 C.F.R. §§ 17.22(b)(5), 17.32(b)(5) (2004).

procedures to address unforeseen circumstances a precondition to ITP issuance.²⁰² The HCP and ITP also must describe the agreed upon range of management and mitigation strategies and the process by which the management and funding decisions are made and implemented.²⁰³ In sum, the Services state in their HCP Handbook, “HCP participants should ensure that techniques used are proven and reliable or, if relatively new, that contingency measures or adaptive management procedures are included to correct for failures.”²⁰⁴ These procedures certainly have the potential for ensuring that new information obtained through monitoring is used as a feedback loop to adapt an HCP’s original assessments and measures.²⁰⁵

Beyond contingency planning, more recently the Services have provided for the possibility of more systematic regulatory adaptation during implementation by introducing to the HCP program a more rigorous, methodical approach referred to as adaptive management. Adaptive management was originally proposed by scientists in the 1970s as an alternative approach to natural resource management in response to the significant uncertainty that regularly exists in ecosystems.²⁰⁶ As described by the Services, adaptive management is “a method for examining alternative strategies for meeting measurable biological goals and objectives, and then, if necessary, adjusting future conservation management actions according to what is learned.”²⁰⁷ Proposals to integrate adaptive management into administrative processes have recently become fashionable,²⁰⁸ and the Services accommodated the potential for adaptive management in response to sustained calls for incorporating it into the HCP program.²⁰⁹

In the context of HCPs, adaptive management focuses on methodically addressing information gaps in the HCP formation process by including a

²⁰² See *id.* §§ 17.22(b)(2)(iii), 17.32(b)(2)(iii) (FWS), 50 C.F.R. § 222.307(g) (NMFS) (2005).

²⁰³ See HCP Handbook Addendum, *supra* note 8, at 35,253.

²⁰⁴ See HCP HANDBOOK, *supra* note 42, at 3-22.

²⁰⁵ Cf. Camacho, *supra* note 3, at 294; Freeman, *supra* note 3, at 28..

²⁰⁶ See HCP Handbook Addendum, *supra* note 8, at 35,252.

²⁰⁷ See *id.* The Services distinguish between passive and active adaptation: “Passive adaptation is where information obtained is used to determine a single best course of action. Active adaptation is developing and testing a range of alternative strategies [citation omitted]. ... [A]n active approach may pose too much of a risk to the species; therefore, a more passive approach may be the best course of action.” *Id.*

²⁰⁸ See, e.g., National Environmental Policy Act Revised Implementing Procedures, 69 Fed. Reg. 10,866 (Mar. 8, 2004) (making adaptive management an explicit goal of the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4375 (2000)).

²⁰⁹ See HCP Handbook Addendum, *supra* note 8, at 35,245.

systematic procedure for obtaining more data after HCP approval before choosing between various alternative conservation strategies.²¹⁰ The focus of adaptive management in the HCP program, then, is on obtaining further information before deciding on an ultimate conservation strategy. By integrating scrupulous evaluation and adjustment of an HCP's preliminary conservation strategies to account for a lack of information during the HCP's initial formation, adaptive management has the potential for injecting a much more systematically responsive and effective approach to regulation.

Under their interpretation of the statute, however, the Services have created significant disincentives for both the Services and permittees to either reduce any uncertainty that exists in species conservation disputes or engage in rigorous adaptive management protocols. First, the HCP program only requires adaptive management strategies "for HCPs that would otherwise pose a significant risk to the species at the time the permit is issued due to significant data or information gaps."²¹¹ In other words, rather than incorporate systemic adaptive management techniques to make the regulatory process more responsive based on the most up-to-date information, the Services only require adaptive management strategies in HCPs that otherwise would not qualify for an ITP because the risk to the species of granting the permit is too high.²¹² Thus, the Services have essentially dismissed more thorough HCP adaptation except in rare cases. The Services are frank that, as with their construal of the participation and monitoring provisions, the limited use of adaptive management strategies

²¹⁰ As stated by the Services, adaptive management strategies (1) identify uncertainty, (2) formulate alternative experimental strategies for addressing the uncertainty and determine which to implement; (3) integrate a monitoring program for detecting the necessary information for strategy evaluation; and (4) incorporate feedback loops that link implementation and monitoring to a decision-making process (which may be similar to a dispute-resolution process) that result in appropriate changes in management. *See id.* at 35,252.

²¹¹ *Id.* *See also id.* ("Possible significant data gaps that may require an adaptive management strategy include, but are not limited to, a significant lack of specific information about the ecology of the species or its habitat ..., uncertainty in the effectiveness of habitat or species management techniques, or lack of knowledge on the degree of potential effects of the activity on the species covered in the incidental take permit.").

²¹² *See id.* at 35,249 ("We believe that an HCP that fails to address significant data gaps will not meet the issuance criteria of the ESA.").

results from their decision to lodge primary discretion over plan design to applicant-developers.²¹³

Second, although the Services promulgated regulations requiring the incorporation of contingency planning measures for all foreseeable changed circumstances, these regulations provide that such circumstances could only include those specifically delineated in the HCP at the time the HCP was adopted.²¹⁴ Even if a foreseeable event occurs, a permittee is only responsible for subsequent action if new data demonstrates a need for such mitigation.²¹⁵ This interpretation produces a strong disincentive for permittees to engage in research and monitoring “because such an investment may result in additional costs for future mitigation.”²¹⁶ Furthermore, the regulation serves as a strong incentive for the applicant, as the primary architect of the HCP, to limit the list of foreseeable circumstances for which contingency measures are necessary.²¹⁷ By allowing applicants to strictly limit the participation of other stakeholders in the HCP formation process, the Services are assigned the full responsibility of (1) delineating from the outset the potential circumstances that might warrant integration of contingency planning, and (2) establishing during implementation that new data demonstrates a need for additional mitigation.

Finally, as for unforeseen circumstances, the Services adopted the controversial “No Surprises” rule²¹⁸ to encourage potential applicants to participate in the HCP program.²¹⁹ This rule places the financial burden on the Services if unforeseen circumstances arise during implementation requiring alterations to the HCP.²²⁰ Thus, in addition to providing applicants the incentive to limit adaptation from the outset, the HCP program’s regulations potentially furnish the Services with a strong

²¹³ See *id.* at 35,252 (stating because “stakeholder involvement in the development of many HCPs, including the adaptive management design, is largely at the discretion of the applicant,” this can inhibit experimental design and thus the effectiveness of the adaptive management approach).

²¹⁴ See *id.* at 35,253 (“When an HCP [or] permit incorporate an adaptive management strategy, it should clearly state the range of possible operating conservation program adjustments due to significant new information, risk, or uncertainty. This range defines the limits of what resource commitments may be required of the permittee.”).

²¹⁵ See 50 C.F.R. §§ 17.22(b)(5), 17.32(b)(5) (2004).

²¹⁶ Wilhere, *supra* note 32, at 27.

²¹⁷ See Christopher Mills, Note, *Incentives and the ESA: Can Conservation Banking Live Up to Potential?*, 14 DUKE ENVIRONMENTAL L. & POL’Y J. 523, 532-33 (2004).

²¹⁸ 50 C.F.R. §§ 17.22(b)(5), 17.32(b)(5) (2004).

²¹⁹ See Fred Bosselman, *The Statutory and Constitutional Mandate for a No Surprises Policy*, 24 ECOLOGY L.Q. 707 (1997).

²²⁰ See 50 C.F.R. §§ 17.22(b)(5), 17.32(b)(5) (2004).

financial disincentive to engage in adaptation beyond the few circumstances provided for in the initial HCP.

2. Ignoring Adaptation

Similar to the extent of participation and the monitoring of HCPs, there is at best limited evidence to date of how often HCPs incorporate adaptive mechanisms, or whether such measures are used. Yet the evidence that does exist suggests that, consistent with the implementation framework developed by the Services, most HCPs do not attempt to use contingency planning or adaptive management to adjust adopted mitigation or conservation plan procedures.²²¹

The only comprehensive analysis by scientists, conducted in 1999, determined that merely one-third (fifteen out of forty-three) of the HCPs reviewed included “some mechanism for mid-course correction as additional information was obtained.”²²² This evidence cannot be dismissed on the presumption that HCPs without adaptive measures did not need them because they relied on sufficient data up-front; plans with insufficient data were *less likely* to integrate adaptive or contingent strategies into the HCP’s provisions than those relying on adequate data.²²³ Predictably, the few HCPs that included comprehensive adaptive management protocols consistently tended to integrate clear and scientifically defensible monitoring programs.²²⁴

Little is known about the extent to which more recently approved HCPs adopt contingency planning or adaptive management procedures, as neither the Services nor independent researchers have systematically analyzed more recently adopted HCPs for inclusion of contingency measures. Astonishingly, the only recent multi-HCP investigation of adaptation in

²²¹ See DEFENDERS HCP DATABASE, *supra* note 119, at Question 39, 40 (revealing that only 22% of the 274 HCPs approved before 1999 explicitly tied monitoring to adaptive management, and only 35% incorporated adaptive management into the HCP).

²²² See Watchman et al., *supra* note 87, at 7. See also DEFENDERS HCP DATABASE, *supra* note 119, at Questions 26, 27, 38 (finding that 80% of the 274 HCPs approved before 1999 failed to include specific criteria for deciding if adopted mitigation measures are working, and only 10.5% provide a procedure for modifying the level of take or mitigation based on such criteria).

²²³ See Watchman et al., *supra* note 87, at 7; KAREIVA ET AL., *supra* note 150, at 41 (finding 45% of the thirty-eight cases with insufficient data included a discussion of adaptive management, while 77% of forty-eight cases with adequate data did so).

²²⁴ See KAREIVA ET AL., *supra* note 150, at 29 (finding 88% of HCPs incorporating adaptive management protocols had clear monitoring programs, while only 30% of the HCPs without adaptive management included adequate monitoring procedures).

HCPs was conducted by a Seattle newspaper, in a series of articles in May 2005, claiming to repeat some of the 1999 study's analysis but for all large HCPs approved from 1995 to 2004 not analyzed in the original scientific study.²²⁵ The investigation reported that only 27% (24 of 88) of the HCPs reviewed included any criteria for determining if mitigation protections are working, and only 28% (25 of 88) included provisions for modifying the HCP if mitigation protections fail.²²⁶ Furthermore, high-level Service officials recently acknowledged that insufficient resources are spent on implementation activities given their importance to the HCP program,²²⁷ a fact that the U.S. General Accounting Office confirmed.²²⁸ Although hardly conclusive, the existing evidence does suggest that the Services do not treat implementation activities—and adaptation in particular—as a significant component of the HCP program.

For those HCPs that include provisions for adaptation, no systematic study has been undertaken assessing whether and to what extent such provisions actually have been used to adapt HCPs.²²⁹ To be sure, there appear to be a number of positive examples that have successfully incorporated an implementation program using adaptive management, including comprehensive monitoring and adaptation procedures.²³⁰ Yet, despite requiring monitoring and providing for the possibility of making

²²⁵ See Robert McClure & Lisa Stiffler, *Special Report: A License to Kill*, SEATTLE POST-INTELLIGENCER, May 3, 2005 – May 5, 2005. The report analyzed ninety-eight HCPs covering plan areas of at least 100 acres, approved from 1995 to 2004, and not included in KAREIVA ET AL., *supra* note 150.

²²⁶ See McClure & Stiffler, *supra* note 154.

²²⁷ Rick Sayers, head of FWS's HCP program, recently stated: "Once the permits get approved, we tend to move quickly on to what's the next permit that needs to be looked at and reviewed, rather than spending a lot of time and energy working with the approved permits making sure everything is going the way it should go." McClure & Stiffler, *supra* note 186. See also *id.* (quoting former Secretary of Interior Bruce Babbitt as stating: "That whole cluster of issues [HCP monitoring and evaluation] didn't really get the attention it deserved.... We never got around to it.")

²²⁸ A U.S. General Accounting Office reported that the Services are allocated merely two million dollars annually for all HCP monitoring and implementation (a small sum considering there are over 450 HCPs nationwide), and that field staff spend only two percent of their time on monitoring activities, despite recognition of the importance of fieldwork and monitoring activities. See U.S. GEN. ACCOUNTING OFFICE, GAO-02-581, ENDANGERED SPECIES PROGRAM: INFORMATION ON HOW FUNDS ARE ALLOCATED AND WHAT ACTIVITIES ARE EMPHASIZED 12, 17-18 (2002).

²²⁹ See Thomas, *supra* note 33, at 112, 114.

²³⁰ See Marj Nelson, *The Changing Face of HCPs*, 25 ENDANGERED SPECIES BULLETIN 4 (July 2000) (describing several HCPs which successfully integrated adaptive management programs).

HCPs adaptive, adaptive management and contingency planning are still the exception rather than the rule in the HCP program.

Because of limited public funding and how the Services have allocated responsibility, it is hardly surprising that monitoring and adaptation activities go unattended. Through the Services promulgation of the No Surprises rule, the HCP program places overwhelming duties on the Services relative to resources—not only to monitor and make changes to the conservation program, but also to fund necessary modifications directly.²³¹ Existing evidence suggests this risk has been significant, as most HCPs are adopted under conditions of substantial uncertainty about the listed species, ecosystem, proposed take, and efficacy of mitigation²³² that may not become apparent until after the HCP has been approved.²³³ Indeed, though not necessarily antithetical to adaptive management,²³⁴ because of these burdens and Service resource limitations, many independent scientists have repeatedly concluded that the No Surprises regulatory assurances pose substantial limitations to adaptive management and thus significant risks to listed species.²³⁵ Absent an increase in Service resources or an alteration of existing incentives for developing a more adjustable framework for implementing regulatory decisions, the HCP experimental approach to species and ecosystem conservation will remain largely unsuccessful.

IV. THE MALADAPTIVE MANAGEMENT OF THE HCP PROGRAM

Perhaps the most problematic deficiency of the Services' administration of the HCP program is that the Services have never seriously treated the experimental regulatory program *like* an experiment.²³⁶ The HCP program

²³¹ See *supra* notes 218 – 220 and accompanying text.

²³² See *supra* notes 153 – 161 and accompanying text.

²³³ See NATURAL HERITAGE INSTITUTE, *supra* note 94, at 24.

²³⁴ See J.B. Ruhl, *Taking Adaptive Management Seriously: A Case Study of the Endangered Species Act*, 52 U. KAN. L. REV. 1249, 1280 (2004) (stating No Surprises rule is essentially a risk allocation measure among private and public sources); John Kostyack, *Reshaping Habitat Conservation Plans for Species Recovery: an Introduction to a Series of Articles on Habitat Conservation Plans*, 27 ENVTL. L. 755, 764 (1997). *But see* Thomas, *supra* note 33, at 125 (recommending repeal of No Surprises rule as antithetical to adaptive management); John Kostyack, *Surprise!*, 15 THE ENVIRONMENTAL FORUM 19, 21 (1998); Parenteau, *supra* note 108, at 299.

²³⁵ See, e.g., NATURAL HERITAGE INSTITUTE, *supra* note 94, at 32-35; Watchman et al., *supra* note 87, at 6-7; K. Shawn Smallwood et al, *Using the Best Scientific Data for Endangered Species Conservation*, 24 Environmental Management 421 (1999).

²³⁶ See *The Endangered Species Act: The Role of Habitat Conservation: Hearing Before the Subcomm. On Env't & Nat. Resources of the Comm. On Merchant Marine & Fisheries*, 103rd Cong. 150 (1993) (statement of Michael Bean, Chairman, Wildlife Program, Environmental Defense Fund) (“Because HCPs are new, they represent a sort of

was adopted as a novel approach to regulation that significantly departed from the established command-and-control model.²³⁷ The shift was based on providing a more pragmatic but untested regulatory alternative to governance that relied on reconciling environmental conservation and economic development goals by allowing for site-specific, collaborative negotiation and subsequent plan adaptation during implementation. Though this program has served as a regulatory vanguard, catalyzing other “eco-pragmatic” regulatory programs over the past twenty-five years,²³⁸ the Services have never rigorously examined whether the new approach actually was more effective at achieving the core conservation, economic or democratic goals of the experimental program.

A. An Untested and Uncontrolled Experiment

For *any* regulatory program to be effective, the responsible agency must collect and respond to information learned about the program during its implementation, and programs that use adaptive management protocols certainly are no different.²³⁹ Unfortunately, little attention has been given by the Services to the design of HCP decision-making processes, both at the program and individual HCP level. The Services appear to prefer a decentralized, case-by-case approach to structuring HCP processes, providing only a minimal framework for applicants to follow. This individualized approach would not necessarily be incongruent with an evolutionary regulatory structure, as long as (1) structural issues are required to be addressed when each HCP is developed, and (2) a program-wide framework is developed for allowing later negotiation processes to

experiment in new approaches to conservation. Intelligently judging the success or failure of that experiment will require a significant commitment to monitoring the actual implementation of approved plans.”).

²³⁷ See *supra* Part I.B.

²³⁸ See, e.g., Negotiated Rulemaking Act of 1990, 5 U.S.C. §§ 561-70 (2000); Environmental Protection Agency’s Project XL, Regulatory Reinvention (XL) Pilot Projects, 60 Fed. Reg. 27,282 (May 23, 1995). See also Freeman, *supra* note 3, at 35.

²³⁹ See Ruhl, *supra* note 72, at 936 n.221 (“[A]daptive management, to be effective, does require institutions that ensure a rigorous framework and implementation policy, meaning that successful adaptive management requires attention to institutional concerns as well to the fabric of adaptive management itself. This does not, however, distinguish adaptive management from any other resource management decision-making approach.”). See also B.L. Johnson, *Introduction to the Special Feature: Adaptive Management - Scientifically Sound, Socially Challenged?* 3(1) CONSERVATION ECOLOGY 10 (1999), available at <http://www.consecol.org/vol3/iss1/art10/> (last visited Aug. 14, 2006) (“[A]daptive management considers change and cooperation as inherent to management....To help develop new institutional arrangements, we might apply adaptive management experiments not just to the resource, but also to institutions themselves.”).

learn from earlier ones. However, neither of these conditions exists in the HCP program.

First, other than requiring an application submittal and a minimum public comment period on the draft application, the Services leave process design questions regarding data gathering and decision-making open for applicants to formulate.²⁴⁰ Only rarely do the negotiating parties develop a structure for the HCP decision process as each HCP is being developed. One study found that only six percent of the HCPs analyzed included any discussion and approval of a process framework for information sharing and decision-making.²⁴¹ For most HCPs, the parties improvised as the HCP process progressed.²⁴² This extemporized approach often resulted in inefficiency in the decision-making process, as confusion and conflict between stakeholders arose about the process and the various roles of participants.²⁴³

Second and more significantly, the Services have wholly failed to develop a systematic and coordinated framework for learning about HCP decision-making processes, making it impossible to evaluate and adapt the program's data gathering, participation, monitoring, and adaptation methods. Although the HCP program is well over two decades old, with hundreds of HCPs in existence, the Services have not set up a centralized clearinghouse for gathering and accessing basic HCP documents and biological data, let alone information about HCP participation, monitoring, and adaptive management protocols. Despite various appeals for data gathering on HCPs,²⁴⁴ including a bill proposed in the House of

²⁴⁰ See HCP HANDBOOK, *supra* note 42, at 3-6 (“[The Services’] function as agency representatives is to provide guidance about statutory and policy standards and to help facilitate development of a suitable mitigation program that satisfies the requirements of section 10; it is not to dictate every element in the HCP. The option to ignore or modify Service recommendations remains with the applicant.”).

²⁴¹ See Ostermeier et al., *supra* note 113, at 171 (“[I]n the vast majority of HCPs evaluated, little up-front attention appears to have been given to designing and/or clarifying HCP management processes. For example, in only two cases did participants indicate significant early discussion, and subsequent approval, of an overall framework for establishing and clarifying roles, setting guidelines, sharing assumptions and expectations, and establishing rules for role implementation, including who would play the roles.”).

²⁴² See *id.* (“[P]rocess management and a decision framework normally evolved as cases progressed with a default strategy of ‘deciding as we go.’”).

²⁴³ See *id.* (“In the absence of open clarification, assumptions about roles and who would play them were made by both service and non-service participants, and problems often surfaced when these assumptions were inconsistent.”).

²⁴⁴ See, e.g., *Hearings*, *supra* note 168, at 9-10 (statement of Peter Kareiva, NMFS) (calling for a centrally organized and publicly available database on existing HCPs);

Representatives²⁴⁵ and even draft guidance by the Services,²⁴⁶ still no such database exists.²⁴⁷ As detailed earlier,²⁴⁸ though a limited number of studies have been undertaken on the HCP process, these studies have been piecemeal and conducted by outside researchers, not any of the agencies with the ability to administer and adjust the program.

Much of what would be helpful—collecting and organizing existing information on HCPs and making it publicly available—would not be technologically difficult or expensive.²⁴⁹ Yet the current Presidential administration has actually been eliminating heavily used databases and library networks that compile for agency and public use environmental

Jamison Colburn, *The Indignity Of Federal Wildlife Habitat Law*, 57 ALA. L. REV. 417, 453 n.142 (2005).

²⁴⁵ See Endangered Species Recovery Act of 1999, H.R. 960, 106th Cong. (1999). The bill would have required permittees to submit an annual report (to be made public) detailing the status of species in the affected area, the HCP and take's impacts on the species, and whether biological goals were being met. See *id.* § 108(a)(2)(D)(i), (ii). The Secretary of Interior would have had to review and report on the progress of each HCP every three years through an annual report on the plans reviewed that year. See *id.* § 108(a)(3)(A). The bill also created a "community assistance program" providing a regional office liaison for property owners and local governments to supply information and assist compliance with the ESA. See *id.* § 108(a)(12).

²⁴⁶ See Notice of Availability of a Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, 64 Fed. Reg. 11,485, 11,488 (March 9, 1999). The proposed guidance required a database "to track incidental take permit issuance and compliance," including summary information about each HCP and suggesting inclusion of information on the monitoring program, reporting deadlines, the take's effect, the conservation program's status, periodic audits and field visits. *Id.*

²⁴⁷ The bill was dead on arrival, and the final Service guidance erased without explanation any mention of such a database. See HCP Handbook Addendum, *supra* note 8; John Leshy, *The Babbitt Legacy at the Department of the Interior: A Preliminary View*, 31 ENVTL. L. 199, 212 (2001).

²⁴⁸ See *supra* notes 103, 116, 119, 153-155, 157 and accompanying text.

²⁴⁹ See *Hearings*, *supra* note 168 at 9 (statement of Peter Kareiva, NMFS) ("There's a lot of information out there that we already have, and it's not as though we have to undergo a national initiative for great basic research. Part of the challenge is just organizing that information with a little bit of energy."); *id.* at 10 ("[O]ne thing that could be done even within the existing HCP process is to require HCP preparers to provide data in a publicly available way...create a data file, put it on the web so that other people could examine the data for population trends and numbers."); *id.* at 27 (statement of Stuart Pimm, Professor, Univ. of Tenn.) ("[FWS] would seem to be an obvious place to deposit Habitat Conservation Plans.... [T]his should not be a particularly onerous task. The plans themselves are documents that can very simply be uploaded onto a website or assembled onto CDs.").

research and technical information that is unavailable anywhere else.²⁵⁰ As such, even obtaining a copy of an HCP is still quite onerous.²⁵¹

The FWS did develop an Environmental Conservation Online System (ECOS),²⁵² which includes a database that serves as the only centralized, publicly available location for information on HCPs that either of the Services compiles.²⁵³ However, this database is of marginal value at best, and cannot serve as a valuable learning tool for the HCP regulatory program. The database only includes the most rudimentary data, such as plan location, size, application status, permit issuance date, species covered and duration for individual HCPs.²⁵⁴ Yet even this data is provided only for each individual HCP separately; the database neither provides any search engine for examining the limited data nor aggregates data to provide a programmatic summary.²⁵⁵ Furthermore, only a few HCPs are sporadically available through the database.²⁵⁶ Other than merely providing the total

²⁵⁰ See, e.g., EPA LIBRARY NETWORK: CHALLENGES FOR FY 2007 AND BEYOND: FINDINGS AND RECOMMENDATIONS OF THE EPA LIBRARY NETWORK WORKGROUP (Nov. 22, 2005), http://www.peer.org/docs/epa/06_9_2_library_network.pdf (last visited Aug. 14, 2006); Public Employees for Environmental Responsibility, *Bush Axing Libraries While Pushing For More Research—EPA Set to Close Library Network and Electronic Catalog*, Feb. 10, 2006, http://www.peer.org/news/news_id.php?row_id=643 (last visited Aug. 14, 2006); Public Employees for Environmental Responsibility, *EPA Closing Its Midwest Library—Holding Will Be Stored Indefinitely; Public Access to Research Compromised*, March 16, 2006, http://www.peer.org/news/news_id.php?row_id=660 (last visited Aug. 14, 2006).

²⁵¹ See, e.g., *Gerber v. Norton*, 294 F.3d 173, 177-78 (D.C. Cir. 2002) (plaintiff forced to request copies of HCP documents through formal FOIA request); Telephone Interview by Dan Cory with Robert McClure, Reporter, Seattle Post Intelligencer (July 21, 2006) (recounting that in attempting to collect almost 100 HCPs, some regional offices required FOIA request or in-person document review); Thomas, *supra* note 33, at 122 (“Anyone who has searched for an HCP ... understands the transparency problem. One can purchase copies ..., but this is an expensive and time-consuming proposition.”).

²⁵² See Environmental Conservation Online System, http://ecos.fws.gov/ecos_public/index.do (last visited Aug. 14, 2006).

²⁵³ See *ECOS Conservation Plans and Agreements Database*, http://ecos.fws.gov/conserv_plans/public.jsp (last visited Aug. 7, 2006).

²⁵⁴ See *id.*

²⁵⁵ See *id.*

²⁵⁶ See *ECOS Conservation Plans and Agreements Database*, Regions 3, 6 http://ecos.fws.gov/conserv_plans/public.jsp (follow the “Region 3” and “Region 6” links) (last visited Aug. 14, 2006). Regions Three and Six are the only regional offices providing any significant amount of HCP-related documents for download through the ECOS system, providing documents for three and nineteen HCPs, respectively. See *id.* Region Two also supplies its own web library that includes some HCP-related documents. See FWS Southwest Region (Region 2) Ecological Services Electronic Library, <http://www.fws.gov/ifw2es/Library/> (last visited Aug. 14, 2006).

number of HCPs and ITPs issued to date, this database does not compile and provide any systematic information about the HCP program itself.²⁵⁷

Because of concerns regarding the Services' failure to develop a useful comprehensive database on HCPs, some private organizations have endeavored to develop a private resource pool "to enable independent scientific expertise to be brought into HCP negotiations on behalf of conservation interests and local communities."²⁵⁸ Unfortunately, this initiative to create an "HCP Resource Center" never became operational, though seed money had been gathered and some Service field staff expressed support for such a center.²⁵⁹ High-level Service officials ultimately resisted this independent effort, claiming it was unnecessary and unwise, and proponents were unable to collect sufficient funds to establish the database.²⁶⁰ Thus, when biological data on species or habitat is gathered during the HCP formation or implementation processes, it is generally not readily accessible by interested parties for subsequent HCP applications.²⁶¹

The essential information that the Services have failed to collect, circulate and evaluate is by no means limited to substantive data about regulated species and ecosystems, however. More importantly, the Services have never attempted to gather data about the range of procedural strategies utilized under the HCP program—monitoring, adaptive management, or participation techniques—to adjust the program to account for the results. For example, the Services could but do not systematically assess the relative effectiveness of adopted mitigation and recovery measures in minimizing a take's effect on an existing species. The Services have also never systematically compiled data about the costs and benefits of monitoring and adaptation procedures as compared to other adopted adaptive practices and more conventional implementation procedures. Nor have they assessed the relative efficacy of different adaptive processes in distinct implementation

²⁵⁷ See *ECOS Conservation Plans and Agreements Database, Regional Report*, http://ecos.fws.gov/conserv_plans/servlet/gov.doi.hcp.servlets.PlanReportSelect?region=9&type=HCP (follow "Regional (Summary) Report" link) (last visited Aug. 14, 2006).

²⁵⁸ NATURAL HERITAGE INSTITUTE, *supra* note 94, at 23.

²⁵⁹ See Telephone Interview with Greg Thomas, President, Natural Heritage Institute (June 27, 2006).

²⁶⁰ See *id.* The Nature Conservancy has created NatureServe.org, a publicly available electronic database that serves as a repository of scientific data about endangered and threatened species. See <http://www.natureserve.org> (last visited Aug. 14, 2006). However, no information focusing on HCPs or the HCP program itself are included in the database.

²⁶¹ See Thomas, *supra* note 33, at 115 ("[N]either the FWS nor the Department of Interior have developed a public HCP library, let alone a transparent monitoring program through which centralized actors and citizens can learn whether and to what degree HCPs are being implemented.").

contexts, most obviously to evaluate the value of different forms of adaptation in circumstances with varying levels of certainty.²⁶²

In the same way, the Services do not observe and evaluate the effect and effectiveness of various *types of participation* used in HCP processes. These may range from transparency measures (*e.g.*, open negotiations, document access), to indirect participation by stakeholders (*e.g.*, opportunities to comment, receive responses to such comments), to direct stakeholder involvement (*e.g.*, steering committees). The Services have never explored the value of these participation alternatives for different *types of HCPs*, based on the number and range of interested stakeholders, the type of species or habitat involved, the form of proposed take, the type of applicant (public versus private), or the novelty of the proposed take being considered. Finally, the Services have not assessed the value of these different forms of participation in the various *stages of the regulatory process*, whether the initial scoping of issues and alternatives, developing the process framework, plan negotiations, post-negotiation comment period, or during implementation.

The Services simply speculate that participation is generally valuable, but leave questions regarding the forms of participation for a particular HCP process to individual applicants to develop without providing any rigorous data about the value of different types of participation in different contexts. Thus, in the rare circumstance when an applicant is motivated to integrate other parties into the regulatory process, her at best limited experience with HCPs undoubtedly leads to a less cost effective process than one informed by the aggregated experiences of hundreds of previously adopted HCPs.²⁶³

²⁶² For example, it might be reasonable for an HCP to adopt a contingency planning measure instead of a more comprehensive adaptive management protocol on the assumption that it is more effective when the HCP relies on substantial reliable information about the effect of a proposed take on a listed species. Yet, without monitoring and assessing the effectiveness of the adopted process as compared to those adopted for other HCPs program-wide, such an assumption is never tested, and the Services and public can never learn if the assumption is a valid one.

²⁶³ Generally, each applicant must rely primarily on its own experiences, with at best incomplete access to data on what practices might be most cost effective to implement. As in other regulatory contexts, an HCP process may involve a repeat player such as an attorney representing successive applicants in negotiating HCPs. Such a participant may inform the HCP process with her experience (*e.g.*, by relying on language from previously negotiated HCPs when drafting later ones). Though this experience may serve to make the process somewhat more economical, it inevitably falls far short of a more systematic, comprehensive approach to regulatory learning.

Given this inefficiency, it is unsurprising that the chief criticism of HCPs is the administrative cost of the approval process.²⁶⁴

To be sure, Service staff assigned to negotiate an HCP in all likelihood rely on some previously ascertained data, and they may informally provide such information to applicants in the negotiation process. However, there is no comprehensive network to facilitate the dissemination of this information in other than a haphazard, and likely inefficient, way. HCP negotiation and implementation are conducted by regional and field offices without any centralized or even decentralized coordination.²⁶⁵ Moreover, the high turnover of Service staff exacerbates this fragmentation problem by further limiting the ability to draw on prior experience.²⁶⁶ As such, there is at best limited cross-pollination of data among HCPs about affected species and habitat, and certainly less than could occur.²⁶⁷

Similarly, the Services have undeniably modified the HCP program requirements since the program's inception in 1982—most notably through the promulgation of the Addendum to the HCP Handbook²⁶⁸ and the “No Surprises” policy²⁶⁹—presumably to tailor the program to be more effective. Thus, in some sense, they have engaged in some form of reflection and adaptation of the program, perhaps to account for information acquired during the program's implementation. However, the Services never provided any systematic evaluation of the HCP program in support of such programmatic changes. Though the Services may have relied at least in part on the experiences of some Service officials in determining that the regulatory changes adopted were warranted, Service conclusions about the

²⁶⁴ See, e.g., Bean et al., *supra* note 46, at 13 (“[T]he complexity, duration, and sheer magnitude of the process often limit participation by small landowners, environmental interests, and other “shallow-pocketed” parties. Indeed, the inability of such parties to participate in the time-consuming, highly technical, and costly process may be more of a problem than having so many of them as to make the process difficult to manage.”); .Albert Lin, *Participants’ Experiences with Habitat Conservation Plans and Suggestions for Streamlining the Process*, 23 *ECOL. L. Q.* 369, 398 (1996) (finding insufficient information as most frequent cause of delay).

²⁶⁵ See Karkkainen, *supra* note 176, at 496 (“[R]esponsibility for negotiating HCPs and enforcing their terms was a responsibility assigned to regional and field offices, each operating largely by its own lights.”).

²⁶⁶ The FWS has reported substantial staff attrition due to the overwhelming workloads that result from insufficient funding. See *Hearings, supra*, note 168 at 119, 387 (statement of then-FWS Director Jaime Rappaport Clark).

²⁶⁷ See *Hearings, supra* note 168, at 11 (statement of Dr. Dennis Murphy, Univ. of Nev., Reno) (“My sense is that we can infer greatly from other systems and other species and we’re losing that opportunity.”).

²⁶⁸ HCP Handbook Addendum, *supra* note 8, at 35,242.

²⁶⁹ 50 C.F.R. §§ 17.22(b)(5), 17.32(b)(5) (2004).

program's effectiveness were essentially based on anecdotal evidence rather than a rigorous analysis rooted in a commitment to regulatory experimentation.

B. The Value of Adaptive Regulation

Though increasing participation and adapting individual HCPs without program adaptation would likely still serve to improve the HCP program, adaptively managing the program itself is necessary to better understand the regulatory process and work toward obtaining an *optimal* regulatory program. Substantial evidence from the HCP program suggests that by requiring the involvement of a range of perspectives rather than solely the applicant's, the Services can develop HCPs based on better data than under existing bilateral requirements, more effectively combat concerns regarding agency capture, and foster a more cooperative and perhaps even more cost effective approach to regulation.²⁷⁰ Similarly, by monitoring biological data about species, habitat, and mitigation for an individual HCP, the Services can both improve compliance and enforcement and better tailor conservation activities to be more effective.

However, only by gathering information about the HCP program itself can the Services, Congress and the public better understand and evaluate the regulatory process. By experimenting with and persistently monitoring the range of participation types used, the Services can better understand the value of participation, and explore what would be the optimal participation approach for a particular context. By examining information about the HCP program's use of monitoring and adaptation protocols, the Services can better understand the value of different implementation approaches. Through adaptive regulatory management, fundamental questions that are incapable of answer at the outset—how much participation is optimal, what type of monitoring protocol should be used—can begin to be resolved.

More significantly, rather than the conventional approach of neglecting periodic assessment of regulation, an adaptive regulatory approach requires the repeated consideration of the effectiveness and cost effectiveness of the regulatory program in meeting statutory goals. Adaptive regulatory management allows the agency, Congress and the public to judge regulatory outcomes—to consider the critical, but heretofore unanswered, questions of what is the most effective way to appropriately balance the development and conservation goals of the HCP program. With a public, comprehensive information apparatus, all regulatory actors can compare the relative merits

²⁷⁰ See *supra* notes 141 – 149 and accompanying text.

of adopted HCPs in balancing economic development and environmental conservation—to learn to tailor the optimal reconciliation of these principles in a comprehensive, open, and informed way.²⁷¹

Finally, it should be noted that by requiring the Service to monitor and adapt the regulatory process itself, adaptive regulatory management allows the Service’s implementation of the HCP program to itself be monitored and evaluated by both Congress and the public at large.²⁷² This is necessary not only in order to develop HCPs that are better able to meet program goals, but also to promote accountability and limit the vulnerability of participatory decision-making processes to capture. As raised by some scholars, adaptive processes are certainly vulnerable to capture, and in fact may be more so than conventional “front-end” static approaches because there are simply more opportunities available to privileged participants to affect decisions.²⁷³ The potential for agency bias, however, is certainly not a product of an adaptive regulatory approach; rather, providing for adaptation merely brings to the surface the vulnerability to bias that already exists for any regulatory decision for which participation is a feature.²⁷⁴ Indeed, the experience of the HCP program is that the existing bilateral model that the Services have employed in implementing the HCP program makes agency bias almost inevitable. A key role of transparency and inclusive stakeholder participation in the regulatory process, then, is to alleviate legitimate concerns regarding agency bias by placing a mechanism for agency accountability in the hands of those most affected by the regulatory decision.²⁷⁵ By requiring the Services’ implementation of the HCP program to be subject to ongoing monitoring and evaluation, not only

²⁷¹ It is important to recognize that regulatory adaptation does not merely serve to increase conservation and participation at all costs. The Services’ regulatory program must be adaptively managed to ensure that it is not needlessly costly as well. An adaptive approach considers the benefits *and* costs of regulatory processes, including the administrative costs of implementing more costly participatory or adaptive requirements. In doing so, an adaptive HCP program would focus on how to optimize the effectiveness and cost effectiveness of participation and adaptation in promoting conservation, economic and democratic goals.

²⁷² See Ruhl, *supra* note 234, at 1278 (“[T]he agency’s use of adaptive management itself must be continuously monitored and evaluated to guard against opportunistic abuses.”).

²⁷³ See Holly Doremus, *Adaptive Management, the Endangered Species Act, and the Institutional Challenges of “New Age” Environmental Protection*, 41 WASHBURN L.J. 50, 71-74; Ruhl, *supra* note 234, at 1278.

²⁷⁴ See Ruhl, *supra* note 234, at 1278 (“‘front end’ regulatory instruments... can be manipulated just as easily [as adaptive management processes] to open the possibility of politically-motivated implementation.”).

²⁷⁵ See J.B. Ruhl, *Prescribing the Right Dose of Peer Review for the Endangered Species Act*, 83 NEB. L. REV. 398, 411-12 (2004).

by Congress but the public at large, adaptive management of the regulatory program serves to curb opportunities for bias that otherwise are present through the existing opaque and bilateral HCP negotiation process.

V. ADAPTING REGULATION: THE LESSONS FROM THE HCP PROGRAM

As it consistently has on regular intervals,²⁷⁶ the United States Congress is once again considering a number of substantial amendments that seek to adapt, if not overhaul, the Endangered Species Act.²⁷⁷ As was the case for most previous proposals to amend the Act,²⁷⁸ it is quite possible that ultimately no amendment will be adopted in the near future.²⁷⁹ However, though certainly *how* the Act should be altered is very much still a subject of debate in Congressional circles,²⁸⁰ there appears to be a level of consensus among informed observers that modifying the Act in some substantial way would be beneficial.²⁸¹ Many from all sides of the debate concur that the ESA's emphasis on preventing development rather than focusing on recovery is misplaced and ineffective,²⁸² pointing out that both listed species and candidates to be listed continue to deteriorate.²⁸³

²⁷⁶ See Endangered Species Act Amendments of 1978, Pub. L. 96-159, 93 Stat. 1225 (1978); Endangered Species Act Amendments of 1982, Pub. L. 97-304, 96 Stat. 1426 (1982); Endangered Species Act Amendments of 1988, Pub. L. 100-478, 102 Stat. 2315 (1988).

²⁷⁷ See, e.g., Threatened and Endangered Species Recovery Act of 2005, H.R. 3824, 109th Cong. (2005); Collaboration and Recovery of Endangered Species Act, S. 2110, 109th Cong. (2005); Critical Habitat Enhancement Act of 2005, H.R. 1299, 109th Cong. (2005); Endangered Species Compliance and Transparency Act of 2006, H.R. 4857, 109th Cong. (2006).

²⁷⁸ See, e.g., Endangered Species Conservation and Management Act of 1995, H.R. 2275, 104th Cong. (1995); Common Sense Protections for Endangered Species Act of 2000, H.R. 3160, 106th Cong. (2000); Sound Science for Endangered Species Act Planning Act of 2002, H.R. 4840, 107th Cong. (2002).

²⁷⁹ See Freeman & Berman, *supra* note 5.

²⁸⁰ See KEYSTONE CENTER, THE KEYSTONE WORKING GROUP ON ENDANGERED SPECIES ACT HABITAT ISSUES - FINAL REPORT 16 (2006). See also Allison A. Freeman, *supra* note 5 (quoting Senators involved in committee ESA amendment negotiations as saying that they were deadlocked due to disagreement on issues of funding, critical habitat, and the jeopardy standard, among others).

²⁸¹ See *id.* at 13-15; Steven Burns & Jeffrey Wood, *Moving Toward Recovery: A Southeastern Analysis of the Threatened and Endangered Species Recovery Act of 2005* (H.R. 3824), 21 J. LAND USE & ENVTL. L. 23, 49-50 (2006).

²⁸² See Colburn, *supra* note 244, at 444; Burns & Wood, *supra* note 281, at 25, 30; John Kostyack, *Reshaping Habitat Conservation Plans for Species Recovery: An Introduction To a Series of Articles on Habitat Conservation Plans*, 27 ENVTL. L. 755, 760 (1997).

²⁸³ As of the FWS's most recent report to Congress, a majority of listed species (sixty-

Recognizing the past limitations of the original ESA's command-and-control framework, a wide array of scholars involved in the most recent ESA amendment discussions agree on the need to focus not only on legislative mandates but also adjusting the incentives for developers to participate in the governance process.²⁸⁴ However, existing Congressional proposals almost exclusively concentrate on ways to improve the outputs of the regulatory process, such as through direct subsidies to applicant-developers to engage in species recovery,²⁸⁵ ignoring the fundamental limitations of the existing regulatory process itself. Over the past quarter-century, the Services' implementation of the pioneering but rudderless HCP program has exposed three basic flaws that serve as valuable lessons for formulating not only an improved ESA, but regulatory processes more generally. As detailed in this Part, in designing and adapting any regulatory program, Congress must recognize that only by attending to agency resources, legislative directives, and applicant incentives can an adaptive regulatory program have a chance to succeed.

A. Resources: Making Evolution Possible

A straightforward but nonetheless vital lesson of the Services implementation of the HCP program is that without sufficient resources directed toward information gathering, monitoring and adaptation, a regulatory agency will not be able to implement adaptive regulatory management. For any regulatory program to be successful, Congress must appropriate sufficient funding to engage in the required administrative functions.²⁸⁶ Given the persistent weak financial support provided to the Services to engage in habitat conservation as compared to their workload,²⁸⁷

three percent) are considered to be of uncertain or declining status or are possibly extinct. See U.S. FISH & WILDLIFE SERV., RECOVERY REPORT TO CONGRESS: FISCAL YEARS 2001-2002 10 (2002)

²⁸⁴ See KEYSTONE CENTER, *supra* note 280, at 19-23; Threatened and Endangered Species Recovery Act of 2005, § 13, H.R. 3824, 109th Cong. (2005); Incentives for Species Recovery Act, S. 2110 tit. III, 109th Cong. (2005).

²⁸⁵ See Threatened and Endangered Species Recovery Act of 2005, H.R. 3824, 109th Cong. § 13 (2005).

²⁸⁶ See, e.g., *Hearings, supra* note 168, at 119 (statement of Dr. Donald Barry, Assistant Sec'y of Fish, Wildlife, and Parks) ("Without increased funding, we will not be able to adequately monitor HCPs to the extent desired by both supporters and critics of the HCP program.")

²⁸⁷ See Thomas, *supra* note 33, at 112, 115. Though not incontrovertible, it is telling that in a 2005 survey, 92% of 414 FWS scientists reported that they did not believe the agency "has sufficient resources to adequately perform its environmental mission," and 85% reported funding to implement the ESA is inadequate. See Union of Concerned Scientists & Public Employees for Environmental Responsibility, *U.S. Fish & Wildlife*

and in particular implementation activities,²⁸⁸ it is perhaps not surprising then that the Services neglect those activities they view as less celebrated and more resource intensive in the short-term, such as managing stakeholder participation and enforcement and implementation of HCPs.²⁸⁹ Indeed, in a 1998 survey, 95% of FWS enforcement agents reported that the FWS law enforcement program is insufficiently staffed to fulfill its wildlife protection mission, and 99% reported that enforcement expenditures and staffing have failed to keep pace with the growth in other FWS programs.²⁹⁰ Surely, Service officials could more effectively engage in their mediative and oversight activities if additional funding were provided. Such funding is necessary for direct resource management and recovery activities by the Services as well,²⁹¹ particularly for addressing unforeseen circumstances where the permittee is not required to engage in adaptive management.²⁹²

Although existing funding for Service program management is undoubtedly inadequate, it is nonetheless short-sighted to assume reflexively (as the Services appear to do)²⁹³ that providing early

Service Survey Summary, February 2005, available at http://www.peer.org/pubs/surveys/2005_fws_survey.pdf (last visited Aug. 14, 2006). Similarly, 81% of 124 NMFS scientists responded that NMFS lacked sufficient resources “to adequately perform its environmental mission.” See Union of Concerned Scientists & Public Employees for Environmental Responsibility, *NOAA Fisheries Survey Summary*, June 2005, available at http://www.peer.org/pubs/surveys/2005_noaa_survey.pdf (last visited Aug. 14, 2006).

²⁸⁸ See *supra* note 228 and accompanying text.

²⁸⁹ See *Land and Money Mitigation Requirements in Endangered Species Act Enforcement: Hearing Before the Comm. On Resources*, 106th Cong. 102 (1999) (statement of then-director of FWS Jamie Rappaport Clark) (“We don’t, quite frankly, have the resources to go back and evaluate whether the terms of these HCPs that have been...negotiated and approved, are actually being carried out.”); YAFFEE ET AL., APPENDIX A-Weyerhaeuser-10 (quoting FWS biologist as stating most HCP staff recognize the irritations and difficulties of participation but disregard its usefulness).

²⁹⁰ See Public Employees for Environmental Responsibility, *1998 PEER Survey of FWS Special Agents*, Questions 2, 3, available at http://www.peer.org/pubs/surveys/1998_usfws_lawenforcement.pdf (last visited Aug. 7, 2006).

²⁹¹ See *Hearings, supra*, note 168 at 23 (statement of Dr. Dennis Murphy, University of Nevada, Reno) (“[W]e’re never going to get (to recovery) if we have to go through an appropriations process to respond to crises; that we really do need a pool of money, an endowment of sorts that can be tapped, hopefully conservatively, to resolve problems.”).

²⁹² See NATURAL HERITAGE INSTITUTE, *supra* note 94, at 29 (suggesting federal trust for funding conservation activities beyond those required of applicants to meet biological goals).

²⁹³ See, e.g. YAFFEE ET AL., *supra* note 103, at 5-15 (“USFWS staff strongly felt that public participation increased the cost and length of HCPs.”); HCP Handbook Addendum, *supra* note 8, at 35,252.

participation and adaptation necessarily is substantially more resource intensive than the HCP program's existing bilateral and static approach. Though adaptive management initially may be more resource intensive given the lack of an existing framework, as the adaptive apparatus develops and HCP information is disseminated, even the Services appear to agree that costs will decrease as new HCPs rely on the data of earlier ones.²⁹⁴ Similarly, though not extensively tested in the HCP program's context, there is at least some evidence that litigation costs are reduced and permit implementation is more likely to be trouble-free in contexts where there are more rigorous and early opportunities for participation.²⁹⁵ These decreased costs serve at least to offset in part any administrative costs of increasing early participation in the regulatory process.

More importantly, any increased administrative costs must be considered in light of the substantive benefits of such activities. These include improved HCPs based on more reliable information and more democratic processes viewed as more satisfactory to stakeholders.²⁹⁶ Thus, though increasing the Services' budget would enhance the Service's ability to engage in HCP program management, even with limited funds Service efforts to increase adaptation and participation may not significantly increase administrative costs, and in any event may be worthwhile given the inadequate information upon which most HCPs are based.

²⁹⁴ See *Hearings, supra*, note 168 at 97 (statement of Hon. Donald J. Barry, Assistant Sec'y for Fish, Wildlife and Parks) (“(We should) be able to develop more of a template HCP that could be utilized readily, pulled off the shelf in a particular area for certain species, and use that as a way of streamlining the cost and the process.”). See also *id.* at 10 (statement of Peter Kareiva, NMFS) (“[I]f we did produce data bases, if we put energy into that, subsequent efforts would go much faster.... Any data that you put in a computer data base for any of those HCPs will inform future conservation plans that touch on those same species.”); Wilhere, *supra* note 32, at 27 (“The information obtained from one HCP can be applied to future HCPs and other conservation programs. The amount of research and monitoring needed by future HCPs could be reduced and the efficiency of conservation measures could be increased.”).

²⁹⁵ See *supra* notes 143 – 145 and accompanying text. Cf. Jody Freeman, *Extending Public Law Norms through Privatization*, 116 HARV. L. REV. 1285, 1339 (2003) (discussing public laws and the ways in which increased public participation, though potentially more costly up front, can reduce overall costs by minimizing future conflicts among the affected parties); Camacho, *supra* note 3, at 307-09 (summarizing empirical data suggesting that implementing additional collaborative procedures in environmental and land use regulation may decrease administrative costs in the long run).

²⁹⁶ See *supra* note 144 and accompanying text; Wilhere, *supra* note 32, at 22 (“The costs of research and monitoring make adaptive management seem relatively expensive. But if all costs are considered, then adaptive management may be relatively inexpensive over the long run. In theory, investments in reliable information should yield excellent returns in the sustainable use of natural resources.”).

B. Legislative Directives: Making Evolution Plausible

Though sufficient funding for the Services to perform their statutory mandate is necessary, the availability of resources alone does not increase the plausibility that the Services will attempt to cultivate transparent information gathering, meaningful participation and adaptive management.²⁹⁷ A second key lesson from the HCP program is that without legislative guidance mandating participation and an adaptive experimentalist framework, administrative officials will not scrupulously foster participation or engage in regulatory adaptation. Whether due to regulatory capture, an over-reliance on agency expertise manifested as a disregard for the value of participation, or simply a reticence toward learning and change, Service interpretation and implementation of the HCP program quickly stifled the potential for adaptive regulation.

As such, the statute itself must provide a framework for regulatory experimentalism that mandates early and meaningful opportunities for participation and a framework for HCP adaptation. In this vein, Congress should amend the HCP program to require the Service to provide for stakeholder involvement in HCP formation, implementation and enforcement for an applicant to avail itself of the ITP exception. Drawing on the most common method used voluntarily by applicants to obtain stakeholder input in the existing HCP program, at the outset the default avenue for participation should be a steering committee of interested stakeholders²⁹⁸ with independent scientists to review the applicant's submitted biological data.²⁹⁹ The committee would help the applicant and Services develop the plan, monitor performance, and adjust HCP activities. Short of requiring all HCPs to form a steering committee, the program could provide an alternative multilateral process to the existing bilateral approach that subjects an applicant to streamlined administrative review and

²⁹⁷ Cf. Freeman, *supra* note 3, at 17 (stating Environmental Protection Agency's failure to adequately address its enforcement responsibilities is a product not only of inadequate resources but also institutional incentives).

²⁹⁸ See Doremus, *supra* note 102, at 716.

²⁹⁹ See Watchman et al., *supra* note 87, at 5-6 ("A ... precautionary approach would be to build more independent scientific review into the HCP development process. Teams of qualified scientists could be assembled to review topics such as data gaps for species commonly addressed by HCPs or the evidence of the efficacy of specific management and mitigation techniques. Such scientific reviews could reduce uncertainty for both landowners and imperiled species by vastly improving the information available for future plans."); *Hearings, supra*, note 168 at 213 (statement of Gregory Thomas, Natural Heritage Institute).

more deferential judicial review if the applicant uses a steering committee.³⁰⁰

It is important to note that providing interested stakeholders additional early opportunities for input is not inevitably an unmanageable endeavor. The Services certainly could require, subject to judicial review, a demonstrated good faith willingness and capacity to contribute to HCP formation or implementation before inclusion in a steering committee.³⁰¹ As already occurs for a few HCPs, the Services or applicant can provide key under-resourced³⁰² community groups that qualify as stakeholders financial support to assist them in participation.³⁰³ Regardless of whether steering committees are required for all HCPs or not, those precluded from direct participation should nonetheless be allowed to observe key HCP negotiations and examine any principal drafted documents used during negotiations or developed during implementation.

To address the Services heretofore indifference to adaptation, Congress should insist on systematic periodic assessment and adaptation³⁰⁴ by making HCP approval contingent on inclusion of monitoring and biological criteria to account for new information and evolving environmental circumstances that trigger mitigation modification if not met. Legislative directives should also tap private resources to assist in the implementation process. For example, the Services should require publication of monitoring reports.³⁰⁵ This builds in an incentive for the Services and applicant to reliably oversee HCP implementation by providing the public the ability to check whether the applicant and Services are both monitoring compliance and in

³⁰⁰ Cf. Harter, *supra* note 3, at 103 (1982) (suggesting a negotiated rule should be “sustained to the extent that it is within the agency’s jurisdiction and actually reflects a consensus among the interested parties.”); Lawrence Susskind & Gerard McMahon, *The Theory and Practice of Negotiated Rulemaking*, 3 YALE J. REG. 133, 164 (1985); Patricia M. Wald, *ADR and the Courts: An Update*, 46 DUKE L.J. 1445, 1468 (1997).

³⁰¹ See NATURAL HERITAGE INSTITUTE, *supra* note 94, at 19 (“Demonstrated ability to contribute substantively to the issues on the table without undue delay may be made the price of admission.”).

³⁰² See, e.g., YAFFEE ET AL., *supra* note 103, at A-Riverside-9 (quoting local official stating, “You might have very few environmental people and a preponderance of property owners and Building Industry Association and Farm Bureau folks. And that...was because the environmental groups were all volunteers; it was very difficult for them to attend the monthly meetings.”).

³⁰³ See *id.* at 5-2 (finding for six of thirty-five HCPs, applicant or FWS “provided citizens with financial support to participate.”).

³⁰⁴ See Watchman et al., *supra* note 87, at 7 (“[U]ncertainty could be further minimized by providing greater opportunities to adjust plans during implementation in response to new information or changing environmental conditions.”).

³⁰⁵ See Thomas, *supra* note 33, at 125.

compliance. In addition, stakeholder participation in implementation may include sequential steering committee review or providing in the HCP for third-party enforcement of HCP provisions.³⁰⁶

Of course, as the Services learn about the relative value of particular participation, monitoring and adaptation techniques by adaptively managing the HCP program, the particular parameters of new HCPs undoubtedly can be tailored to address distinctive characteristics. In this vein, Congress should mandate the development of a comprehensive framework for regulatory learning. As its core component, this framework would include a publicly accessible information clearinghouse, gathering and circulating on biological data as well as information on individual HCP negotiations and implementation activities. Finally, required publication of periodic reports assessing the program's progress would serve not only to promote Service adaptation of the regulatory program but foster accountability to Congress and the public in the endeavor.

In adopting a more multilateral regulatory approach, the Services rather than the applicant are rightly established as the hub of the regulatory process,³⁰⁷ not merely a negotiating counterweight to applicants. The Services are charged with ascertaining who may participate; gathering, managing and assessing data; mediating any conflicting data or perspectives; and making the required statutory findings. Undoubtedly, there will be challenges in integrating the range of interested parties, deciding who to allow direct participation, assembling data, and overseeing episodic HCP adjustment. However, the Services certainly are the regulatory actors best placed to make such hard but not insurmountable decisions—certainly better than the applicant, with whom such functions currently rest—and no evidence exists that the existing bilateral approach would somehow be more effective.³⁰⁸

Placing the Services in this more mediative role instead of as bilateral negotiator addresses the various weaknesses of the bilateral model revealed

³⁰⁶ See YAFFEE ET AL., *supra* note 103, at 5-2. Cf. Sean Ociepka, Casenote, *Protecting the Public Benefit: Crafting Precedent for Citizen Enforcement of Conservation Easements*, 58 ME. L. REV. 225 (2006) (discussing recent judicial recognition of citizen enforcement of conservation easements notwithstanding unclear easement and statutory provisions and limited precedent).

³⁰⁷ See NATURAL HERITAGE INSTITUTE, *supra* note 94, at 20, 37 (2000).

³⁰⁸ Cf. YAFFEE ET AL., *supra* note 103, at APPENDIX A-CLARK COUNTY-9 (quoting local HCP administrator as stating: "Keeping it totally open and inclusive has the typical downsides: people get irritated, it takes forever, and costs more—but there is no other way.").

by the HCP program. First, by doing so the Services are considerably less dependent on the applicant for information on the proposed take's potential impacts or the possible mitigation and recovery alternatives,³⁰⁹ reducing the likelihood of capture. A robust participatory process serves as the only check on an otherwise insulated agency decision-making process.³¹⁰

Second, requiring the Services to provide opportunities for participation shifts the responsibility and burden for implementation to private actors who already have the incentive to monitor applicant compliance. Involving interested stakeholders in monitoring can serve as an effective resource for ensuring compliance with the HCP without substantial new costs levied on the Services. Indeed, despite the limited access that non-applicant stakeholders have in HCP processes, even now Service officials state that third parties are their largest information source on HCP non-compliance.³¹¹ By providing third parties access to negotiations and implementation, the HCP program can more systematically harness available private resources to further the program's public goals.³¹²

Third and most importantly, ultimately the Services' can more effectively fulfill the role of mediator in marshalling data and resolving disputes between applicants and other stakeholders than serving as an isolated negotiator and monitor of HCP activities. To be sure, by relying on the scientific expertise of Service biologists, the Services may be able to gather and assess biological data and forecasts about a species or a proposed take's environmental impacts, alternatives and mitigation without engaging any of the stakeholders (including the applicant).³¹³ However, though some scientific data may be collectible and assessable without any input from those affected by the decision, many of the ultimate issues addressed by the

³⁰⁹ See ANDERSON ET AL., *supra* note 79, at 13 (finding public participation increased the information available to develop HCPs).

³¹⁰ See Dorf & Sabel, *supra* note 3, at 288 (stating participation in evaluating regulatory provisions can serve to increase the accountability of regulatory agencies).

³¹¹ See McClure & Stiffler, *supra* note 186 (quoting Bob Pine, Austin FWS habitat conservation director) ("Our biggest source of information is third party input—people writing letters saying someone didn't get a permit or take an action."). This official acknowledged that his regional department rarely does its own inspecting. See *id.*

³¹² Cf. Freeman, *supra* note 1, at 663.

³¹³ Even so, it is not at all clear that such an approach is the most effective, or even an effective, method for gathering and assessing scientific data. Certainly, a model that relies on the input of those most affected by the particular decision, as well as the input of independent scientists, at least may allow for consideration of more data than that developed by the Services alone, or might gather similar data more cost effectively. Indeed, existing evidence suggests that participation provides valuable information to the Services in developing HCPs. See *supra* notes 142, 148 – 149 and accompanying text.

Services in developing an HCP are not. Though the Services may rely on scientific expertise in ascertaining the likely impacts of a proposed take, a number of the Services' required analyses are not knowable solely by reference to the Services' biological expertise.³¹⁴ For example, the proposal and assessment of alternatives to the proposed take require the compilation of not only scientific data but also information about economic and social objectives and preferences from those affected by the regulatory decision.³¹⁵

Similarly, several of the ultimate findings required for Service approval of an ITP require an assessment that balances economic and environmental values. For instance, whether the HCP mitigates impacts to a species or habitat "to the maximum extent practicable"³¹⁶ is at least in part an assessment of the economic impact of potential mitigation on the applicant that requires a judgment call involving economic considerations on whether particular mitigation is indeed feasible. Far from claiming an expertise in analyzing economic feasibility, the Services largely ignore this area for data gathering.³¹⁷ In the same way, whether the applicant provides "adequate funding"³¹⁸ for implementation of the HCP is an economic assessment. Even the finding of whether a take "will not appreciably reduce the likelihood of the survival and recovery of the species"³¹⁹ involves a judgment as to whether a species' reduction is indeed "appreciable," a determination for which no consensus scientific criteria has been developed.³²⁰ In short, the resource allocation questions embodied in an HCP ultimately turn on public policy choices that require information about

³¹⁴ See *Hearings*, *supra* note 168, at 296 (statement of Don Rose, Manager, Land Planning and Natural Resources, Sempra Energy) ("About 90 to 95 percent ... of the professionals in the wildlife agency, the service, are biologists. They do not have the other disciplines necessary, in my opinion, to carry out what is needed for a comprehensive HCP."); Steven Yaffee, PROHIBITIVE POLICY: IMPLEMENTING THE FEDERAL ENDANGERED SPECIES ACT 162 (1982) ("While science can and should inform choice, rarely can it do so definitively. Most policy choices involve fundamental choices of social value – issues for which technicians have only one voice among many. The central issues of the endangered species case – determining what is ethical behavior and what is valuable to protect at what cost – require individual and group assessments of what is moral and what is valued. Economics and biology can only help us slightly in making those choices.").

³¹⁵ See, e.g., HCP HANDBOOK, *supra* note 42, at 3-35; *Gerber v. Norton*, 294 F.3d 173, 184-86 (D.C. Cir. 2002) (finding that Service and not just developer must determine that alternatives proposed are impracticable based on economic and other considerations).

³¹⁶ 16 U.S.C. § 1539(a)(2)(B)(ii) (2000).

³¹⁷ See *Wilhere*, *supra* note 32, at 23 (stating Services do not require applicants to provide financial data on draft HCPs for Services to make "maximum extent practicable" finding).

³¹⁸ 16 U.S.C. § 1539(a)(2)(B)(iii) (2000).

³¹⁹ *Id.* § 1539(a)(2)(B)(iv).

³²⁰ See *Wilhere*, *supra* note 32, at 26.

the preferences of those affected by the decision. As demonstrated by the HCP program experiment, only through legislatively refashioning the Services' role from negotiator to mediator can Congress make the adaptive regulatory approach plausible.

C. Incentives for Applicants: Making Evolution Probable

Finally, the HCP program experiment has demonstrated that even mandates for procedures that foster adaptation—such as the HCP program's monitoring requirements—are far from guarantees of successful regulatory adaptation. Furthermore, though the Services' No Surprises rule provided the impetus for many applicants to participate in the HCP program, it also created significant further incentives for applicants to thwart monitoring and adaptive management.³²¹ The experience of the HCP program is that providing incentives for applicants to actively assist in the governance process and contribute to information generation is critical to cultivating a truly adaptive and participatory regulatory program.³²²

Just as the agency should share responsibility to further regulatory goals with third parties consistent with their stake and abilities,³²³ it is particularly imperative to enlist the applicant to bear a portion of the costs of its activities by contributing to the furtherance of public goals. As the entity typically with the most direct access to information about regulated species and habitat, applicants are usually the regulatory actors best placed to engage in information collection about HCP activities.³²⁴ As the entity usually with the most direct involvement in ongoing HCP activities that may affect species and habitat, the applicant is also the most essential party to enlist in adaptive management protocols during HCP implementation.³²⁵ While the No Surprises rule shows that exclusively focusing on developer incentives can undermine efforts to address other statutory goals,³²⁶

³²¹ See *supra* notes 218 – 220 and 233 – 235 and accompanying text.

³²² See Doremus, *supra* note 273, at 71-72 (“Providing appropriate incentives for the generation and disclosure of information ... is critical to the effective protection of endangered species on private land.”).

³²³ See Lobel, *supra* note 3, at 377. Cf. John Kostyack, *supra* note 282, at 764 (“To ensure adequate funding for corrective action, the Administration should ensure that responsibility is properly divided between private and public sources.”).

³²⁴ See YAFFEE ET AL., *supra* note 103, at 5-10 (71% of survey respondents said that the applicant was the primary catalyst of the HCP effort).

³²⁵ See *id.* at 5-3 (“Applicants were moderately or actively involved in 91% of HCPs...before the NEPA comment period, 83% during the comment period, and 85% after HCP approval.”)

³²⁶ Cf. J.B. Ruhl & James Salzman, *The Effects of Wetlands Mitigation Banking on People*, 28 NATIONAL WETLANDS NEWSLETTER 1(2006) (finding wetlands mitigation

Congress must nonetheless examine ways to encourage applicants to assist in making the HCP program evolve.

Even if the Services' aim to induce applicant involvement in the HCP program is understandable, the program must balance the No Surprises incentives with sufficient incentives to developers to reduce uncertainty, increase participation, and perform monitoring and adaptive management. Such incentives could include direct federal grants or tax credits to permittees who engage in adaptive management that provides valuable information for future conservation activities.³²⁷ In conjunction with more rigorous HCP monitoring, penalties could be levied on permittees for non-compliance and serve to fund the incentive program.³²⁸ Alternatively, Congress could develop a credit program that allows a permittee to reduce their costs for mitigation in exchange for generating and disseminating reliable data that benefits regional or national conservation efforts.³²⁹ The HCP program could also offer applicants a streamlined administrative review process and more deferential judicial review if the HCP process adopted in-depth participatory protocols.³³⁰

For larger HCPs, the Services could also alter the current disincentives for permittees to engage in information generation and adaptive management activities by requiring applicants to supply a bond in an amount that compensates for the worst-case risk scenario given the uncertainty that exists at the time the HCP is adopted.³³¹ Only rarely have HCPs required permittees to furnish a performance bond or other funding

banking program emphasis on permittee incentives led to larger scale distributive effects).

³²⁷ See Thomas, *supra* note 33, at 125; Wilhere, *supra* note 32, at 27 (“More and better adaptive management would be encouraged by compensating permittees for the reliable information they produce ... that benefits the conservation of a species.”).

³²⁸ See *Endangered Species Act: Incentives to Encourage Conservation by Private Landowners: Hearing Before the Subcomm. on Environment and Natural Resources of the Comm. on Merchant Marine and Fisheries*, 103rd Cong. 81 (1993) (statement of Larry McKinney, Director of Resource Protection, Texas Parks and Wildlife Department) (describing un-adopted proposal for a “federal tax penalty, or severance tax, ... levied on lands converted to uses not compatible with the support of endangered, threatened and candidate species, or significant biodiversity habitat.... Moneys from the tax penalty would help fund the various incentive programs.”).

³²⁹ See Wilhere, *supra* note 32, at 27 (“Mitigation credits allow a permittee to do less habitat conservation in exchange for reliable information that benefits conservation efforts across a region. ... The credits could be awarded as information is produced or as steps in its production are completed.”).

³³⁰ See Part V.A., *supra*.

³³¹ See Wilhere, *supra* note 32, at 27.

source for unanticipated implementation costs.³³² Key to such an instrument would be the fact that portions of the bond would be reimbursed to the permittee whenever she demonstrated that the worst-case damages were less than had been conservatively anticipated when the HCP was adopted.³³³ Such a bond would thus provide the applicant—the participant with the most direct control over information gathering—a direct financial incentive to collect and supply information and thus reduce uncertainty by engaging in adaptive management protocols.

The incentives provided to permittees certainly do not have to be an all-or-nothing proposition. The Services can also induce participation, adaptation or information gathering by providing incentives on a sliding scale based on the quality of the information generated or conservation value provided in an HCP. For example, the Services can stimulate species recovery efforts by correlating the regulatory assurances granted to applicants with the extent of the biological benefit conferred by the HCP.³³⁴ An HCP could be structured to provide either a more substantial or longer-term guarantee of non-liability to a permittee the more that an HCP induces the recovery of a listed species. Similarly, the more an HCP is based on reliable data and analyses, the more extensive the regulatory assurances that could be provided to an applicant.³³⁵ By calibrating the regulatory assurances provided to applicants to the information and conservation value of the HCP, regulators can more directly foster the adaptation in regulatory processes that thus far has proved elusive in the HCP experiment.

CONCLUSION

Through their interpretation and implementation of the HCP program, the Services' have resolved to neglect adaptively managing the regulatory process. Rather than promoting the diffusion of information, transparency, participation, and adaptation of regulatory decisions, the Services have allowed the HCP program to serve as an avenue for fragmented, long-term, and inert regulatory decisions that rely on inadequate information and little

³³² See DEFENDERS HCP DATABASE, *supra* note 119, at Question 46 (finding in fewer than ten percent of 274 HCPs studied did the permittee post a performance bond or other funding source to pay for unanticipated additional costs).

³³³ See Wilhere, *supra* note 32, at 27 (“Ultimately, the entire bond could be returned with interest when it is demonstrated that an HCP will not result in any unacceptable damages. Such a demonstration would depend on a satisfactory reduction in uncertainty, which might be obtained only through adaptive management.”).

³³⁴ See NATURAL HERITAGE INSTITUTE, *supra* note 94, at 117.

³³⁵ See *id.* Conversely, HCPs should require more extensive mitigation when there are significant information gaps about a species' condition or the proposed take's effect.

stakeholder participation. They have resisted taking on a role of facilitator and eschewed even a minimum framework for regulatory learning.

The HCP program serves as a valuable lesson that sufficient resources, clear legislative directives, and institutional incentives for applicants and agencies alike must be provided for adaptive regulation to have a chance. Undoubtedly, multilateral agreement-based processes that develop up-to-date scientific information and actively utilize adaptive management are expensive and difficult to implement. The success of such processes in furthering environmental conservation and participatory democracy, balanced with sustainable development, largely depends on sufficient resources, a rigorous adherence to a participatory, evolutionary approach to regulation, and providing incentives to institutional actors to assist in the governance process. Yet the rapid proliferation of HCPs and increased reliance on HCP processes in the administration of the ESA—transforming this pilot program into the regulatory norm for ESA permitting—has not been reinforced with sufficient funding and attention to foster meaningful participation, oversight and adaptation in this pioneering regulatory process. By using the HCP program as a way to authorize development with little oversight or adaptation of plans during implementation, the HCP program has facilitated the further degradation of wildlife conservation through a process that plays down opportunities for participation and deliberation. Unsurprisingly, the primary beneficiary of this lack of public participation, enforcement and adaptation are developer-applicants.

As with all regulation, ultimately the environmental, economic and democratic benefits of a fully collaborative and adaptive HCP process may not outweigh the administrative costs, or may do so for only certain types of HCP decisions. Perhaps there are certain participation and adaptive regulation tools that would provide the most cost effective method for fostering quality HCPs in a particular context. However, because Congress and the Services have never attempted to adaptively manage the regulatory process, the HCP program serves as an important illustration of the prevalent failure of administrative processes to unlock the latent but abundant information that would begin to answer the ultimately fundamental questions of regulatory programs: is the program working, and how can it be improved? In order to really examine the success of a regulatory program, the Services—indeed any regulatory agency—must be provided the incentives to engage in systematic experimentation in the design of the regulatory program. By incorporating adaptive management into the regulatory process itself, regulatory agencies like the Services charged with administering complex, unproven laws can finally begin to help make regulation evolve.