

THE KILLING FIELDS: REDUCING THE CASUALTIES IN THE BATTLE BETWEEN U.S. SPECIES PROTECTION LAW AND U.S. PESTICIDE LAW

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For the past 35 years, the conflicting goals, standards, focuses, and methods of United States species protection laws and United States pesticide law have produced a fierce legal battle. The unwitting casualties of this battle are the millions of birds, fish, and other wildlife that have been killed, and the hundreds of protected species put at risk of extinction. This battle has intensified in recent years, as environmental organizations have sued the United States Environmental Protection Agency ("EPA") for its continued failure to comply with the Endangered Species Act ("ESA"). In response, EPA has invoked numerous legal and regulatory strategies, becoming further entrenched in its position of non-compliance. EPA's reluctance to conform to the ESA is due in part to its institutional bias in favor of registering pesticides under the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"), and its generic bureaucratic inertia. A significant cause of the non-compliance, however, is the catch-22 in which EPA finds itself due to inherent conflicts between FIFRA and the ESA.

This Article begins by describing the extent of the harm to wildlife, including threatened and endangered species, caused by current pesticide usage and EPA's failure to comply with wildlife protection laws. After providing an overview of the major federal species protection statutes, this Article chronicles the historic tension between those statutes, discussing the resulting litigation, EPA's regulatory actions and inaction, and the legislative response. The picture that emerges is one of unresolved crisis and massive noncompliance with federal mandates. The Article then turns to examine the sources of tension between the statutes: their conflicting goals, standards, geographic and temporal focuses, and risk reduction methods. Based on this exposition of the fundamental tensions, the Article concludes by suggesting legislative reforms intended to eliminate or at least alleviate the conflict and to reconcile the goals of wildlife protection and availability of socially useful pesticides.

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"There was a strange stillness. The birds, for example – where had they gone?"¹

I. THE PROBLEM

Perhaps the anthem of the 1970s environmental movement, *Big Yellow Taxi* ("Hey farmer, farmer put away that DDT now. Give me spots on my apples, but leave me the birds and the bees. Please!"),² should have made a more ambitious request. Although EPA banned or severely restricted the use of DDT³ and other bio-accumulating pesticides in the 1970s and 1980s, the substitutes employed in their absence have resulted in ecological devastation of their own. Despite the ban of the much-maligned DDT, the fear of a silent spring — a spring without the sounds of birds — remains a reality.

In the decades since the ban of DDT and its relatives, pesticides have caused the deaths of literally millions of birds, fish, and other wildlife, and have placed hundreds of threatened and endangered species at risk of extinc-

¹ RACHEL CARSON, *SILENT SPRING* 2 (1962).

² JONI MITCHELL, *Big Yellow Taxi*, on *LADIES OF THE CANYON*, Reprise Records (1970).

³ "DDT" stands for dichlorodiphenyltrichloroethane, but "DDT" is commonly used to refer to mixtures containing isomers and breakdown products. Its pesticidal attributes were first recognized in 1942, and DDT was used to control insect-borne diseases, such as typhus, during World War II. Later, it was used extensively to control mosquitoes that carry malaria and as a popular agricultural insecticide. Pesticide Action Network UK, 40 *Pesticide News* 18 (1998), available at <http://www.pan-uk.org/pestnews/actives/ddt.htm>.

tion. Unfortunately, the laws governing pesticides conflict in a number of significant ways with the laws designed to protect wildlife, including threatened and endangered species. The laws differ dramatically in their goals, standards, focuses, and methods, creating barriers to compliance with species protection laws that the United States Environmental Protection Agency (“EPA”), the agency charged with implementing the pesticide laws, has been unwilling or unable to overcome. These conflicting laws are particularly problematic when combined with EPA’s institutional bias in favor of approving pesticide use under the Federal Insecticide, Fungicide and Rodenticide Act (“FIFRA”), its generic bureaucratic inertia, and the recent administration’s hostility towards species protection. These factors have pushed EPA into a position of defensive entrenchment and regulatory paralysis, resulting in a failure to comply meaningfully with species protection law. The unwitting casualties are the countless species — including threatened and endangered species — that EPA’s failings have placed in harm’s way.

Although the legal wrangling over the pesticide/species protection conflict has simmered for decades, the battle has intensified in the past several years. Recently, a number of environmental organizations sued EPA for its failure to comply with the Endangered Species Act (“ESA”). In response to these suits, EPA has invoked numerous legal defenses and become even more entrenched in its position of non-compliance. All three branches of the federal government have entered the fray: the judiciary attempting to resolve the conflict between species protection and pesticide laws, the executive agencies trying to regulate their way out of ESA compliance, and Congress attempting to dismiss the problem by exempting pesticide decisions from the ESA. Furthermore, in July 2007, the Supreme Court, in reviewing EPA’s determination of whether to approve a state program under the Clean Water Act, ruled that a federal agency need not undergo the consultation process provided for in section 7 of the ESA unless its action is a discretionary one that allows consideration of factors other than those explicitly mandated.⁴ Although this holding, discussed in greater detail below, is not likely to be interpreted as eliminating the requirement for EPA to comply with section 7 in its FIFRA decision-making, it has added another level of complexity to the ESA/FIFRA relationship.

This Article examines the tension between species protection and pesticide laws, as well as the legal battle that tension has produced. Part II describes the extent of the harm to wildlife, including threatened and endangered species, caused by current pesticide usage. Part III provides an overview of the major federal species protection and pesticide statutes. Part IV chronicles the historical tension between those statutes, discussing the resulting litigation, EPA’s regulatory actions and inaction, and the legislative response. The picture that emerges is one of an unresolved crisis and mas-

⁴ *Nat’l Ass’n of Home Builders v. Defenders of Wildlife*, 127 S. Ct. 2518, 2536-37 (2007).

sive noncompliance with federal mandates. Part V examines the sources of tension between the statutes: their conflicting goals, standards, geographic and temporal focuses, and risk reduction methods. Based on this explanation of the fundamental tension, Part VI suggests legislative reforms intended to eliminate or at least alleviate the conflict and reconcile the goals of wildlife protection and availability of socially useful pesticides.

II. THE CASUALTIES

As with many major environmental reforms, the banning of DDT and other organo-chlorine pesticides occurred in response to public pressure over a particularly visible and acute environmental crisis. In that case, the crisis was eggshell thinning and other effects on avian raptors caused by DDT, which threatened the extinction of a number of species, including the American Bald Eagle, our national bird.⁵ DDT and its chemical relatives undergo a phenomenon known as bioaccumulation, in which the chemical concentration increases dramatically in the higher levels of the food chain, resulting in substantial harms to top-of-the-food-chain predators such as carnivorous birds.⁶ The pesticide ban was crucial to the rebound of raptor populations and was hailed as an environmental success story.⁷ In order to compensate for the ban, farmers and public health control agencies (such as mosquito control boards) began using other pesticides, chiefly organophosphates and carbamates.⁸ Although these types of pesticides do not bioaccumulate or persist in the environment for long periods like DDT, they raise new and equally troubling consequences.⁹

Organophosphate pesticides ("organophosphates") were first developed as biological warfare agents (nerve gas) during World War II. These substances were well-suited as biological warfare agents because they are quick-acting neurological poisons in mammals, including humans. Likewise, they act rapidly to kill insects and other pest species. Accordingly, it soon became apparent that these substances could be used to control a wide range of pests. However, due to their high acute toxicity, organophosphates actually pose a greater immediate threat to humans, fish, and wildlife than

⁵ See David Pimentel et al., *Assessment of Environmental and Economic Impacts of Pesticide Use*, in THE PESTICIDE QUESTIONS: ENVIRONMENT, ECONOMICS AND ETHICS 47, 67 (David Pimentel & Hugh Lehman, eds., 1993); Clive A. Edwards, *The Impact of Pesticides on the Environment*, in THE PESTICIDE QUESTIONS: ENVIRONMENT, ECONOMICS AND ETHICS, *supra*, at 13, 27.

⁶ See Edwards, *supra* note 5, at 14, 27.

⁷ See *id.* at 27; Pimentel, *supra* note 5, at 67.

⁸ See Edwards, *supra* note 5, at 27.

⁹ Extension Toxicology Network, Pesticide Information Profiles, <http://extoxnet.orst.edu/pips/parathio.htm> (last visited Oct. 1, 2007) (on file with the Harvard Environmental Law Review).

do many of the organo-chlorines such as DDT.¹⁰ Many organophosphates kill rapidly upon contact, whether through ingestion, breathing, or mere skin exposure.¹¹

Despite longstanding knowledge of their risks, organophosphates became the pesticides of choice after DDT's cancellation, and have remained the most widely used chemical pesticides in the United States. Given their potentially extreme toxicity, the large quantities released into the environment each year, and the fact that these pesticides are used with the express purpose of killing and/or disrupting living organisms, it is not surprising that threats to wildlife remain.

When DDT was cancelled in 1972, EPA was aware of the trade-off between its bio-accumulating effects and the acute toxicity concerns of the primary chemical pesticide alternative, organophosphates. In EPA's final cancellation order, the EPA Administrator stated:

The risk-benefit equation is a dynamic one. Timing is a variable in that equation. What may, in the long run, be necessary to protect the environment could be a short-term threat to human health. This is exactly the case before me now. The benefits of using organophosphates are a long-range benefit and the risks of DDT result from continued long-term use. In the very short run, however, the equation balances out very differently.¹²

Although the EPA Administrator recognized that the ecological effects of organophosphates were more profound than those of DDT in the short run, he found that such effects could be minimized by prudent use, such as not applying organophosphates in known nesting areas of rare birds.¹³ In the 35 years since the Administrator's statement, such risk minimization measures have yet to be implemented.

Several recent studies suggest that the bans on DDT and other organo-chlorines have not ended the pesticide threat. In 2004, the Center for Biological Diversity ("CBD") issued a report concluding that EPA-approved pesticides currently are putting more than 375 threatened and endangered species at risk.¹⁴ The report summarizes the existing data on pesticide-related harm to aquatic life, birds, and other wildlife, including protected species.¹⁵ It also describes the problems associated with pesticide-contaminated

¹⁰ DDT, <http://www.pan-uk.org/pestnews/actives/ddt.htm> (last visited Dec. 2, 2007) (comparing the acute toxicities of DDT and of the organophosphate Parathion) (on file with the Harvard Environmental Law Review).

¹¹ Extension Toxicology Network, *supra* note 9 (describing long-term effects of parathion on humans and a variety of animals).

¹² In re Stevens Indus., 1 E.A.D. 9 (EPA 1972) (Consolidated DDT hearings).

¹³ *Id.*

¹⁴ BRIAN LITMANS & JEFF MILLER, CENTER FOR BIOLOGICAL DIVERSITY, SILENT SPRING REVISITED: PESTICIDE USE AND ENDANGERED SPECIES (2004), available at <http://www.biologicaldiversity.org/swcbd/Programs/science/pesticides/> [hereinafter "CBD Report"].

¹⁵ *Id.* at 6–9, 16–44.

waterways, soils, and biota, as well as pesticide spray drift.¹⁶ The report also includes a detailed description of the endocrine-disrupting effects associated with many pesticides.¹⁷

The CBD is not alone in its concerns over pesticide impact on wildlife. For example, the American Bird Conservancy estimates that of the 672 million birds that are directly exposed to pesticides each year, more than 67 million will die as a result.¹⁸ Fish, bird and other wildlife poisonings from exposure to pesticides are fairly frequent and widespread.¹⁹ One database tracking pesticide-related bird mortality lists over 400,000 reported deaths caused by 4,000 pesticide poisoning incidents.²⁰ Due to known underreporting of bird deaths, actual mortality from pesticide poisonings probably is substantially greater.²¹ The organophosphate and carbamate pesticides appear to be the greatest cause of these deaths.²²

In addition, the United States Department of Agriculture ("USDA") has warned of an "impending pollinator crisis," due in part to pesticide use.²³ Pollinators at risk include commercial bees and a number of wild pollinators, including wild bees and various bird and bat pollinators.²⁴ A number of other studies reveal substantial risks and a lack of full understanding regarding the extent of pesticide risks to wildlife.²⁵

¹⁶ *Id.* at 1-5.

¹⁷ *Id.* at 10-15.

¹⁸ American Bird Conservancy, Pesticides and Birds Campaign, <http://www.abcbirds.org/pesticides/pesticideindex.htm> (last visited Oct. 1, 2007) (on file with the Harvard Environmental Law Review). This estimate is supported by work conducted by Dr. David Pimentel, who has reported a conservative estimate of 67 million bird deaths per year from agricultural pesticide use. Pimentel, *supra* note 5, at 68.

¹⁹ See American Bird Conservancy, The Avian Incident Monitoring System ("AIMS"), http://www.abcbirds.org/aims/report_list.cfm (last visited Oct. 1, 2007) (on file with the Harvard Environmental Law Review). AIMS is a cooperative program between the American Bird Conservancy and EPA. The AIMS database tracks incidents of pesticide exposure affecting wild birds.

²⁰ *Id.*

²¹ See Pimentel, *supra* note 5, at 66. Bird deaths are underreported for a number of reasons. First, sick or dying birds typically fly away from the area where they were poisoned and often seek shelter in a hidden location. Second, bird carcasses are quickly carried away by predators and scavengers. Finally, humans often fail to report deaths, either because they are not aware that there is reason to do so or to avoid potential legal liability for contributing to the bird death.

²² See Edwards, *supra* note 5, at 27; Pimentel, *supra* note 5, at 66.

²³ CBD Report, *supra* note 14, at 17.

²⁴ See Pimentel, *supra* note 5, at 58-60.

²⁵ See, e.g., Lawrence J. Blus & Charles J. Henny, *Field Studies on Pesticides and Birds: Unexpected and Unique Relations*, 7 *ECOLOGICAL APPLICATIONS* 1125-32 (1997) (finding shortcomings with existing field testing of pesticides on birds and unexpected toxic effects and routes of exposure of certain organophosphate pesticides); Andrew Ogram & Yun Cheng, Final Report: Biological Breakdown of Pesticides in Lake Apopka North Shore Restoration Area Soil in a Mesocosm Experiment, St. Johns River Water Management District Special Publication SJ2007-SP1 (2007) (demonstrating the complexity of pesticide breakdown in soils and under a variety of conditions); see also J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 *ECOLOGY L.Q.* 263, 274-93, 337-38 (2000) (describing the environmental hazards of the farming industry, the consequences of pesticide use, and the lack of strong environmental regulation of agriculture).

In sum, despite the cancellation of DDT and its relatives in the 1970s and 80s, pesticides continue to pose significant risks to birds and other wildlife. The pesticides that replaced the banned organo-chlorines, while not bio-accumulating, are more acutely toxic. Consequently, large numbers of animals, including threatened and endangered species, continue to be adversely affected by the use of EPA-approved pesticides.

III. THE STATUTES

The substantial harm to wildlife from legal pesticide use is attributable, at least in part, to the fact that pesticide regulation and wildlife protection are addressed through very different laws and administered by different agencies. The primary federal pesticide law, FIFRA, is a licensing law with consumer protection origins administered by EPA. The primary wildlife protection statute, the ESA, on the other hand, focuses primarily on prohibiting acts that cause harm to protected species, and is administered through the United States Fish and Wildlife Service (“FWS”) and the National Marine Fisheries Service (“NMFS”; together, “the Services”). To appreciate the tension between these statutes, it is important to understand their basic structures.

A. *The Endangered Species Act*

The federal government currently lists 1,882 species as endangered or threatened.²⁶ The primary vehicle for the protection of these species is the ESA,²⁷ recognized by many sources as “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.”²⁸ The statute’s purpose is to conserve threatened and endangered species and their habitats, for which it employs several regulatory mechanisms.²⁹

“Endangered species” are those in danger of extinction throughout all or a significant portion of their range.³⁰ “Threatened species” are those likely to become endangered “within the foreseeable future.”³¹ Although

²⁶ U.S. Fish and Wildlife Service, Threatened and Endangered Species System Summary of Listed Species, http://ecos.fws.gov/tess_public/Boxscore.do (last visited Oct. 1, 2007) (on file with the Harvard Environmental Law Review).

²⁷ 16 U.S.C. §§ 1531-44 (2000).

²⁸ *Babbitt v. Sweet Home Chapter of Cmty. for a Greater Or.*, 515 U.S. 687, 698 (1995) (quoting *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978)). In recent years, there has been considerable debate over whether the ESA is too restrictive, and whether it interferes unreasonably with private property rights. See Marcilynn A. Burke, *Klamath Farmers and Cappuccino Cowboys: The Rhetoric of the Endangered Species Act and Why It (Still) Matters*, 14 DUKE ENVTL. L. & POL’Y F. 441, 455 (2004) (arguing that the push for ESA reform has been sold primarily on the basis of individual stories of nightmarish regulatory burdens on small landowners).

²⁹ 16 U.S.C. § 1531(b).

³⁰ *Id.* § 1532(6).

³¹ *Id.* § 1532(20).

the statute distinguishes between these categories, species designated as either are, for the most part, subject to the same protections. In addition to listing species as threatened or endangered, the Services also designate critical habitat for each listed species.³²

Once a species is designated as either threatened or endangered, several protections apply. First, section 9 of the ESA prohibits the "taking" of listed species. The statute defines the term "take" broadly to include to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct."³³ The Supreme Court has upheld the Services' interpretation of the term "harm" to include acts that involve "significant habitat modification or degradation where [the act] kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering."³⁴ Penalties for violations of the section 9 take prohibition vary depending on whether the violation involves a threatened or an endangered species and whether the perpetrator violated the prohibition knowingly.³⁵ In addition, courts may award injunctive relief to prevent the taking from continuing.

Because the prohibition on takings applies to "any person," a federal agency that directly kills or injures a listed species, for example by destroying an active nest during a federal construction project, would incur section 9 liability. The more complicated issue is the extent to which agencies are liable for takings that occur as a result not of the agency's own action, but through a party acting *with authorization* from the agency. Although in this situation liability will depend on the precise circumstances of the authorization, courts have generally found federal regulatory agencies liable for authorizing activities that resulted in takes. For example, a Massachusetts state agency that issued licenses to use specific fishing gear was liable for taking endangered right whales when the gear entangled the whales.³⁶ In another case, described in greater detail below, EPA was liable for allowing a pesticide to be marketed that was eventually ingested by endangered black-footed ferrets.³⁷

The second major regulatory vehicle under the ESA is found in section 7.³⁸ The statute provides that federal agencies are required to use their existing authorities to conserve endangered and threatened species.³⁹ Additionally, section 7 mandates that federal agencies consult with the Services to "insure that any action authorized, funded, or carried out by such agency is

³² *Id.* § 1532(5) (defining critical habitat as the areas essential to the conservation of a species that may require special management considerations).

³³ *Id.* § 1532(19).

³⁴ *Babbitt v. Sweet Home Chapter of Cmty. for a Greater Or.*, 515 U.S. 687, 691 (1995).

³⁵ Violations can result in both civil and criminal liability, including penalties of up to \$50,000 and imprisonment for up to one year for knowing takes of endangered species. 16 U.S.C. § 1540(b).

³⁶ *Strahan v. Coxe*, 127 F.3d 155 (1st Cir. 1997).

³⁷ *Defenders of Wildlife v. Administrator, EPA*, 882 F.2d 1294 (8th Cir. 1989).

³⁸ 16 U.S.C. § 1536.

³⁹ *Id.* § 1536(a)(1).

not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical habitat] of such species.”⁴⁰ Federal agency action will “jeopardize the continued existence” of a listed species where the action “reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.”⁴¹ The section 7 consultation process applies to any federal agency action that “may affect” listed species. The term “may affect” includes beneficial, as well as adverse impacts. In the regulatory process established under section 7, the determination of whether the Agency must engage in formal consultation with the Services is based on whether action is “likely to adversely affect” listed species.⁴² If the Agency determines, with the written concurrence of the Services, that the proposed action is “not likely to adversely affect” listed species, the consultation process is terminated.⁴³ If the Agency determines that the action is “likely to adversely affect” listed species, the Agency must engage in the formal consultation process.⁴⁴

The formal consultation process typically involves considerable interaction between the action agency and the Service, including evaluation of existing data and discussion of possible ways to reduce the likelihood of harm to the protected species. The product of this consultation process is a Biological Opinion (“BiOp”), which states whether the proposed action is likely to jeopardize listed species. If the Service concludes that the proposed agency action is likely to jeopardize the continued existence of listed species, the Services include in the BiOp “reasonable and prudent alternatives” that if implemented will avoid jeopardy.⁴⁵ The Service may also include in the BiOp an Incidental Take Statement (“ITS”), which identifies actions that will not be considered prohibited takings and provides legal cover for harm that does occur to species if addressed in the ITS.⁴⁶ After the BiOp has been issued, the agency decides whether to proceed. However, if the Agency’s action results in a take, the Agency will be liable under section 9, unless such a take is provided for in the ITS.

B. *The Migratory Bird Treaty Act*

In addition to the ESA, legislative authority for protecting wildlife is found in the Migratory Bird Treaty Act (“MBTA”), which implements four

⁴⁰ *Id.* § 1536(a)(2).

⁴¹ 50 C.F.R. § 402.02 (2006).

⁴² *Id.* § 402.13.

⁴³ *Id.* However, the FWS or NMFS will generally not provide an incidental take permit in conjunction with a written concurrence, and the acting agency may still be liable for any takes.

⁴⁴ *Id.* § 402.13-14.

⁴⁵ 16 U.S.C. § 1536(b)(4).

⁴⁶ *Id.*

international treaties aimed at protecting migratory birds.⁴⁷ The scope of the MBTA is quite broad and has been said to cover “almost all native North American birds.”⁴⁸ Some, but not all, migratory birds covered by the MBTA are also listed under the ESA.

As with the ESA, the MBTA prohibits takes, though the statute does not define the term. However, regulations define it to mean to “pursue, hunt, shoot, wound, kill, trap, capture, or collect” any of the listed species, or to attempt to do so.⁴⁹ The judicial scope of this definition is not clear. One court found the language broad enough to include accidental poisoning by discharging pesticide waste into a storage pond,⁵⁰ while in a more recent decision another court determined that habitat modifications such as logging activities are not included.⁵¹

Although the ESA and MBTA both apply to listed migratory bird species and are similar in some respects, there are significant differences that make each statute preferable in certain circumstances. The statutes are similar with regard to their prohibitions on takes. The MBTA’s definition of “take” appears to be narrower than the ESA’s, which includes significant habitat modification or degradation that kills or injures wildlife.⁵² However, since the MBTA protects species before they near extinction, it can be utilized more efficiently and quickly than the ESA (which requires a drawn-out listing process for species already nearing extinction).⁵³

C. *The Federal Insecticide, Fungicide and Rodenticide Act*

EPA is the agency primarily responsible for domestic pesticide regulation, drawing its authority largely from FIFRA.⁵⁴ Under FIFRA, all pesti-

⁴⁷ *Id.* § 703. The Marine Mammal Protection Act provides the primary authority for protection of those species. *Id.* §§ 1361-1421h.

⁴⁸ Larry Martin Corcoran and Elinor Colbourn, *Shocked, Crushed and Poisoned: Criminal Enforcement in Non-Hunting Cases Under the Migratory Bird Treaties*, 77 DENV. U. L. REV. 359, 378 (1999) (internal quotation marks omitted). However, non-native species are not covered. *Id.* at 381-85.

⁴⁹ 50 C.F.R. § 10.12.

⁵⁰ *United States v. FMC Corp.*, 572 F.2d 902 (2d Cir. 1978).

⁵¹ *Seattle Audubon Soc’y v. Evans*, 952 F.2d 297 (9th Cir. 1991).

⁵² *See, e.g.,* Conrad A. Fjetland, *Possibilities for Expansion of the Migratory Bird Treaty Act for the Protection of Migratory Birds*, 40 NAT. RESOURCES J. 47, 50-54 (2000) (arguing that judicial interpretation has narrowed the scope of the act, creating a need for legislative and regulatory expansion to counteract the threat posed by pesticides); *see also* Corcoran and Colbourn, *supra* note 48 (providing a more detailed discussion of the MBTA, including its history dating back to 1913). Corcoran and Colbourn analyze one case in which a court specifically distinguished the anti-take provisions of the ESA from the MBTA, finding that the MBTA’s exclusion of the terms “harass” and “harm” from its “take” definition limited the scope of the MBTA in comparison to the ESA. *Id.* at 390.

⁵³ *See* Erin C. Perkins, Comment, *Migratory Birds and Multiple-Use Management: Using the Migratory Bird Treaty Act to Rejuvenate America’s National Environmental Policy*, 92 Nw. U. L. REV. 817, 841 (1998).

⁵⁴ 7 U.S.C. §§ 136-136(y) (2000).

cides⁵⁵ sold or distributed in the United States must be registered by EPA.⁵⁶ A pesticide will be registered only if it will not cause any “unreasonable adverse effects on the environment,”⁵⁷ defined as any “unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide.”⁵⁸ Although not expressly mandated by the statute, EPA has interpreted and applied this standard consistently as a cost-benefit balancing test under which it weighs the risks associated with the use of a pesticide against the economic and social benefits.⁵⁹

Although the registration standard requires EPA to determine that the pesticide “will perform its intended function” without unreasonable adverse effects on the environment, FIFRA expressly states that EPA shall not make any lack of essentiality a criterion for denying registration of any pesticide, and that where two pesticides meet the requirements for registration, one should not be registered in preference to the other. Accordingly, the availability of alternatives will not preclude registration.⁶⁰ Moreover, FIFRA expressly authorizes EPA to waive all data requirements pertaining to efficacy and EPA has, by rule, done so.⁶¹ Thus, in making registration decisions, EPA does not require any showing of the economic or social benefits to be derived from the pesticide, but instead assumes that such benefits will accrue.

Although EPA does not require submission of efficacy data to support a registration, it does require an applicant to submit risk-related data.⁶² Under FIFRA, EPA may register products in certain situations even though all necessary data have not yet been generated. Such a premature registration is referred to as “conditional registration.”⁶³ Conditional registration can be used for (1) products with composition and proposed uses identical or substantially similar to currently registered pesticides; (2) products with pro-

⁵⁵ FIFRA provides that the term “pesticide” means “any substance . . . intended for preventing, destroying, repelling, or mitigating any pest. . . .” *Id.* § 136(u).

⁵⁶ *Id.* § 136a(a).

⁵⁷ *Id.* § 136a(c)(5).

⁵⁸ *Id.* § 136(bb).

⁵⁹ A number of scholars have stated that, although Congress directed EPA to take economic factors into account, it did not require that EPA conduct a strict cost-benefit analysis. See SIDNEY A. SHAPIRO & ROBERT L. GLICKSMAN, *RISK REGULATION AT RISK: RESTORING A PRAGMATIC APPROACH* 29, 32 (2003); Mary Jane Angelo, *Embracing Uncertainty, Complexity, and Change: An Eco-Pragmatic Reinvention of a First-Generation Environmental Law*, 33 *ECOLOGICAL L.Q.* 105, 176-77, 182; WILLIAM H. RODGERS, JR., *ENVIRONMENTAL LAW* 451-53 (2d ed. 1994) (noting that in light of FIFRA’s legislative history, adverse effects were not meant to be tolerated unless the pesticide provides some overriding benefit). Despite the apparent intentions of Congress, EPA has interpreted FIFRA to require cost-benefit balancing, and courts have upheld this interpretation. See *Env’tl. Def. Fund v. EPA*, 548 F.2d 998, 1004 (D.C. Cir. 1976); *Chapman Chemical Co.*, 1 E.A.D. 199 (EPA 1976); *Proxtell Prods.*, 2 E.A.D. 854 (EPA 1989).

⁶⁰ 7 U.S.C. § 136a(c)(5).

⁶¹ 40 C.F.R. § 158.640(b)(1) (2006).

⁶² 7 U.S.C. §§ 136a(a), 136a(c)(2)(A). Data requirements are found at 40 C.F.R. § 158, and provide for the submission of health and environmental effects data.

⁶³ 7 U.S.C. § 136a(c)(7).

posed new uses; or (3) certain products with a new active ingredient.⁶⁴ For the first two cases, EPA must determine that despite the lacking data, approval of the conditional registration would not significantly increase the risk of any unreasonable adverse effects on the environment.⁶⁵ To issue a conditional registration for new active ingredients, EPA must determine that the use of the pesticide during the period of conditional registration will not cause unreasonable adverse effects on the environment and that use of the pesticide is in the public interest.⁶⁶

The vast majority of EPA's data requirements under FIFRA relate to human health effects,⁶⁷ while those for wildlife and ecological effects are quite limited.⁶⁸ EPA does require the submission of data designed to assess the presence of widely distributed and persistent pesticides in the environment.⁶⁹ However, EPA has very few data requirements related to actual wildlife or ecosystems hazards. The wildlife data requirements, moreover, only address acute toxicity in a few species and do not address chronic toxicity or behavioral, neurological or reproductive effects. The wildlife and aquatic organism data requirements include avian toxicity studies⁷⁰ and freshwater fish and invertebrate acute toxicity studies⁷¹ for most pesticides. Additional data are required only on a case-by-case basis depending on the result of lower tier studies. Such conditional studies include mammalian toxicity, avian reproduction, simulated and actual field testing of mammals and birds, acute toxicity to estuarine and marine organisms, fish early life stage, aquatic invertebrate life cycle, fish life cycle and aquatic organisms

⁶⁴ *Id.*

⁶⁵ *Id.* §§ 136a(c)(7)(A)-(B).

⁶⁶ *Id.* § 136a(c)(7)(C). Conditional registrations last a limited period of time as determined by EPA. 40 C.F.R. § 152.115(a), (b)(2).

⁶⁷ These requirements include testing on residue chemistry to estimate human exposure to pesticides, acute human hazard, subchronic human hazard, chronic human hazard, mutagenicity, metabolism studies, reentry hazard, and spray drift evaluation, as well as oncogenicity, teratogenicity, neurotoxicity, and reproductive effects in humans. *See* 40 C.F.R. §§ 158.202(a), 158.202(c), 158.202(e)-(g), 158.240, 158.390, 158.440 and 158.340. *See also id.* § 158.34 (providing that certain human health effects data submitted to EPA must be flagged as indicating potential adverse effects).

⁶⁸ *See* Leslie W. Touart & Anthony F. Maciorowski, *Information Needs for Pesticide Registration in the United States*, 7 *ECOLOGICAL APPLICATIONS* 1086-93 (1997) (describing and evaluating EPA's ecological risk data requirements for pesticide registration).

⁶⁹ 40 C.F.R. § 158.202(d)(1). These requirements include studies to determine the rate of pesticide degradation; metabolism studies to determine the nature and availability of pesticides to rotational crops and to aid in the evaluation of the persistence of a pesticide; mobility studies pertaining to leaching, adsorption/desorption, and volatility of pesticides; dissipation studies; and accumulation studies.

⁷⁰ Avian oral LD50 and dietary LC50s (the concentration at which 50 percent of the test animals die) are required when using the preferred test animal species, the mallard and the bobwhite. *Id.* § 158.490.

⁷¹ Freshwater fish LC50 studies are required, with the preferred test species being the rainbow and bluegill fish, and acute LC50 studies are required on freshwater invertebrates, with the preferred test species being *Daphnia*. *Id.*

accumulation, and simulated or actual field testing of aquatic organisms for most outdoor uses.⁷²

With regard to wildlife, EPA's main concern is with acute toxicity testing, and it typically does not require data submission on the potential adverse effects of pesticides on wildlife behavior, neurology, reproduction, birth defects, or other non-acute effects. EPA's requirements contain no studies evaluating effects on amphibians, reptiles, or other species not identified specifically in the rules. Although EPA requires acute toxicity testing for honeybees and other pollinators if the proposed use will result in exposure for those species, EPA does not have any data requirements related to pollinator subacute feeding studies, non-target aquatic insects, or non-target predatory or parasitic insects.⁷³

Once EPA evaluates the data, it determines whether restrictions are necessary to minimize risks sufficiently serious as to outweigh the pesticide's benefits. However, EPA's ability to regulate pesticide use under FIFRA is very limited. Unlike other environmental statutes, FIFRA does not establish a permitting system for pesticide use. In fact, no EPA approval is required prior to using a pesticide, whether by permit or any other mechanism, even for very large scale usage. Consequently, geographical and temporal factors are not evaluated under FIFRA prior to release of pesticides into the environment. FIFRA's regulation of pesticide "use" is achieved through labeling restrictions. It is the registration applicant's responsibility to propose all labeling with the registration application.⁷⁴ All registered pesticide products must bear a label or labeling containing precautionary statements, warnings, directions for use, and an ingredient statement.⁷⁵ All labels must state that it is illegal to use the pesticide in a manner inconsistent with its labeling, the sole obligation placed on pesticide users by FIFRA.⁷⁶ Unfortunately, users may not understand or be willing to follow the complex instructions. Moreover, it is virtually impossible for EPA to identify and monitor compliance by all users of the country's thousands of registered pesticides.

Beyond the basic labeling requirements, FIFRA authorizes EPA to classify certain higher risk pesticides for restricted use if they would cause un-

⁷² *Id.* § 158.490.

⁷³ In its data requirements rule, EPA identifies these types of requirements with regard to pollinator subacute feeding studies as "reserved pending development of test methodology," and with regard to non-target aquatic insects or non-target predatory or parasitic insects as "reserved pending further evaluation to determine what and when data should be required, and to develop appropriate test methods." *Id.* § 158.590.

⁷⁴ 7 U.S.C. § 136a(c)(1)(C) (2000). Although EPA must approve labeling language, the applicant — who presumably will prefer the least restrictive terms — proposes the language.

⁷⁵ FIFRA defines the term "label" as the written, printed, or graphic material attached to a pesticide, while "labeling" is defined more broadly to include all other material accompanying the pesticide or to which reference is made on the label. *Id.* §§ 136(p)(1)-(2). A product whose labeling does not contain the information required by EPA or which sets forth false or misleading information is misbranded. *See id.* §§ 136(q) (defining the term "misbranded"), 136j(a)(1)(E) (providing it shall be unlawful for any person to sell or distribute an adulterated or misbranded pesticide).

⁷⁶ *Id.* § 136j(a)(2)(G).

reasonable adverse effects on the environment in the absence of such restrictions.⁷⁷ A restricted use pesticide may be used only by or under the supervision of a certified applicator, and may not be purchased by the general public.⁷⁸ Certification of applicators is primarily conducted by the states, whose certification plans must conform to certain standards enumerated in FIFRA.⁷⁹ However, a restricted use designation is designed primarily to protect the users themselves, and generally is not intended to address ecological or wildlife risk reduction. Although EPA regulations require certified applicators to possess general knowledge of potential environmental consequences of pesticide use and misuse, they do not require knowledge of specific risk reduction techniques. On the other hand, the certification requirements related to human health include, among other things, detailed requirements for specific knowledge of precautions necessary to guard against injury to applicators and other individuals in or near treated areas, the need for and use of protective clothing and equipment, and the symptoms of pesticide poisoning.⁸⁰ Moreover, FIFRA provides explicitly that EPA may not demand that state certification plans require individuals to receive instruction on integrated pest management, a pest management approach designed to reduce environmental impacts.⁸¹ In fact, certified applicators are not even required to receive specialized training in local ecosystems and their vulnerability to specific pesticides.⁸²

The 1972 revisions to FIFRA mandated that EPA go back and reexamine previously registered pesticides.⁸³ Congress mandated this “re-registration” to ensure that previously registered pesticides met current standards and that the data EPA had for these older pesticides was the same as that for newer pesticides. EPA’s re-registration efforts moved extremely slowly, and as a result, in 1988 Congress imposed on EPA specific re-registration requirements intended to improve both the pace and the nature of re-registration.⁸⁴ These provisions establish a multi-phased process ensuring that registrants submit required data for EPA review under current standards. Failure to meet the prescribed deadlines may result in suspension or cancellation of registration.⁸⁵

⁷⁷ *Id.* § 136a(d)(1).

⁷⁸ *Id.*

⁷⁹ *Id.* § 136i. This section, regarding the use of restricted use pesticides, allows states to develop certified applicator plans and submit them for EPA approval. EPA must approve these plans so long as they designate a responsible state agency to administer; contain satisfactory assurance that the agency has legal authority and sufficient personnel to do so; give assurances that the state will devote adequate funds to the plan; provide for reports to EPA; and provide assurances that the plan conforms to specified standards regarding certified applicators.

⁸⁰ 40 C.F.R. § 171.4(b)(ii) (2005).

⁸¹ 7 U.S.C. § 136i(c).

⁸² See RODGERS, *supra* note 59, at 462–63 (describing certified applicator training programs).

⁸³ 7 U.S.C. § 136a-1.

⁸⁴ *Id.*

⁸⁵ *Id.*

Once a pesticide is registered, EPA maintains the authority either to cancel or suspend the existing registration based upon certain risk-benefit determinations. The same standard applies for both initial registration and cancellation,⁸⁶ so cancellation is warranted only where new information or changing circumstances demonstrate that a previously registered pesticide's risks outweigh its benefits. Section 6(b) of FIFRA provides that EPA may issue a notice of intent to cancel if a pesticide or its labeling does not comply with FIFRA, or if the pesticide generally causes unreasonable adverse effects.⁸⁷ There are two types of cancellation actions under section 6(b). Section 6(b)(1) authorizes EPA to issue a notice of intent to cancel or change classification, and section 6(b)(2) authorizes EPA to issue a notice of intent to hold a hearing to determine whether or not registration should be cancelled or classification changed.⁸⁸ Section 6(b)(2) is used when EPA's judgment concerning the risks and benefits of a pesticide is only tentative.⁸⁹ Regardless of the type of cancellation action, the standard for cancellation requires risk-benefit balancing. Before taking final steps, EPA must consider whether any unreasonable risks posed by a pesticide's use can be reduced sufficiently by other regulatory measures, such as additional labeling or a restricted use classification. If sufficient risk reduction cannot be achieved by such measures, the registration of the pesticide for that use must be cancelled.⁹⁰

In addition to cancellation, FIFRA authorizes EPA to suspend the registration of a pesticide based on certain findings.⁹¹ There are two types of suspension proceedings. Ordinary suspension is used when necessary to prevent an imminent hazard during the time required for cancellation proceedings.⁹² A suspension action merely addresses the risks and benefits for the period involved, but it is not an ultimate resolution of the cancellation issues.⁹³ An emergency suspension order is effective immediately, and is used when an emergency does not permit even an expedited hearing before suspension takes place.⁹⁴ The emergency order remains in effect until the issuance of a final suspension order following the hearing.⁹⁵ Third parties do

⁸⁶ Both 7 U.S.C. § 136a(c)(5) (standard for registration) and § 136d(b) (standard for cancellation) use the "unreasonable adverse effects on the environment" standard.

⁸⁷ *Id.* § 136d(b).

⁸⁸ *Id.*

⁸⁹ There is no distinction between § 136d(b)(1) and § 136d(b)(2) hearings in the manner of conduct, burden of proof, or the nature of the initial decision by an administrative law judge.

⁹⁰ EPA's refusal to initiate cancellation or suspension proceedings is a judicially reviewable final order. *See Env'tl. Def. Fund v. EPA*, 465 F.2d 528 (D.C. Cir. 1972). However, courts have only reviewed about a third of the more than 60 pesticide cancellations and suspensions that occurred prior to 1994. RODGERS, *supra* note 59, at 480.

⁹¹ 7 U.S.C. § 136d(c).

⁹² *Id.* § 136d(c)(1).

⁹³ *Id.*

⁹⁴ *Id.* § 136d(c)(3).

⁹⁵ *Id.*

not have a right to request or intervene in an expedited hearing.⁹⁶ An emergency suspension order is subject to immediate review by a District Court.⁹⁷

In sum, the ESA and the MBTA establish absolutist prohibitions on taking protected species. Moreover, the ESA mandates that federal agencies undergo consultation to ensure that their actions do not cause jeopardy to listed species. FIFRA, on the other hand, establishes a pesticide registration process that is governed by a cost-benefit standard and that is generally more concerned with human health than wildlife. Accordingly, the statutes, as discussed in more detail below, conflict in significant ways, making compliance with both wildlife protection statutes and FIFRA unwieldy and impractical at best.

IV. THE ONGOING TENSION

During the past several years, a number of reports and lawsuits have highlighted the ongoing problem of pesticide use's impacts on wildlife, including threatened and endangered species. The CBD's 2004 report criticized EPA for "display[ing] a stunning lack of initiative in complying with the [ESA]," and for having demonstrated a "reckless disregard for the impact of its Pesticide Regulation Program on wildlife, and, most importantly, on endangered species."⁹⁸ The CBD maintained that because EPA registers pesticides for use, the public assumes they are safe.⁹⁹ Due to FIFRA's structure and EPA's implementation methods, however, registration says little, if anything, about a pesticide's safety.¹⁰⁰ The CBD report describes EPA's regulatory oversight of the pesticide industry as "abysmal" and opines that EPA consistently has ignored sound science, as well as requests by the Services to modify registrations to reduce wildlife impacts.¹⁰¹ The CBD report also describes EPA's institutional bias towards rushing pesticide registration before the risks are understood fully, in order to get the pesticide on the market faster.

This section describes the history of the tension between FIFRA and the species protections laws. It starts by chronicling the history of litigation over EPA's ongoing failure to comply with the species protection laws in its FIFRA decision-making. Next, this section describes the regulatory actions that EPA has taken, at times in an attempt to comply with the wildlife statutes, and at times to avoid compliance. It concludes by discussing a recent legislative attempt to, in essence, exempt FIFRA decision-making from ESA requirements.

⁹⁶ *Id.*

⁹⁷ *Id.* § 136d(c)(4).

⁹⁸ CBD Report, *supra* note 14, at 51.

⁹⁹ *Id.* at i.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

A. *The Litigation*

EPA's failure to comply with wildlife protection statutes has led to a spate of recent litigation. However, suits spawned by the tension between pesticide regulation and species protection laws date back nearly thirty years. Starting in the late 1970s, the federal government brought a number of lawsuits involving pesticides' impact on protected species. The earliest cases involved liability under the MBTA. In *United States v. FMC Corp.*, the Second Circuit ruled that a violation of the MBTA could be predicated on an intentional action, even without specific intent to kill protected birds.¹⁰² The Eastern District of California held similarly in a related case, *United States v. Corbin*.¹⁰³

While both *FMC* and *Corbin* imposed liability, respectively, on a manufacturer and user of pesticides for harm caused to protected species, neither addressed whether EPA could be liable based on its own conduct in approving the registration of a pesticide that later harmed a protected species. It was not until 1989 that a court addressed this issue in the landmark case *Defenders of Wildlife v. EPA*.¹⁰⁴

In that case, the Eighth Circuit held EPA liable for a taking under section 9 of the ESA for allowing the continued FIFRA registration of strychnine. EPA had reviewed the above-ground use of strychnine in the 1970s and consulted with the FWS about the pesticide's impact on listed species.¹⁰⁵ The consultation resulted in a 1979 BiOp finding that the continued use of strychnine would jeopardize listed species.¹⁰⁶ EPA initiated a cancellation process for several registered uses of strychnine after environmental groups intervened in the process, and discussions continued from 1984 until 1986.¹⁰⁷ Most of the intervenors settled with EPA, but the Defenders of Wildlife and Sierra Club refused, and along with the Friends of Animals, filed suit under the ESA's citizen suit provision.¹⁰⁸

EPA argued that because the plaintiffs sought the cancellation of a pesticide, the plaintiffs' suit had to be brought under FIFRA.¹⁰⁹ While the Eighth Circuit acknowledged that an action solely for pesticide cancellation should be sought under FIFRA, the court held that FIFRA did not permit EPA to ignore the ESA when regulating pesticides.¹¹⁰ EPA did not dispute

¹⁰² *United States v. FMC Corp.*, 572 F.2d 902, 904 (2d Cir. 1978) (pesticide manufacturer found in violation of MBTA for releasing pesticide into storage pond where birds were exposed and killed).

¹⁰³ 444 F. Supp. 510 (E.D. Cal. 1978) (pesticide user found in violation of MBTA despite lack of intent to kill migratory birds).

¹⁰⁴ 882 F.2d 1294 (8th Cir. 1989).

¹⁰⁵ *Id.* at 1296-97.

¹⁰⁶ *Id.* at 1297.

¹⁰⁷ *Id.* Defenders of Wildlife, the Sierra Club, the Farm Bureau, FWS, and USDA were among the intervenors.

¹⁰⁸ *Id.* at 1298. The ESA contains a citizen suit provision, which authorizes citizens to bring civil suits to enforce provisions of the Act. 16 U.S.C. § 1540(g) (2000).

¹⁰⁹ *Defenders of Wildlife*, 882 F.2d at 1298.

¹¹⁰ *Id.* at 1299.

that the distribution of strychnine had caused the death of endangered species.¹¹¹ Noting that the definition of a taking was quite broad and that distribution of strychnine could only occur upon registration of the pesticide, the court held that EPA action had caused the deaths of endangered species and as a result, an illegal taking had occurred.¹¹²

Although, as described in detail below, EPA had made some attempts during the 1980s to comply with the ESA in its FIFRA decision-making, those attempts were very limited. Unfortunately, the holding in *Defenders of Wildlife* did little to prod EPA into compliance. During the 1990s, it appeared that the *Defenders of Wildlife* holding had paralyzed EPA into inaction. Nevertheless, it was not until the early 2000s that a number of environmental organizations began to bring or threaten suit against EPA.¹¹³ Although most of these cases settled, the cases in which the courts rendered decisions demonstrate their frustration with EPA's noncompliance.

The current wave of litigation over the impact of pesticide use on protected species began in 2002, when 40 environmental organizations sent EPA a Notice of Intent to Sue for ESA and MBTA violations connected with EPA's registration of the pesticide fenthion.¹¹⁴ FWS recommended that EPA cancel existing registrations for fenthion immediately due to unreasonable adverse effects posed to protected bird species.¹¹⁵ When EPA failed to take action to reduce the risks, *Defenders of Wildlife*, the American Bird Conservancy, and the Florida Wildlife Federation filed suit in federal district court.¹¹⁶ The case was rendered moot in 2003 when the manufacturer of fenthion voluntarily canceled its registration.¹¹⁷ Despite the lack of a judicial decision, the fact that environmental groups were able to obtain a cancellation appeared to spur other organizations to bring similar suits.

¹¹¹ *Id.* at 1301.

¹¹² *Id.* EPA is not the only federal agency that has been reluctant to comply fully with section 7. There has been an ongoing battle between environmental organizations and the Federal Emergency Management Agency ("FEMA") regarding FEMA's ESA obligations in administering the National Flood Insurance Program ("NFIP"). See *Florida Key Deer v. Brown*, 364 F. Supp. 2d 1345 (S.D. Fla. 2005) (ruling that NFIP jeopardized several endangered species), and 386 F. Supp. 2d 1281 (S.D. Fla. 2005) (granting the plaintiffs' request for injunctive relief against insurance policies for new developments in listed species' habitat).

¹¹³ Several recent suits targeted other federal agencies as well. See, e.g., *Oregon Nat. Res. Council v. Keys II*, No. 02-3080-CO, 2004 WL 1048168, at *1 (D. Or. May 7, 2004) (alleging section 7 violations against the Bureau of Reclamation); *San Juan Audubon Soc. v. Veneman*, 153 F. Supp. 2d 1 (D.D.C. 2001) (alleging misuse of sodium cyanide ejectors approved by EPA and used by the Department of Agriculture).

¹¹⁴ American Bird Conservancy, Environmental Groups Serve EPA with Notice to Sue Over Bird Deaths (Jan. 29, 2002), available at <http://www.abcbirds.org/newsandreports/releases/020129.html>.

¹¹⁵ American Bird Conservancy, Groups Sue EPA to Protect Florida Wildlife from Bird-Killing Pesticide (Oct. 28, 2002), available at <http://www.abcbirds.org/newsandreports/releases/021028.html>.

¹¹⁶ *Id.*

¹¹⁷ See Fenthion: Product Registrations Cancellation Order, 68 Fed. Reg. 55,609-11 (Sept. 26, 2003). EPA approved the manufacturer's request to cancel fenthion in May 2003. See Fenthion: Receipt of Request to Cancel Registrations, 68 Fed. Reg. 32,495-97 (May 30, 2003).

In September 2004, environmentalists won a significant victory in *Washington Toxics Coalition v. EPA*,¹¹⁸ in which the Ninth Circuit upheld a ruling finding a section 7 violation in EPA's failure to ensure that the registration of 54 pesticides would not jeopardize several listed salmon species. The holding imposed detailed buffer zones restricting the use of more than 30 pesticides along listed salmon-supporting waters in California, Oregon, and Washington.¹¹⁹ Interestingly, the court imposed the kind of geographic limitation that, as discussed below, EPA has continually resisted despite persistent recommendations from the Services.

On appeal, EPA challenged the district court's decision to create mandatory buffer zones for application of the specified pesticides and to require written notifications accompanying pesticides sold in urban areas.¹²⁰ It argued that any action resulting in the cancellation or modification of a pesticide's use must conform to FIFRA.¹²¹ EPA primarily argued that it was bound only to apply the provisions of FIFRA, which had its own statutory language relating to endangered species.¹²² As such, EPA argued that it did not have independent duty under Section 7(a)(2) to consult with the FWS or the NMFS.¹²³ Furthermore, EPA claimed that FIFRA's generic standard for registration and cancellation, when read in conjunction with the ESA, already took into account any concerns that registration might affect listed species.¹²⁴ EPA also sought a determination that the plaintiffs had not fully exhausted their administrative remedies,¹²⁵ and that the district court should have deferred to EPA as the agency with the necessary experience to fashion appropriate orders on complex pesticide regulations.¹²⁶

¹¹⁸ 413 F.3d 1024 (9th Cir. 2005), *cert. denied*, 546 U.S. 1090 (2006).

¹¹⁹ See *Wash. Toxics Coal. v. EPA*, No. C01-0132C, 2004 U.S. Dist. LEXIS 29886 (W.D. Wash. Jan. 22, 2004) (order granting injunction). Patti Goldman, the attorney representing the environmental organizations in the case, recommended to the judge buffers drawn from the 1989 BiOp. Earthjustice had surveyed all of the buffers for aquatic species from the old Bi-Ops, and chose the buffers at the low end of the range. Earthjustice also surveyed county bulletins for aquatic species in California, buffers in BiOps for forestry activities, and other scientific evidence. The buffers are intended to be interim until consultation is complete. Patti A. Goldman, *Protecting Endangered Species From Pesticides: Making the ESA Work or Finding Loopholes*, SJ023 ALI-ABA *31, *34-*36 (ALI-ABA Conference, Sept. 18-19, 2003). The Services had already evaluated the pesticides at issue and determined that use of these buffers would avoid jeopardy. Brief for EPA at *12-*13, *Wash. Toxics Coal. v. EPA*, 413 F.3d 1024 (9th Cir. 2005) (Nos. 04-35138, 04-35212, 04-35244), 2004 WL 1763203.

¹²⁰ Brief for EPA at *12-*13, *Washington Toxics*.

¹²¹ *Id.* at *14.

¹²² *Washington Toxics*, 413 F.3d at 1031. Under 7 U.S.C. § 136d(c)(1)-(2) (2000), EPA may suspend registration of a pesticide for an immediate hazard, which per § 136(1) can include its effect on endangered species. *Id.*

¹²³ *Id.*

¹²⁴ Brief for EPA at *14, *Washington Toxics*. EPA argued that although the ESA has a citizen suit provision, it should not be read so as to provide citizen plaintiffs greater ability to enjoy pesticide registration than EPA itself possessed. *Id.* at *15.

¹²⁵ *Id.* at *15. EPA proposed that the citizen plaintiffs should have first petitioned EPA to suspend registration of the offending active ingredients, and only upon an EPA decision on that petition should a lawsuit have been allowed. *Id.*

¹²⁶ *Id.* at *16, *27-*28.

The Ninth Circuit rejected EPA's position, applying the Eighth Circuit's *Defenders of Wildlife* logic and holding that FIFRA does not allow EPA to exempt itself from the ESA, and that EPA must comply with the ESA if its registration of pesticides will affect listed species.¹²⁷ The court held that while the statutes have different purposes and calculations, EPA could not avoid its duties under the ESA simply "because it is bound to comply with another statute that has consistent, complementary objectives."¹²⁸ The court also dismissed the argument that EPA lacked discretion to cancel registrations except under the statutory requirements of FIFRA, and noted that a plaintiff need not exhaust FIFRA remedies before seeking relief under another statute.¹²⁹ The Ninth Circuit upheld the district court's injunctive relief, noting that because it was the "maintenance of the 'status quo' that [was] alleged to be harming the endangered species," the injunction was appropriate pending EPA compliance with the ESA.¹³⁰ Furthermore, the court placed the burden of proof on EPA to show that its action was non-jeopardizing to the listed species, finding that such burden-shifting was appropriate under the ESA for agency actions that have violated Section 7(a)(2).¹³¹

Although the Supreme Court denied certiorari in *Washington Toxics*, the Court recently decided another pivotal case with potential implications for FIFRA. In *National Association of Home Builders v. Defenders of Wildlife*,¹³² the Court addressed the consultation requirements of section 7 in connection with a transfer of permitting authority to a state government under section 402(b) of the Clean Water Act ("CWA").¹³³ EPA argued that section 402(b)'s mandatory nature prevented it from denying a state application based on ESA considerations. It was not disputed that the state applicant had met the nine specified criteria in section 402(b). The issue was whether EPA was required to determine if, under section 7, its transfer decision would jeopardize listed species, in essence adding a tenth criterion to the list of nine required for a transfer under section 402(b) of the CWA.¹³⁴ In a 5-4 decision,¹³⁵ the Supreme Court held that EPA was not required to undergo consultation in granting a permit transfer, because the decision to grant such

¹²⁷ *Washington Toxics*, 413 F.3d at 1032.

¹²⁸ *Id.* The court explained that "FIFRA utilizes a cost-benefit analysis to ensure that there is no unreasonable risk created for people or the environment . . . taking into account the economic, social, and environmental costs and benefits of a pesticide's use." The ESA, on the other hand, "affords endangered species the 'highest of priorities' in assessing risks and benefits." *Id.*

¹²⁹ *Id.* at 1032-33.

¹³⁰ *Id.* at 1035.

¹³¹ *Id.*

¹³² 127 S. Ct. 2518 (2007).

¹³³ For further analysis of the case in this issue, see Katharine Mapes, Case Comment, *National Association of Home Builders v. Defenders of Wildlife*, 32 HARV. ENVTL. L. REV. 263 (2008).

¹³⁴ *Nat'l Ass'n of Home Builders*, 127 S. Ct. at 2525.

¹³⁵ *Id.* at 2524. Justice Alito delivered the opinion of the Court, in which Chief Justice Roberts and Justices Scalia, Kennedy, and Thomas joined.

a transfer is not a discretionary one.¹³⁶ Of significant importance to the majority was the fact that section 402(b) states that EPA “shall approve” a transfer if each of the nine specified criteria are met.

Because section 3(c)(5) of FIFRA likewise provides that EPA “shall register” a pesticide if the specified standards are met, it may appear at first glance that under *National Association of Homebuilders*, compliance with section 7 is not required when EPA makes a registration decision. There are significant differences, however, in the requirements of section 402(b) of the CWA and those of section 3(c)(5) of FIFRA. CWA section 402(b) specifies an *exclusive* list of criteria that must be met for EPA to approve a transfer. Each of these criteria relates solely to the issue of whether the state applying for the transfer has the legal authority and other abilities to carry out the permitting program.¹³⁷ These criteria do not relate to whether a transfer (or permits issued under such a transfer) will jeopardize listed species. Thus, the Court concluded that although EPA could exercise some discretion in applying the criteria, it could not impose a completely new criterion addressing listed species impact to the exclusive list related to legal, administrative, and procedural abilities.¹³⁸

The criteria in section 3(c)(5) of FIFRA, on the other hand, actually *require* EPA to consider the effects of the registration decision on wildlife. This section directs EPA to make a determination regarding whether a pesticide will cause “unreasonable adverse effects on the environment,”¹³⁹ a term the statute defines to include “all plants and man and other animals . . . and the interrelationships which exist among these.”¹⁴⁰ Thus, by its very terms, FIFRA section 3(c)(5) authorizes EPA to evaluate risks to “plants and animals,” which inherently include threatened and endangered plants and animals. Although FIFRA uses the term “shall,” the term is used to mandate that EPA consider, among other things, the impacts on listed species. As the Ninth Circuit noted in *Washington Toxics Coalition*, FIFRA’s mandate to consider effects on listed species is complimentary to the mandates of the ESA.¹⁴¹ Thus, unlike the CWA provisions reviewed in *National Association of Homebuilders*, under which ESA compliance would require a completely new criterion to be added, the ESA’s mandate to consider effects on listed species is complementary to FIFRA’s mandate.

Moreover, requiring EPA to undergo the section 7 consultation process prior to making an unreasonable adverse effects determination under FIFRA will provide the type of information and expertise of the Services that will inform EPA’s FIFRA decision-making. Indeed, informed decision-making is one of the primary purposes of the consultation process. Accordingly, the Court’s rationale in *National Association of Homebuilders* would not appear

¹³⁶ *Id.* at 2538.

¹³⁷ See 33 U.S.C. § 1342(b) (2000).

¹³⁸ See *Nat’l Ass’n of Homebuilders*, 127 S. Ct. at 2537.

¹³⁹ 7 U.S.C. §§ 136a(c)(5)(C)-(D) (2000).

¹⁴⁰ *Id.* § 136(j).

¹⁴¹ *Washington Toxics Coalition v. EPA*, 413 F.3d 1024, 1032 (9th Cir. 2005).

to extend to EPA's decisions under FIFRA section 3(c)(5), because unlike EPA's decision-making under CWA section 402(b), under FIFRA not only is EPA authorized to consider effects on plants and animals, it is required to do so. The mere fact that FIFRA uses the term "shall" appears to be irrelevant given the dramatically different mandates of CWA section 402(b) and those of FIFRA section 3(c)(5). Therefore, although it is not yet clear how future courts will interpret or apply *National Association of Homebuilders* to FIFRA, it is unlikely that courts will find that the decision in any way obviates or alters EPA's requirement to comply with section 7 of the ESA when making registration decisions. Thus, the *Washington Toxics* holding requiring EPA to comply with ESA section 7 in FIFRA registrations appears to remain good law. Further, under the 1989 *Defenders of Wildlife* case, EPA continues to have potential section 9 liability for registering pesticides that actually take listed species.

After its dramatic loss in *Washington Toxics*, EPA began settling suits brought to force it to comply with section 7 in the FIFRA registration process.¹⁴² One such settlement occurred in 2005, in response to a lawsuit brought by the CBD and the Save Our Springs Alliance alleging that EPA violated both the consultation and anti-taking provisions of the ESA by registering six pesticides without reviewing potential negative effects on the Barton Springs Salamander.¹⁴³ Under the terms of the settlement agreement, EPA must determine effects on the salamander for the six pesticides according to a specified schedule, evaluating whether the individual pesticides will have no effect, possible but unlikely effects, or likely adverse effects, and providing information to the FWS in the event of any likely adverse effects.¹⁴⁴ Other recent settlements with the Natural Resources Defense Council and CBD contain similar provisions, requiring EPA to make effects determinations for dozens of pesticides on many listed species.¹⁴⁵

¹⁴² Some settlements actually occurred prior to the court decision in *Washington Toxics*. See, e.g., *Californians for Alternatives to Toxics v. EPA*, No. C00-3150 CW (N.D. Cal. 2002) (resulting in EPA's agreement to make "effects determinations" for approximately 20 pesticides harmful to dozens of plant and salmon species by specified deadlines); Request for Public Comment on Proposed Consent Decree Involving Pesticides and the Endangered Species Act, 67 Fed. Reg. 21,232-01, 21,233 (April 30, 2002). See also *Californians for Alternatives to Toxics*, <http://www.alternatives2toxics.org> (last visited Dec. 2, 2007) (on file with the Harvard Environmental Law Review).

¹⁴³ U.S. Environmental Protection Agency, *EPA Signs Settlement Agreement Regarding Endangered Species*, http://www.epa.gov/oppfead1/cb/csb_page/updates/es-settlement.htm (last visited Nov. 7, 2007) (on file with the Harvard Environmental Law Review). The pesticides in question were atrazine, diazinon, carabaryl, prometon, metolachlor and simazine. In the lawsuit, the plaintiffs specifically charged that EPA had failed to comply with the consultation requirements of sections 7(a)(1) and 7(a)(2) of the ESA. Center for Biological Diversity vs. Johnson, No. 1:04-cv-00126-CKK, Settlement Agreement, at 2-3 (D.C. Cir. 2005), available at http://www.epa.gov/oppfead1/cb/csb_page/updates/bartonsprings-agreemt.pdf.

¹⁴⁴ *Id.*

¹⁴⁵ See U.S. Environmental Protection Agency, Natural Resources Defense Council (NRDC) v. EPA — EPA Signs Settlement Agreement Regarding Endangered Species, http://www.epa.gov/oppfead1/endanger/litstatus/NRDCsettlement_fs.htm (last visited Nov. 19, 2007) (on file with the Harvard Environmental Law Review); U.S. Environmental Protection Agency, Court Issues Stipulated Injunction Regarding Pesticides and the California Red-

The foregoing discussion illustrates EPA's historic reluctance to comply with the species protection statutes unless required by court order. To understand the cause of this reluctance fully, however, it is necessary to examine EPA's past failed attempts at compliance.

B. *The Agency's Regulatory Action and Inaction*

EPA's 35-year history with the ESA as applied to pesticide regulation has not been a good one. Even after its judicial losses, however, EPA appears unable to find a workable way to comply with the wildlife protection laws. This section describes the history of the agency's actions prior to and following the recent litigation.

1. *The Early Years (Prior to the 1989 Defenders Decision)*

a. *Early Consultations*

Prior to 1989, EPA had yet to formulate an effective method for consultation and review for potential pesticide threats to endangered species.¹⁴⁶ The agency's early attempts at meeting its section 7 obligations consisted of case-by-case pesticide registration reviews for individual species.¹⁴⁷ This process, however, was cumbersome, and in 1982 EPA instead initiated the "cluster approach," where all pesticides with similar use patterns would be considered together and the FWS would prepare a BiOp for all listed species potentially impacted by the pesticides.¹⁴⁸ EPA began implementing this approach and in the early 1980s consulted with the Services on clusters including the corn cluster, the small grain cluster, the forest cluster, the mosquito larvicide cluster and the rangeland/pastureland cluster.¹⁴⁹ This process, while quicker than the case-by-case method, suffered from problems of its own. Specifically, minor uses for pesticides were not reviewed and a final cluster package review took upwards of two to three years to complete.¹⁵⁰ More importantly, EPA failed to take action on the 1983 cluster BiOps.

legged Frog, <http://www.epa.gov/oppfead1/endanger/litstatus/redleg-frog/rf.htm> (last visited Nov. 19, 2007) (on file with the Harvard Environmental Law Review).

¹⁴⁶ Jim Serfis, *Pesticide Regulation*, in *BALANCING ON THE BRINK OF EXTINCTION* 214, 216-20 (Kathryn A. Kohm ed., 1991).

¹⁴⁷ *Id.* at 216.

¹⁴⁸ *Id.* at 216-17.

¹⁴⁹ In 1983, the Services issued BiOps for each cluster, making jeopardy determinations for 21 listed species for the corn cluster from one or more of 39 pesticides; 21 listed species for the small grain cluster from one or more of 58 pesticides; 58 listed species for the forest cluster from one or more of 23 pesticides; 77 listed species for the mosquito larvicide cluster from one or more of 11 pesticides; and 159 listed species for the rangeland/pastureland cluster from one or more of 32 pesticides. See U.S. Fish and Wildlife Service, Dep't of the Interior, Biological Opinion 2-3 (1989) [hereinafter 1989 BiOp] (describing the BiOps issued six years earlier).

¹⁵⁰ Serfis, *supra* note 146, at 217.

b. *The Creation of the ESPP*

Although during the 1980s EPA did attempt to comply with section 7 of the ESA, first on an individual case-by-case basis and later via the cluster approach, a 1986 independent review of EPA's pesticide program found that the agency did not comply with section 7 in one-third of all pesticide cases.¹⁵¹ In response to the review, EPA announced in 1987 that it would seek full ESA compliance by addressing all restrictions for pesticides found harmful to listed species, printing restrictions on product labels and supplying information bulletins providing use instructions.¹⁵² The proposal faced considerable opposition from the agricultural sector and USDA, and Congress delayed the program until 1988.¹⁵³ Due to congressional pressure and agricultural lobbying, EPA had not adopted the program as of 1989. At that time, the agency proposed instead a two-prong approach consisting of an individual species-based (rather than pesticide cluster-based) review, focusing on those species most in need of protection. This review could be followed by a determination of the highest acceptable rate of pesticide exposure for that species.¹⁵⁴ This approach was included in EPA's 1989 proposed Endangered Species Protection Program ("ESPP"), which was designed to establish a process for future consultations.¹⁵⁵

The proposed ESPP attempted to address risks to listed species by requiring a label on each pesticide product instructing users to obtain and consult with "county bulletins." These bulletins would be developed for each county in the United States that contained listed species' habitat. The bulletins were to consist of maps showing the location of the habitat and instructions on how to use pesticides properly to reduce risks to listed species.¹⁵⁶

The county bulletin program had many shortcomings. It was voluntary, unenforceable, and depended on pesticide users taking the initiative to obtain bulletins and comply with their recommendations. Before the Internet provided easy access to the bulletins, this was a cumbersome task that few, if any, users would have undertaken. Most significantly, EPA's progress in developing the bulletins was extremely slow, with bulletins for only one or two species in very few counties in each state to date.¹⁵⁷

¹⁵¹ *Id.* This review found that EPA had registered pesticides before receiving BiOps and failed to implement recommended restrictions for harmful pesticides. *Id.*

¹⁵² *Id.* at 218.

¹⁵³ *Id.* at 219.

¹⁵⁴ *Id.* at 220. The greatest acceptable rate was the smallest amount that may affect a listed species. *Id.*

¹⁵⁵ Endangered Species Protection Program, 54 Fed. Reg. 27,984, 27,988-89 (July 3, 1989). See also CBD Report, *supra* note 14, at 51.

¹⁵⁶ Endangered Species Protections Program, 54 Fed. Reg. at 27,990.

¹⁵⁷ For example, in the state of Florida, which has more than 108 listed species residing in the state, bulletins were developed for only three counties for only one species, the Florida Torreya tree. See U.S. Environmental Protection Agency, Pesticides: Endangered Species Protection Program: Gadsden County, Florida (Oct. 25, 2007), available at <http://www.epa.gov/espfflorida/gadsd.htm>. Similarly, for the State of Maryland, a bulletin was developed for only one county for one species of fish.

The county bulletin program neither enhanced species protection nor complied with the ESA.¹⁵⁸ Moreover, this program remained merely a “proposal” throughout the 1990s and early 2000s. During this time, EPA stated repeatedly that it would finalize the ESPP in the near future, but failed to take any action on the program until 2002, when it issued a second proposed ESPP, in response to the litigation of the early 2000s.

2. *The Middle Years*

a. *The 1989 and 1993 BiOps*

The 1986 internal review and the 1989 loss in *Defenders of Wildlife* appeared to nudge EPA into action. In the late 1980s and early 1990s, EPA consulted with the Services in two substantial cases, each involving a large number of pesticides and potentially affected species. In the first case, EPA reinitiated consultation on selected portions of five previous cluster BiOps.¹⁵⁹ This consultation involved 112 pesticides, collectively affecting 165 listed species.¹⁶⁰ The ten month process culminated in a major BiOp issued by FWS in 1989. The 1989 BiOp superseded the 1983 cluster BiOps and made a total of 1,867 jeopardy findings.¹⁶¹

Shortly after the 1989 BiOp, EPA initiated consultation lasting two years on sixteen vertebrate control pesticides potentially affecting a number of species. FWS’s resulting 1993 BiOp made 189 jeopardy findings.¹⁶² In the 1989 and 1993 consultations alone, FWS made 2056 jeopardy findings.¹⁶³ This overwhelming number of jeopardy findings seemed to paralyze EPA. In the 1993 BiOp alone, FWS recommended over 165 reasonable and

¹⁵⁸ See Goldman, *supra* note 119, at *34-*35 (discussing extensive formal consultation by EPA in the late 1980s and early 1990s and EPA’s subsequent disregard for the resulting mitigation requirements).

¹⁵⁹ 1989 BiOp, *supra* note 149. EPA’s reasons for reinitiating consultation were

(1) reevaluation of the jeopardy posed to aquatic species by a selected group of pesticides, based on new analyses of their estimated environmental concentrations; (2) evaluation of pesticides that may affect four bird species listed since the [1983 BiOps] were completed; (3) reassessment of the potential exposure of certain species to selected pesticides, based on biological and toxicological data; (4) consideration of new reasonable and prudent alternatives to avoid jeopardy to species occurring solely or largely on Federal lands, and for the red-cockaded woodpecker and the wood stork; (5) assessment of the potential for certain pesticides to indirectly harm listed species through their food supply; [and] (6) consideration of withdrawing or cancelling jeopardy opinions for pesticides that have been cancelled or suspended.

Id. at 1-2.

¹⁶⁰ *Id.* at 5.

¹⁶¹ *Id.*

¹⁶² U.S. Fish and Wildlife Service, Dep’t of the Interior, Biological Opinion, March 1993: Effects of 16 Vertebrate Control Agents on Threatened and Endangered Species I-3 (1993) [hereinafter 1993 BiOp]. The potentially affected species included thirty mammal species, fifteen bird species, nine reptile species, and one insect species.

¹⁶³ Detailed tables developed by the author showing the reasonable and prudent alternatives for each of the jeopardy findings in these BiOps, as well as the incidental take authoriza-

prudent alternatives for the various species/pesticide combinations; the 1989 BiOp provided a menu of approximately twenty reasonable alternatives, most of which applied to many of the large numbers of pesticide/species combinations.¹⁶⁴ Examples include:

- Prohibit use of the chemical within 100 yards of the water's edge for ground applications and 1/4 mile for aerial applications at sites of known populations or within designated critical habitat, whichever is larger.
- Prohibit use within a 1/2 mile radius of the species' occupied habitat.
- Applicators of the listed jeopardy pesticides must limit their use within all identified wood stork rookeries, including a buffer extending 8-12 miles from the rookery . . .
- Applicators of the listed forestry use pesticides will be required to conduct a survey for red-cockaded woodpecker colonies prior to using this pesticide in forests containing pine trees over 30 years old. . . .
- After periods of heavy rains, as measured by surface water (greater than 4 inches) within identified habitat, do not apply chemical within a 100 yards radius of the known breeding sites of the Puerto Rican crested toad. Restrictions shall remain in place for no less than 25 days.¹⁶⁵

EPA did not seem to know how to translate information gleaned from the 1989 and 1993 BiOps into regulatory restrictions that would reduce risks to listed species. EPA's limited ability to regulate pesticide use, primarily through label directions, was a poor vehicle for incorporating the large number of reasonable and prudent alternatives recommended in the BiOps. While some label restrictions may be easily understood and followed by users, others are very complex or require specialized knowledge or data, such that it is unlikely that most pesticide users will be willing or able to comply. FIFRA exacerbates these monitoring problems by failing to provide EPA with the authority to require permits or other advance notice of pesticide applications. Among the questions EPA faced in responding to the BiOps were: How would it incorporate the large number of complex reasonable and prudent alternatives into label language? Could pesticide users realistically be expected to read potentially dozens of pages of label language and follow the restrictions when applying the pesticides? How would EPA enforce these detailed label restrictions?

tions and reasonable and prudent measures, are on file with the author and the Harvard Environmental Law Review.

¹⁶⁴ See generally 1993 BiOp, *supra* note 162 at III-1 to III-54; 1989 BiOp, *supra* note 149 at II-4 to II-7.

¹⁶⁵ 1989 BiOp, *supra* note 149, at II-4.

b. EPA's Failure to Implement the BiOps

EPA has failed to take any action to require compliance with the reasonable and prudent alternatives recommended in the 1989 and 1993 BiOps. My own research into regulatory actions taken on each pesticide for which jeopardy opinions were issued in the BiOps revealed no actions taken to implement the recommendations of the FWS to reduce risks to any affected listed species. This conclusion is based in part on a detailed analysis of all of the jeopardy opinions in the 1993 BiOp, tracing the regulatory decisions on each pesticide for which one of the 189 jeopardy opinions were issued from the date of the BiOp to the present. My research investigated (1) whether EPA had cancelled, suspended, or limited any registration in response to the jeopardy opinions; and (2) whether EPA had imposed any of the reasonable and prudent alternatives recommended by the FWS as either a label restriction or any other type of regulatory mechanism. This research revealed that of the 189 jeopardy opinions and 165 reasonable and prudent alternatives suggested in the 1993 BiOp, none resulted in EPA action in direct response to the findings or suggestions in the BiOp. Similar conclusions apply to the 1989 BiOp.¹⁶⁶

Instead of imposing the suggested reasonable and prudent alternatives as label restrictions or taking other regulatory action in response to the jeopardy findings in the 1989 and 1993 BiOps, EPA has attempted repeatedly to justify its failure to act by referring to the county bulletin program. For example, in its Reregistration Eligibility Documents (“REDs”) for the pesticides found to cause jeopardy in the 1993 BiOp, EPA’s sole acknowledgment of the endangered species issue was to include in each RED the following statement: “The Agency is not imposing label modifications at this time through the RED. Rather, any requirements for product use modifications will occur in the future under the Endangered Species Protection

¹⁶⁶ Four of the pesticides that were evaluated in the 1989 BiOp have since been severely restricted or banned by EPA: (1) granular carbofuran (severely restricted); (2) endrin (banned); (3) EPN (banned); and (4) mevinphos (banned). See U.S. Environmental Protection Agency, Pesticides: Regulating Pesticides: UN PIC & U.S. PIC-Nominated Pesticides List (Oct. 29, 2007), available at <http://www.epa.gov/oppead1/international/piclist.htm>. However, the timing and reasons given indicate that the BiOps were not the central impetus for these cancellations. See U.S. Environmental Protection Agency, Ground Water and Drinking Water: Technical Fact Sheet on Endrin (Nov. 28, 2006), <http://www.epa.gov/safewater/dwh/t-soc/endrin.html> (on file with the Harvard Environmental Law Review) (last visited Oct. 7, 2007); http://www.pesticideinfo.org/Detail_Product.jsp?REG_NR=01010700041&DIST_NR=033270 (last visited Nov. 19, 2007); <http://www.epa.gov/oppsrd1/reregistration/mevinphos/> (last visited Nov. 9, 2007); <http://www.epa.gov/oppsrd1/reregistration/carbofuran/> (last visited Nov. 19, 2007). The manufacturers of several other pesticides that were found to cause jeopardy in the 1989 BiOp have voluntarily cancelled the registrations of such pesticides for reasons that are not described in the public literature. These pesticides include Benomyl, Ethion, Ethyl Parathion, Fenaminphos, Fonofos, Fenvalerate, and Isofenphos. Information regarding these voluntary cancellations can be viewed at U.S. Environmental Protection Agency, Pesticides: Regulating Pesticides: Pesticide Product Label System (PPLS) (Nov. 6, 2007), <http://www.epa.gov/pesticides/pestlabels/index.htm> [hereinafter Pesticide Product Label System].

Program.”¹⁶⁷ Similar statements are included in the REDs for the pesticides found to pose jeopardy in the 1989 BiOp.¹⁶⁸ EPA has not reinitiated consultation with the Services prior to issuing the REDs to evaluate any new information or changed circumstances that may have occurred during the almost twenty years since the previous consultations occurred and to impose label restrictions based on such consultations. Instead, EPA continues to rely on its future implementation of the ESPP and its plans to require additional data at some point in the future. As described above, the county bulletin program is virtually non-existent, addressing few species and counties, leaving it to the user to decide whether or not to obtain the bulletins and follow their instructions. Although, as discussed below, EPA has once again attempted to revive the ESPP, EPA has not made any significant progress in implementing the program and still has only developed a very few bulletins for a very few species and counties.

Despite EPA’s evident inaction, it is worth noting that the agency has taken certain limited regulatory actions based on risks to wildlife, though not directly in response to recommendations of the Services. However, these actions represent only a small step in relation to the many thousands of pesticides and affected species currently in EPA’s charge. In fact, the only reported judicial or administrative decision in which EPA took regulatory action based primarily on risks to wildlife was *Ciba Geigy Corp. v. EPA*,¹⁶⁹ in which EPA proposed cancelling certain uses of the pesticide diazinon on golf courses and turf grass due to the risk posed to wild birds.¹⁷⁰ During the 1980s and 1990s, EPA considered canceling other pesticides based on risks to wildlife, but failed to take any significant action.

In 1991, EPA proposed canceling the registration for ethyl parathion, due to human and wildlife risks posed by its high acute toxicity. EPA ultimately accepted a settlement with the manufacturer cancelling only the

¹⁶⁷ See EPA, Interim Reregistration decision for Fenthion (2001), available at <http://www.epa.gov/oppsrrd1/REDs/0290ired.pdf>. The REDs, including those for the pesticides evaluated in the 1993 BiOp, can be viewed at Pesticide Product Label System, *supra* note 166.

¹⁶⁸ The REDs for all of the pesticides found to pose jeopardy in the 1993 BiOp were issued during the period from 1991-1998. The development of the REDs for the pesticides found to cause jeopardy in the 1989 BiOp occurred over a much longer period of time. Of the ninety-five pesticides for which jeopardy determinations were made, REDs have been issued for approximately seventy-two over a period ranging from 1991 to late 2007. Based on a review of these REDs, it appears that during the 1990s, EPA included an endangered species statement similar to the one used for the 1993 BiOp pesticides, which merely indicated that EPA would address the ESA concerns in the future under the proposed ESPP. For the REDs issued in the 2000s, EPA began to add language to the endangered species statement that indicates that the information regarding risks to endangered species in the REDs is considered “screening level assessment” that does not constitute a “may affect” finding under the EPA and that EPA will be requiring additional data to further characterize and refine its ecological and endangered species risk assessment. The REDs, including those for the pesticides evaluated in the 1989 BiOp, can be viewed at *id.*

¹⁶⁹ 874 F.2d 277 (5th Cir. 1989).

¹⁷⁰ *Id.* at 278. The Fifth Circuit held that FIFRA gave the EPA Administrator discretion to conclude that recurring bird kills are an unreasonable adverse environmental effect regardless of whether they significantly reduce bird populations. *Id.*

ground application uses of the pesticide, which posed significant risks to farm workers. The settlement did not address aerial application of the pesticide, which posed the greatest risks to birds and other wildlife due to spray drift associated with this form of application.¹⁷¹ Despite the fact that ethyl parathion had been implicated in the deaths of thousands of birds, EPA declined to take regulatory action to address these risks. Ultimately, in 2001, the manufacturer of ethyl parathion voluntarily cancelled the registration relating to the remaining uses of the pesticide, after a concerted campaign led by the American Bird Conservancy in partnership with Defenders of Wildlife, the Pesticide Action Network, and the World Wildlife Fund.¹⁷²

EPA entered into a 1991 settlement that phased out the use of the granular form of the pesticide carbofuran, which was thought to have caused the deaths of many birds.¹⁷³ However, EPA continued to allow the use of the liquid form of the pesticide, which had been equally responsible for widespread bird mortality.¹⁷⁴ In August 2006, EPA published its Interim RED for carbofuran, in which EPA announced its intention to cancel all uses of carbofuran due to both ecological and occupational risks, as well as human health risks from residues on food and in water. EPA has announced that it intends to issue a Notice of Intent to Cancel carbofuran registrations and has requested that its Scientific Advisory Panel review its underlying scientific assumptions.¹⁷⁵

Equally disturbing as EPA's failure to take action to reduce risks as recommended by the Services in the 1989 and 1993 BiOps is the fact that since 1993, EPA has not completed any formal consultations with the Services, and has rarely even initiated consultation unless explicitly required by court order or as part of a settlement agreement.¹⁷⁶ These failures led ultimately to the rash of lawsuits against EPA in the early 2000s for its failure to comply with section 7 of the ESA.

¹⁷¹ See Ethyl Parathion Receipt of Requests for Cancellation, 56 Fed. Reg. 65,061, 65,069 (Dec. 13, 1991); Ethyl Parathion, Amendment of Cancellation Order, 57 Fed. Reg. 3500 (Jan. 29, 1992); Ethyl Parathion, Correction to the Amended Cancellation Order, 57 Fed. Reg. 6168 (Feb. 20, 1992).

¹⁷² Ethyl Parathion; Notice of Use Cancellations, 66 Fed. Reg. 47,667 (Sept. 13, 2001).

¹⁷³ Pierre Mineau, *Birds and Pesticides: Are Pesticide Regulatory Decisions Consistent with the Protection Afforded Migratory Bird Species Under the Migratory Bird Treaty Act?*, 28 WM. & MARY ENVTL. L. & POL'Y REV. 313, 322 (2004).

¹⁷⁴ See *id.*

¹⁷⁵ The panel was planning to hold a meeting to conduct such a review in February 2008. FIFRA Scientific Advisory Panel: Notice of Public Meeting, 72 Fed. Reg. 22,612 (Dec. 6, 2007).

¹⁷⁶ See *supra* note 163 and accompanying text.

3. *The Recent Years (Responses to the Litigation of the Early 2000s)*

a. *The Resurrection of the ESPP*

As described above, in the past several years, EPA has come under increasing criticism for its failure to fulfill its obligations under the ESA.¹⁷⁷ EPA makes a large number of regulatory decisions regarding pesticides every year. Currently, there are approximately 20,000 registered pesticide product formulations, containing approximately 675 active ingredients and 1,835 other ingredients. Approximately 470 of the 675 active ingredients are used in agriculture.¹⁷⁸ In a typical year, EPA makes hundreds of significant regulatory decisions regarding pesticide registration. For example, in 2003 alone, EPA registered thirty-one new pesticide active ingredients, approved 334 new uses of previously registered active ingredients on over 1,500 different crops, and issued more than 6,500 more minor registrations. During this same time period, EPA also completed re-registration assessments on twenty-eight registered active ingredients, and processed nearly 500 emergency exemption requests.¹⁷⁹ Since the 1993 BiOp, EPA has not initiated any formal consultations, whatsoever, on any of thousands of registrations or other FIFRA regulatory decisions, unless required by court order or settlement agreement. Instead, EPA continues to rely on the never-finalized ESPP program, including the limited voluntary county bulletin program.

In December 2002, EPA revived its ESPP by filing a notice of its proposed implementation in the Federal Register.¹⁸⁰ The 2002 proposal was in essence a reiteration of the 1989 program, which EPA never finalized. The proposed plan described how EPA would register pesticides under FIFRA and how the Agency would balance the interests of its responsibilities under the ESA and the desire to avoid “unnecessary burden” on farmers and pesticide users.¹⁸¹ The notice primarily discussed EPA’s quantitative testing approaches undertaken in a pesticide registration process, including both exposure tests and toxicity tests on listed species.¹⁸²

¹⁷⁷ See Goldman, *supra* note 119; Mineau, *supra* note 173. See also Marcilynn A. Burke, *Klamath Farmers and Cappuccino Cowboys: The Rhetoric of the Endangered Species Act and Why it (Still) Matters*, 14 DUKE ENVTL. L. & POL’Y F. 441, 487-491 (2004) (discussing a number of regulatory attempts to weaken the consultation process including with regard to pesticide registration).

¹⁷⁸ U.S. ENVIRONMENTAL PROTECTION AGENCY, OVERVIEW OF THE ECOLOGICAL RISK ASSESSMENT PROCESS IN THE OFFICE OF PESTICIDE PROGRAMS 7 (Jan. 23, 2004), available at <http://www.epa.gov/oppfead1/endanger/consultation/ecorisk-overview.pdf> [hereinafter ENDANGERED AND THREATENED SPECIES EFFECTS DETERMINATIONS].

¹⁷⁹ Endangered Species Protection Program Field Implementation, 67 Fed. Reg. 71,549 (Dec. 2, 2002).

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² *Id.* at 71,553-71,554.

Another major focus of the notice was the revival of the county bulletin program, in which EPA announced that it would develop and update county bulletins and would post them on its website.¹⁸³ EPA announced that it would develop bulletins with the assistance of the FWS, National Oceanic and Atmospheric Administration (“NOAA”), USDA, states and tribes, and would issue bulletins only for counties in which such measures were considered necessary.¹⁸⁴ Bulletins would specifically identify (1) the listed species of concern, (2) pesticides that may harm the listed species, (3) the protection measures for that species as well as any habitat information, and (4) a county map indicating where pesticide usage should be modified from its standard use.¹⁸⁵ The county bulletins would be designed to inform the public of pesticide application limitations in their community.¹⁸⁶ An interested pesticide user would review the county bulletins, which are available on EPA’s website, and check for any use restrictions or boundary requirements for pesticide application.¹⁸⁷

In addition to changing the substantive aspects of the bulletins, EPA proposed modifying pesticide labels to encourage users to follow the information contained within the county bulletin.¹⁸⁸ The modified label would also reference the effect the pesticide could have on listed species and how the user could obtain the relevant county bulletin.¹⁸⁹ Interestingly, label statements that would be amended would not be county-specific, but would simply reference the potential harms to listed species and guide the user to the particularized county bulletin to find information for his county.¹⁹⁰ Unfortunately, given EPA’s poor track record in developing and updating county bulletins over the past nineteen years, EPA’s reiteration of this program in its 2002 proposal did little to comfort those concerned with protecting listed species from pesticides.¹⁹¹

b. The Amendment to the Services’ Rule

The litigation and increased public concern over EPA’s ongoing failure to comply with the ESA in its FIFRA decision-making prompted the executive branch to attempt to amend the joint regulations for consultation under section 7 of the ESA to eliminate the need for EPA to consult the Services. On August 5, 2004, the Services and EPA issued a final rule regarding con-

¹⁸³ *Id.* at 71,558.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ Pesticides: Endangered Species Protection Program: Endangered Species Protection Bulletins (Sept. 18, 2007), available at <http://www.epa.gov/oppfead1/endanger/bulletins.htm>.

¹⁸⁷ 67 Fed. Reg. 71,549, 71,558-59.

¹⁸⁸ *Id.*

¹⁸⁹ *Id.* at 71,559.

¹⁹⁰ *Id.*

¹⁹¹ CBD Report, *supra* note 14, at 52-53. The CBD Report outlines several other shortcomings of the 2002 ESPP, including EPA’s misinterpretation of its duties under the ESA and its general institutional lack of concern for listed species.

sultation practices among the Services and EPA for pesticide registrations.¹⁹² The purported rationale for the rule was to provide a more efficient approach to making decisions on whether new pesticides will “adversely affect” a listed species.¹⁹³ Because the “Services believe that EPA’s expertise in ecological risk assessments of pesticides, together with the safeguards built into the alternative consultation agreement, make case-by-case discussions and written concurrences in EPA’s [not likely to adversely affect (“NLAA”)] determinations . . . unnecessary for FIFRA actions,” there would be no formal consultation for any FIFRA actions that EPA determines are not likely to adversely affect any endangered species.¹⁹⁴ Under the new rule, EPA would perform its own ESA analysis for NLAA determination purposes. Once EPA made its NLAA determination, the analysis would be complete, and there would be no role for the Services to second-guess the decision.¹⁹⁵ If EPA concluded that the FIFRA action was likely to jeopardize the continued existence of any listed species or its critical habitat, the agency would prepare an effects determination (made with the assistance of a Services representative); this effects determination would serve as a functional equivalent to the biological opinion that the Services normally provide.¹⁹⁶ At that point, the relevant Service would review the determination and could adopt it, modify it, or provide its own biological opinion laying out reasonable and prudent alternatives available to EPA.¹⁹⁷ In effect, the rule would allow EPA to bypass consultation if it concluded the pesticide regulatory decision was “not likely to adversely affect” a listed species; if EPA concluded that a regulatory action was “likely to effect” a listed species, EPA could, in essence, write the BiOps which the Services could adopt or modify.

c. *The Environmentalists’ Response*

The new rule was widely criticized by environmental organizations.¹⁹⁸ The primary criticism of the rule was the provision for an upfront approval by the Services of EPA’s determinations without any oversight for the decision. Critics argued that EPA staff did not possess the necessary expertise to make effects determinations without input from the Services.¹⁹⁹ Further, the idea of allowing EPA to conduct a review of the effects a pesticide would

¹⁹² Joint Counterpart Endangered Species Action Section 7 Consultation Regulations, 69 Fed. Reg. 47,732 (Aug. 5, 2004).

¹⁹³ *Id.* at 47,736.

¹⁹⁴ *Id.* at 47,737.

¹⁹⁵ *Id.*

¹⁹⁶ *Id.* at 47,738

¹⁹⁷ *Id.*

¹⁹⁸ See Goldman, *supra* note 119, at *62-*72; CBD Report, *supra* note 14, at 10-11; *Wash. Toxics Coal. v. U.S. Dep’t of Interior*, 457 F. Supp. 2d 1158 (W.D. Wash. 2006) (*Washington Toxics II*). See also CBD Report, *supra* note 14, at 58 (“Unsurprisingly, the proposed rule and the new ESPP were strongly advocated for by the FIFRA Endangered Species Task Force (FESTF), a committee composed of fourteen agro-chemical companies.”).

¹⁹⁹ CBD Report, *supra* note 14, at 58. Indeed, the Services have been critical of EPA’s scientific approaches in the consultation process.

have on listed species was criticized, given that history has routinely shown that the FWS and NMFS have been critical of EPA's scientific approaches in the consultation process. Environmental organizations feared that the new rule would undercut the ESA and put listed species at greater risk. Consequently, a number of organizations filed suit, alleging that the new rule violated the ESA. A court in the Western District of Washington found several provisions of the new rule inconsistent with the mandates of section 7 in *Washington Toxics Coalition v. U.S. Department of Interior (Washington Toxics II)*.²⁰⁰ Specifically, the court invalidated the provisions of the new rule regarding the process by which EPA would make NLAA determinations, finding these provisions to be arbitrary and capricious.²⁰¹ The court found that these portions of the rule were facially inconsistent with section 7, and therefore could not survive a *Chevron* step one test.²⁰² Moreover, the court found overwhelming evidence that in promulgating the rule, the Services did not comply with their own ESA section 7 obligations to avoid jeopardy to listed species.²⁰³ As of the writing of this Article, an appeal of the district court's ruling on the challenge to the new rule was pending before the Ninth Circuit.²⁰⁴

d. The Ecological Risk Assessment Process

In 2004, EPA published a document described as an overview of its Ecological Risk Assessment Process.²⁰⁵ As described in this document, EPA's ecological risk assessment process begins with a Screening-Level Risk Assessment to evaluate a substance's potential impact on non-target organisms, including listed species. If the screening-level risk assessment indicates that a pesticide "may potentially impact, either directly or indirectly, listed species or critical habitat," a species and habitat-specific ecological risk assessment is conducted.²⁰⁶ "The result of these steps is an effects determination that the pesticide will have 'no effect,' 'may affect but

²⁰⁰ 457 F. Supp. 2d 1158.

²⁰¹ *Id.* at 1200.

²⁰² See *Chevron U.S.A. v. Natural Res. Def. Council*, 467 U.S. 837, 843 (1984). *Chevron* sets forth a two-step test for reviewing an agency's interpretation of a statute. Under step one, a court will give effect to Congressional interpretation if Congress has spoken to the precise question at issue.

²⁰³ *Washington Toxics II*, 457 F. Supp. 2d at 1193. Shortly after the 2006 *Washington Toxics II* ruling, the District Court for the District of Columbia upheld challenges to ESA regulations promulgated by the Services that would establish a similar consultation process for the National Fire Plan regulatory actions. *Defenders of Wildlife v. Kempthorne*, No. 04-1230(GK), 2006 WL 2844232 (D.D.C. Sept. 29, 2006). For a complete analysis of both cases and the distinct approaches taken by each court, see Cynthia A. Drew, *Beyond Delegated Authority: The Counterpart Endangered Species Act Consultation Regulations*, 37 ENVTL. L. REP. 10,483 (2007).

²⁰⁴ *Wash. Toxics Coal. v. U.S. Dep't of Interior*, Nos. 06-35873, 06-35891, 06-35899 (9th Cir. filed Oct. 17, 2006).

²⁰⁵ ENDANGERED AND THREATENED SPECIES EFFECTS DETERMINATIONS, *supra* note 178.

²⁰⁶ *Id.* at 65.

is not likely to adversely affect the species or critical habitat,' or 'may adversely affect the species or critical habitat.'"²⁰⁷

Under this approach, apparently only when EPA makes a "likely to adversely affect" determination will it pursue consultation with the Services.²⁰⁸ As described above, however, ESA section 7 and its implementing regulations require consultation of some form whenever an action "may affect" a listed species, not only when a likely to adversely affect determination is made by the action agency. It is not clear how the risk assessment process relates to the consultation process, because the risk assessment document does not acknowledge any role for the expert input of the Services. Also, while the risk assessment document sets up an extremely complex methodology for assessing effects on wildlife, it does not amend the data requirements to require registrants or applicants to develop or submit more comprehensive or better data on wildlife effects. Another shortcoming of EPA's ecological risk assessment process is that it focuses solely on the impacts to the organisms themselves and does not address impacts to habitat that indirectly affect wildlife species.²⁰⁹

Thus, EPA's ecological risk assessment process appears to be one more attempt to circumvent ESA section 7 compliance by providing that EPA, without consultation with the Services, will make the determination of whether the use of the pesticide "may affect" the listed species, "is not likely to adversely affect the listed species," or "is likely to affect the listed species."

e. EPA's Latest Efforts

EPA's most recent effort to explain the ESPP occurred on November 2, 2005, when it published a notice in the Federal Register describing how the ESPP will be implemented in the field.²¹⁰ EPA describes its goal as meeting its responsibilities under FIFRA in compliance with the ESA and without unnecessarily burdening pesticide users.²¹¹ EPA's plan is not a legally binding regulation, and the Agency may decide to change it at any time without notice and comment.²¹²

Under the plan, some pesticide actions, such as indoor products determinations and emergency exemptions under section 18 of FIFRA, are potentially excluded from the scope of the ESPP.²¹³ "EPA's overall strategy is to address listed species concerns within the context of the pesticide registration, re-registration, and registration review processes."²¹⁴ An effects deter-

²⁰⁷ *Id.* at 66.

²⁰⁸ *Id.* at 73.

²⁰⁹ CBD Report, *supra* note 14, at 54.

²¹⁰ Endangered Species Protection Program Field Implementation, 70 Fed. Reg. 66,392 (Nov. 2, 2005).

²¹¹ *Id.*

²¹² *Id.*

²¹³ *Id.* at 66,398-99.

²¹⁴ *Id.* at 66,399.

mination based on “EPA’s assessment of a pesticide use’s potential effects to listed species” is generally conducted to support the registration status of a pesticide.²¹⁵

Endangered Species Protection Bulletins (“Bulletins”) will be used to implement changes to a pesticide’s use when necessary to protect a listed species in a geographically specific area.²¹⁶ Bulletins will be implemented on a county scale. Information provided in the Bulletins includes the identity of the species of concern, the name of the active ingredient(s) to which the limitations apply, a description of the use limitation, a county map showing the specific geographic area to which the use limitations apply, and a picture and description of the species when it would not cause further threat to the species. There are also voluntary county bulletins that have been developed from past consultations available to pesticide applicators.²¹⁷

The pesticide label language that will be used when geographically specific use language is necessary to protect listed species will include the following at the beginning of the product’s Directions for Use: “ENDANGERED SPECIES PROTECTION REQUIREMENTS.”²¹⁸ EPA intends to make bulletins available six months before they go into effect. Applicators are required to use bulletins in effect the month in which they will be applying the pesticide.²¹⁹ EPA intends to treat the bulletins just as any other label provision in terms of enforcement.²²⁰ The misuse and misbranding provisions of FIFRA, as well as liability under section 9 of the ESA, will apply to pesticide users who fail to follow the applicable label provisions. In terms of monitoring, EPA will continue to use existing monitoring data from risk assessments, the U.S. Geological Survey, information provided under the Clean Water and Safe Drinking Water Acts, and information from state or tribal monitoring programs.²²¹ “EPA also intends to develop a process for monitoring the effectiveness of Bulletins after the Program has been in effect for some time.”²²²

Finally, EPA’s defeat in Washington Toxics Coalition, along with the settlements of a number of lawsuits, seem to have prodded EPA to initiate at least some ESA consultations. Since 2004, EPA has issued 87 effects determinations, all resulting from court orders or settlements. Of these, it has made fifty-four total “likely to adversely affect” findings triggering consul-

²¹⁵ *Id.* See also ENDANGERED AND THREATENED SPECIES EFFECTS DETERMINATIONS, *supra* note 205.

²¹⁶ 70 Fed. Reg. at 66,400. This program, while focusing on ESPP implementation in the field, is largely the same as risk assessment phase ESPP implementation.

²¹⁷ *Id.* Access to the bulletins will be provided at www.epa.gov/esp or 1-800-447-3813.

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ *Id.* at 66,401.

²²¹ *Id.* at 66,402.

²²² *Id.*

tation with the Services, in addition to twenty-eight consultations required by court order.²²³ To date, no consultations have been completed.

The Services have not yet issued jeopardy opinions for these recent consultations and EPA still has not implemented risk reduction measures on any pesticides to reduce harm to listed species. Despite the loss in *Washington Toxics I*, the only risk reduction action EPA has taken in response is to require that a "Point of Sale Notification" be distributed in retail stores that sell the pesticides subject to the Order. This notice is merely a one page flyer with a photograph of salmon, which states: "*Salmon Hazard: This product contains pesticides that may harm salmon or steelhead. Use of this product in urban areas can pollute salmon streams. This Notice was produced in compliance with a January 22, 2004 Court Order, to notify urban users about the potential for some pesticides to harm fish.*"²²⁴ EPA has not even imposed this statement as a label requirement for the pesticides involved. In addition, EPA has not taken any action to provide similar notification to large-scale non-urban pesticide users, who in all likelihood are applying larger quantities of pesticides in geographic locales that put a greater number of fish at risk.

In conclusion, given EPA's long history of non-compliance with the ESA, its recent decision to resurrect the old ESPP as its means of compliance does not appear to move it much further towards compliance than it was in the 1980s. Even EPA's recent plan for implementing the ESPP does not instill confidence that it will be able to achieve ESA compliance. It is difficult to understand how EPA believes it can make decisions regarding how to implement the ESPP in the field when it has yet to obtain a single BiOp since 1993. Without such a BiOp, how can EPA predict what reasonable and prudent alternatives the Services will recommend? Without such recommendations, how can EPA determine the best way to implement these recommendations in the field? Once again, EPA does not appear to be taking its ESA responsibilities seriously, and merely seems to be seeking some form of legal or political cover. Moreover, old shortcomings with the county bulletin approach continue to exist. Although today the Internet makes it easier for pesticide users to find county bulletins, there is still a significant likelihood that many users will not understand or be willing to read the label, understand that they must consult county bulletins, go to the website, find the appropriate bulletins, and properly comply. The more steps required of users, the less likely they will fully comply. Without some form

²²³ I have compiled a table of all of the pesticides for which EPA has made, or is in the process of making effects determinations or consulting with the Services. The table shows the status of the pesticide, the registered use, the toxicity level, whether the pesticide is subject to a court order, the effects determinations made, what the effects determinations are based on and the status of each of the consultations. The data is based on the EPA website on "effects determination," <http://www.epa.gov/oppfead1/endanger/litstatus/effects/index.htm>. The table is on file with the author and with the Harvard Environmental Law Review.

²²⁴ *Washington Toxics Coal. v. EPA*, No. C01-0132C, 2004 U.S. Dist. LEXIS 29886 (W.D. Wash. Jan. 22, 2004) (order granting injunction). The urban warnings apply only to a subset of the pesticide that was detected frequently in urban salmon streams.

of oversight to ensure that users are obtaining the proper bulletins, properly interpreting them, and actually following the instructions in the field, non-compliance remains likely. Perhaps most disturbing is the all too familiar slow pace at which the agencies are acting to carry out the consultation process. The Services, as well as EPA, appear to have gotten bogged down in scientific minutiae and bureaucracy and have failed to make any meaningful progress in protecting the species themselves. To move forward, the agencies will need some clear congressional direction on how to proceed in a manner that reconciles the conflicts between the statutes, and sets forth a clear path for agency action.

C. The Legislative Response

The ongoing thirty-five-year battle between FIFRA and species protection laws, which led to the flood of litigation starting in 2002, drew the attention of members of Congress concerned with what they perceived as the overly broad mandate of the ESA as it relates to private property rights. In response to these concerns, the House of Representatives, led by Congressman Richard Pombo (R-CA), passed the Threatened and Endangered Species Recovery Act of 2005.²²⁵ The new legislation would have dramatically altered several provisions of the 1973 Act, including a requirement that the government pay private landowners if FWS regulations limit development plans as well as changes in the method of species listing.²²⁶ Most significantly as relates to this Article, however, section 20 of the House bill would provide that any agency action in compliance with FIFRA would also be deemed to be in compliance with the ESA.²²⁷ Such a change at the legislative level would remove all FIFRA-related registration questions from the consultation requirements of Section 7(a)(2) and would presumably make the recent rule changes and subsequent lawsuits under Section 7(a)(2) moot. Environmental groups were united in their strong opposition to the bill, which was characterized as an “all-out assault” on the ESA and an “unmitigated disaster for endangered wildlife.”²²⁸ After the House passage of the Pombo Bill, it languished in the Senate, where Senate Committee on Environment and Public Works - Fish, Wildlife and Water Subcommittee Chair

²²⁵ H.R. 3824, 109th Cong. (2005).

²²⁶ *Id.*

²²⁷ *Id.* at § 20(a), p. 81. A report entitled “Implementation of the Endangered Species Act of 1973,” submitted to the House Committee on Resources provides some insight into the various amendments to the ESA. RICHARD POMBO, IMPLEMENTATION OF THE ENDANGERED SPECIES ACT OF 1973, (unpublished report to the H. Comm. on Resources) available at http://www.waterchat.com/Features/Archive/050517_ESA_Implementation_Report.pdf. The report discusses the “success rate” of the ESA in terms of de-listings of species versus the cost imposed by listing and critical habitat designations. *Id.* at 3. The report also criticizes the scientific uncertainty of listings, and the recovery priorities set by the FWS despite the actual probability of recovery. *Id.* at 3, 6.

²²⁸ See Bob Irvin, *Pombo's "All-Out Assault"*, SACRAMENTO BEE, Feb. 22, 2006, available at <http://dwb.sacbee.com/content/opinion/story/14217607p-15043607c.html>.

Lincoln Chafee (R-RI) and minority Committee members including Hillary Rodham Clinton (D-NY) and Barack Obama (D-IL) opposed the passage of the Bill. With the Democratic takeover of the Congress in the fall of 2006 and Representative Pombo's failed 2006 re-election campaign, the Bill appears to be dead, at least for the time being. Nevertheless, controversy over the ESA and a variety of efforts to reauthorize the Act continue.

V. THE SOURCES OF TENSION

EPA's failure to comply with the ESA is not surprising given that the conflicting goals, standards, areas of focus, and risk reduction mechanisms of the two statutes, create a situation in which compliance is difficult. As a result, EPA has implemented its pesticide program in a manner that has led it to abdicate its ESA responsibilities.

A. *Conflicting Goals*

To understand the conflicts between the ESA and FIFRA fully, it is helpful to consider the political and historic atmosphere in which each statute was enacted. The ESA emerged during the early rise of the environmental movement, against a backdrop of intense public concern over the health of the environment and the dwindling populations of many wildlife species. During the 1960s, two modest attempts to protect endangered species were enacted by Congress.²²⁹ Congress passed the more comprehensive ESA in 1973 with a clear objective to "act early enough to save a vanishing species."²³⁰ The ESA sought ambitiously to conserve, protect and encourage propagation of endangered species through federal action and the encouragement of similar programs at the state level.²³¹ Unfortunately, neither the statute nor the legislative history provides detailed guidance on the section 7 consultation process.²³² Although the Senate report provided analysis of the consultation requirements, it did not elaborate or provide further insight as to what "steps [are required] to 'insure that actions authorized, funded or carried out' by it do not jeopardize the continued existence of any such species."²³³ Similarly, one of the few ESA sections not discussed in the Conference Report was section 7, and as a result there is little guidance from either the House or Senate as to its requirements.²³⁴ Nevertheless, there was

²²⁹ The 1966 precursor to the ESA was limited to establishing a federal program for conservation and providing for species protection on federally-owned land. S. COMMERCE COMM., S. REP. NO. 93-307, at 2 (1973), *as reprinted in* 1973 U.S.C.C.A.N. 2989, 2990. The 1969 precursor to the ESA focused on banning the importation of endangered species or endangered species' products. *Id.* at 2, 1973 U.S.C.C.A.N. at 2991. These early Acts, although important in their own right, did not satisfy the public desire for strong species protection.

²³⁰ *Id.* at 3, 1973 U.S.C.C.A.N. at 2991.

²³¹ *Id.* at 1, 1973 U.S.C.C.A.N. at 2989-90.

²³² *Id.*

²³³ *Id.* at 9, 1973 U.S.C.C.A.N. at 2997.

²³⁴ H.R. CONF. REP. 93-740 (1973), *as reprinted in* 1973 U.S.C.C.A.N. 3001.

evidence in the legislative history that the ESA was intended to “substantially amplify the obligation” of federal agencies to carry out the purposes of the Act.²³⁵ Moreover, the Supreme Court has interpreted the legislative history of section 7 of the ESA as giving greater importance to the protection of species than other agency missions.²³⁶ Thus, although the ESA can and has been interpreted as providing aggressive protections, Congress’s exact intent was not articulated clearly at the time of passage.

Unlike the ESA, the 1972 FIFRA amendments, which form the backbone of the current FIFRA, were not enacted as a new freestanding environmental protection initiative. Instead, the amendments were an attempt to impose an environmental component on a sixty-year old statute, the Insecticide Act of 1910,²³⁷ designed to protect consumers from ineffective insecticide products and fraudulent claims about such products. Environmental concerns did not play any role in the 1910 Act or its amendment in 1947. In fact, when President Truman signed the 1947 legislation,²³⁸ the *New York Times* described it as a law to “color poisons.”²³⁹ At the time of its passage, the primary groups concerned about pesticides were farmers (whose interests in government were advocated by the USDA). Passage of the Act and the 1947 amendments was uncontroversial in large part because there were few opponents, and much less well-organized opponents, of the concept of widespread pesticide application.²⁴⁰

Pesticide regulatory reform moved slowly, partially as a result of the makeup of the primary regulating congressional committees.²⁴¹ Of particular importance was James Whitten, who chaired the subcommittee on agricultural appropriations for the House Appropriations Committee.²⁴² Whitten was called the “Permanent Secretary of Agriculture,” and held this post from 1947 until 1992.²⁴³ He encouraged the USDA to pursue the means necessary to eradicate pests and advocated widespread pesticide application to accomplish this goal.²⁴⁴

The first backlash against unremitting pesticide application was seen in the late 1950s, in response to federal government campaigns against the gypsy moth and fire ants.²⁴⁵ The most dramatic public backlash began in

²³⁵ *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 183-84 (1978) (citing 119 CONG. REC. 42,913 (daily ed. Dec. 20, 1973) (statement of Rep. Dingell)).

²³⁶ *Id.* at 185.

²³⁷ Act of Apr. 26, 1910, ch.191, 36 Stat. 331 (repealed 1947).

²³⁸ Act of Oct. 21, 1947, 61 Stat. 163.

²³⁹ CHRISTOPHER J. BOSSO, *PESTICIDES & POLITICS* 21 (1987).

²⁴⁰ *Id.* at 34 (noting that few groups understood the potential effects of widespread use).

²⁴¹ *Id.* at 65-70 (describing how the seniority of Southern Democrats, who were generally against pesticide regulation, allowed them to lead various committees).

²⁴² *Id.* at 67.

²⁴³ *Id.*

²⁴⁴ *Id.* at 69.

²⁴⁵ *Id.* at 81-94. Several groups complained about the gypsy moth program’s use of DDT suspended in oil, which led to high fish kills in northern states. Similarly, groups were concerned about the application of Dieldrin in high concentrations to fight the so-called fire ant “threat.”

1962 with *The New Yorker's* publication of three articles by Rachel Carson, arguing that pesticides were over-used and that their effects were poorly understood.²⁴⁶ The resulting public debate pitted scientist against scientist, who argued over the benefits and hazards of pesticide usage.²⁴⁷ In the following years, pesticide regulation and reform came to the fore, and resulted in the 1964 FIFRA amendments, which required registration numbers for pesticides and eliminated the "protest registration," which had allowed chemical makers to keep a product on the market while protesting cancellation.²⁴⁸ Also important was the fact that environmental concerns entered into the debate in 1964, though they had had no place in the 1947 legislation.²⁴⁹

The Act, which would become FIFRA, was significantly amended in 1972. FIFRA came into being in its current form after the nation's experiences with DDT and other toxic pesticides.²⁵⁰ The effort to reform FIFRA responded in part to the delays EPA faced when it sought removal of certain pesticides from the market.²⁵¹ Although the 1972 FIFRA amendments brought environmental concerns into the purview of pesticide regulation, such concerns were more of an afterthought to an already established licensing program designed to protect consumers from ineffective and fraudulent products. In fact, the legislative history of the 1972 FIFRA makes clear that the amendments were not seen primarily as environmental in nature, but instead were seen as a balancing between the importance of pesticides to securing the nation's food supply and the risks pesticides pose to humans or the environment.²⁵² Although Congress recognized the risks of pesticides, which are by definition intended to kill or disrupt living organisms, Congress never intended, nor did it design, FIFRA to reduce pesticide use.²⁵³

As is evident from FIFRA's legislative history, the Act started as a classic consumer protection act aimed at ensuring that pesticide products were not mislabeled or adulterated. Although the 1972 revisions to the Act brought environmental considerations into the FIFRA's purview, such considerations were never the Act's primary focus. Moreover, it is clear from FIFRA itself, as well as its legislative history and judicial interpretation, that economic and social considerations, such as concerns for farmer profit, desire for cheap and safe food available to consumers, and concerns over pest vector-borne public health diseases, are equally important to environmental considerations under the Act.²⁵⁴ Moreover, FIFRA is not designed to reduce

²⁴⁶ *Id.* at 115.

²⁴⁷ *Id.* at 121.

²⁴⁸ *Id.* at 127.

²⁴⁹ *Id.*

²⁵⁰ S. REP. NO. 92-970, at 9 (1972), as reprinted in 1972 U.S.C.C.A.N. 4092, 4093 (discussing the need for reforming the federal schematics for pesticide regulation).

²⁵¹ *Id.* at 9, 1972 U.S.C.C.A.N. at 4094.

²⁵² S. REP. NO. 92-838, at 4 (1972), reprinted in 1972 U.S.C.C.A.N. 3993, 3995-96.

²⁵³ Donald T. Hornstein, *Lessons from Federal Pesticide Regulation on the Paradigms and Politics of Environmental Law Reform*, 10 YALE J. ON REG. 369, 392 (1993).

²⁵⁴ See *McGill v. EPA*, 593 F.2d 631, 635 (5th Cir. 1979) (providing that FIFRA is aimed not only at environmental goals, but also the economic interests of farmers and consumers).

pesticide usage or to encourage the use of lower risk pesticides. FIFRA and the ESA were adopted in response to very different problems and in different political climates. Thus, the statutes seek to achieve different, and sometimes conflicting, goals.

B. *Conflicting Standards*

One of the most significant conflicts between the ESA and FIFRA is their different standards governing regulatory action. FIFRA involves a balancing of the risks associated with the use of the pesticide against the social and economic benefits to society accruing from its use. The ESA, on the other hand, prohibits “takes” of threatened and endangered species, eliminating from consideration any economic or other benefits from the proscribed activities. The section 7 consultation mandates ensure that federal agency actions do not jeopardize the continued existence of a threatened and endangered species. Accordingly, the very terms of the statutes have created a catch-22 situation for EPA. If EPA follows the FIFRA cost-benefit standard, it may approve a pesticide that jeopardizes a threatened or endangered species. Accordingly, it may be in violation of the ESA. On the other hand, if EPA chooses to comply with the ESA and deny or severely restrict a registration, EPA could be vulnerable to legal challenges for not properly implementing its FIFRA mandate.

Moreover, because pesticides are by their very nature intended to kill organisms in the environment, and because there is habitat for more than 1800 listed species throughout a wide and vast range of territory of the United States, strict compliance with the ESA under FIFRA as it now stands likely would require EPA to ban or severely restrict a large majority of registered pesticides. Such an interpretation would lead to the ESA virtually swallowing up FIFRA. This dilemma is likely a large contributor to EPA’s ongoing reluctance to comply with the ESA in implementing its pesticide registration program. The only reconcilable approach under the existing laws appears to be to impose detailed label instructions for each pesticide in each geographic location in which that pesticide may adversely affect a listed species through the FIFRA labeling mechanisms. Unfortunately, this approach is extremely unwieldy and, as described above, could result in lengthy and complex label instructions that are unlikely to be obeyed. Consequently, the existing FIFRA structure is simply a poor fit with the mandates of the ESA.

It should be noted that FIFRA does provide EPA with limited express authority to take certain regulatory action to protect listed species. Specifically, as described above, section 6(c) of FIFRA authorizes EPA to suspend the registration of a pesticide “if necessary to prevent an *imminent hazard* during the time required for a cancellation” proceeding.²⁵⁵ FIFRA section 2(l) defines the term *imminent hazard* to include, among other things, a “sit-

²⁵⁵ 7 U.S.C. § 136d(c)(1) (2000).

uation . . . when the continued use of a pesticide during the time required for cancellation proceeding . . . will involve unreasonable hazard to the survival of a species declared endangered or threatened by the Secretary pursuant to the Endangered Species Act of 1973. . . ."²⁵⁶ Under this standard, EPA clearly has the authority to suspend a registration to address hazards to listed species. Although Congress included a clear expression of its intent that risk to listed species is a basis for suspending a pesticide, Congress did not express any such intent regarding how such risks should be addressed in registration or cancellation decisions. While EPA clearly has the authority to "consider" risks to listed species under the "unreasonable adverse effects" standard for registration and cancellation, Congress has not indicated that such risks in themselves would provide a basis for registration denial or cancellation, as it did with regard to suspension.

As with the ESA, the MBTA's standards are not easily reconcilable with those of FIFRA. The MBTA imposes a strict liability standard for "takes" of migratory birds.²⁵⁷ Courts have applied this strict liability standard to pesticide-related bird deaths.²⁵⁸ This strict liability standard is in direct conflict with the explicit balancing decisions required for FIFRA pesticide registration. As one author has stated, "regular repeated bird kills might . . . [be] tolerated had the benefits of the pesticide in question been greater."²⁵⁹ Moreover, as with the ESA, and as others have noted, pesticide labeling under FIFRA does not protect birds from poisoning.²⁶⁰

C. *Conflicting Geographic and Temporal Focus*

In addition to the conflicting standards of the ESA and FIFRA, the differing focuses of the two statutes create incompatibility. FIFRA creates a national registration process, while the ESA, which is geographically and temporally focused, evaluates individual actions' impact on a specific habitat and species. The ESA is concerned with preventing injury to individual members of each listed species and preventing significant modifications to their habitats. The ESA is also concerned with preventing injury to designated critical habitats, which by their very nature are geographically defined.

On the other hand, under the current FIFRA, a decision on whether to register or cancel a pesticide is made on a nationwide basis without any real consideration of specific geographic or temporal factors. For example, a particular pesticide may easily meet the cost-benefit registration standard because on a nationwide basis the benefits of the pesticide exceed the envi-

²⁵⁶ *Id.* § 136(l).

²⁵⁷ See Mineau, *supra* note 173, at 330.

²⁵⁸ *United States v. FMC Corp.*, 572 F.2d 902, 908 (2d Cir. 1978); *United States v. Corbin*, 444 F.Supp. 510, 536 (E.D. Cal. 1978).

²⁵⁹ Mineau, *supra* note 173, at 332.

²⁶⁰ See *id.* at 337-38. Mineau concludes that because the MBTA's provisions relate only to direct, lethal pesticide exposures, they do not fully address the problem. *Id.* at 335. The author concludes that pesticide labeling on its own fails to protect migratory birds. *Id.* at 337-38.

ronmental or health costs. However, this decision ignores the fact that the pesticide may pose substantial risks to a particular listed species that nests in a particular geographic location during certain times of the year. Although in theory, such geographic and temporal concerns could be addressed through label restrictions directing users not to use the pesticide in certain geographic locations during certain times of the year, the reality is that they would be extremely unwieldy. It would be extremely unlikely that EPA could require such detailed label restrictions on every pesticide product to address every geographic or temporal restriction needed to protect every listed species in the entire United States. Moreover, even if EPA did require such detailed label restrictions, it is unlikely that a pesticide user would take the time to read these complex restrictions, determine which if any restrictions apply to the user's intended use in a given location and at a particular time for each and every listed species that may be affected, let alone actually comply with such restrictions. Moreover, monitoring users to ensure they comply with the label restrictions and enforcing against those who did not would be virtually impossible. Accordingly, the conflicting focuses of the statutes contributed to EPA's difficulty in finding a workable way to comply with the wildlife protection laws.

D. Conflicting Methods

Finally, the ESA and FIFRA are inconsistent in that they provide for very different risk reduction methods. Under the ESA, the FWS or NMFS will issue, as part of a BiOp, reasonable and prudent alternatives to avoid jeopardy and an incidental take statement, which identifies actions that will not be considered to be prohibited takings. The incidental take statement specifies the reasonable and prudent measures that must be implemented to minimize risk of takes. These measures typically are very detailed, species-specific, and geographically and temporally defined. As described above, FIFRA's mechanism for regulating use of pesticides to reduce risk is label restrictions. Because of the large number of reasonable and prudent alternatives and measures likely to be recommended by the Services for virtually every pesticide as well as the complexity of many reasonable and prudent alternatives, implementing them through labeling is impracticable and unlikely to result in widespread compliance.

VI. THE SOLUTION

Due to the conflicting nature of many aspects of the ESA and FIFRA, the best chance of resolving the problem is through legislative reform. As described above, although the statutes conflict, they are not inherently irreconcilable. This section proposes several legislative changes that would resolve the problem. As discussed in detail below, the proposed revisions to FIFRA include (1) changing FIFRA's unreasonable adverse effects standard

to an "overriding benefits" standard; (2) requiring registration applicants to demonstrate actual benefits of the pesticide; (3) mandating that EPA consider the comparative risks and benefits of alternative pest control methods, including non-chemical pest control, when making registration and cancellation decisions; (4) providing EPA with the authority to require localized decision-making to take into account geographic and temporal considerations of the particular pesticide use; and (5) mandating that EPA expand its data requirements to address a wider array of risks and costs of pesticide use. With the proposed statutory revisions, EPA would have the authority and statutory tools necessary to provide greater protection to wildlife without creating the economic, agricultural, and public health impacts that would result from large numbers of pesticide cancellations.

The basic standards and structure of FIFRA have been in existence without significant change since 1972. Experience has shown that many of its provisions are unworkable.²⁶¹ As described above, the judiciary's attempt to resolve the conflict between the statutes is limited by the legislative mandates in the statutes themselves.

Congress enacted the ESA approximately one year after FIFRA, and it could thus be argued that Congress intended the more draconian provisions of the ESA to supersede the cost-benefit standard of FIFRA with regard to pesticides that adversely affect listed species. However, Congress has never made its intent clear. Legislative amendment of FIFRA could not only clarify that the cost-benefit standard of FIFRA does not trump the ESA standard, but could also set forth a clear articulation of how Congress intends the two statutes to be reconciled.

In a previous article, I proposed a number of changes to FIFRA to make it more compatible with the theory of eco-pragmatism and to provide greater ecological protection.²⁶² Eco-pragmatism is a framework for environmental decision-making developed by Professor Daniel Farber as a way to achieve a workable middle ground between absolutist environmental protection and strict cost-benefit balancing. Eco-pragmatism provides a rationale for moving beyond the exclusive goal of economic efficiency, focusing instead on

²⁶¹ Despite the significant human health and environmental impacts that result each year from the release of pesticides into the environment and the complexity of pesticide regulation under FIFRA, legal scholars have paid very little attention to pesticide regulation. One relatively recent article analyzing FIFRA proposes a revised approach to pesticide regulation, shifting away from a risk-based effects analysis to a cause-based approach. Hornstein, *supra* note 253, at 372 (describing environmental regulatory theories; challenging the individual yet conceding the aggregate benefits of pesticide use; and proposing statutory reforms, including integrated pest management and government oversight to assist farmers). Beginning with this framework, Hornstein then discusses FIFRA, noting at the outset that despite the fact that pesticides are inherently toxic, FIFRA is not designed to reduce pesticide usage.

²⁶² For a complete discussion of the application of eco-pragmatism to FIFRA, see Angelo, *supra* note 59, at 112-44. For a discussion of this theory, see generally DANIEL A. FARBER, *ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD* (1999).

attempting to reduce human and environmental risks to the extent feasible.²⁶³ In my previous article, I concluded that a number of revisions were needed to make FIFRA more eco-pragmatic. First, the prevailing interpretation of FIFRA's "unreasonable adverse effects standard" as mandating strict cost-benefit balancing should be readjusted to be more of a feasibility-based "overriding benefits" standard, as contemplated by FIFRA's drafters. Second, registration applicants should be required to demonstrate the benefits of a pesticide by demonstrating efficacy and by comparison to other available pest control methods. Third, EPA should be given the authority to require localized decision-making about which pesticide is best and to determine the maximum level of environmental protection that is feasible for any given situation. Fourth, to account for the uncertainties and long-term effects of pesticides on the environment, a low discount rate should be used in conducting the open-ended balancing analysis. Fifth, in order to ensure that pesticides released into the environment do not undermine a baseline of ecological integrity, FIFRA's data requirements should be strengthened to require information about potential effects on a wider variety of wildlife species, as well as ecological services such as pollination, decomposition, and nitrogen fixation. Finally, an adaptive management approach should be developed to allow for flexibility and adjustments to the choice of pest control method appropriate for a given situation, and to allow for fine-tuning and adjustment as circumstances change and new information becomes available.

Many of those proposed changes would not only be consistent with eco-pragmatic theory, but would also go a long way toward reconciling the conflicting goals, standards, and mechanisms of FIFRA and the ESA. One of the most important revisions is a change in the standard for pesticide registration. EPA's cost-benefit balancing approach is not necessarily dictated by FIFRA. Nothing in the language of FIFRA mandates a strict cost-benefit balancing; FIFRA merely directs EPA to "take into account" economic and social as well as environmental considerations.²⁶⁴ As Professor William Rodgers has described it, Congress intended the "unreasonable adverse effects" language to be an environmentally stringent standard for registration.²⁶⁵ The Senate Commerce Committee, which drafted the language, described it as not tolerating any adverse effects "unless there are overriding benefits from the use of a pesticide."²⁶⁶ It thus appears that the Senate drafters intended that registration would be permitted only where any environ-

²⁶³ See generally SHAPIRO & GLICKSMAN, *supra* note 59 (providing much of the justification for a pragmatic approach to environmental law that Farber's book was criticized for lacking).

²⁶⁴ 7 U.S.C. § 136(bb) (2000) (defining the term "unreasonable adverse effects on the environment" as "taking into account the economic, social and environmental costs and benefits of the use of any pesticide").

²⁶⁵ RODGERS, *supra* note 59, at 451.

²⁶⁶ *Id.* (quoting S. COMM. ON COMMERCE, FEDERAL ENVIRONMENTAL PESTICIDE CONTROL ACT OF 1972, S. REP. NO. 92-970, at 11 (1972)).

mental or human health risks were outweighed by “overriding benefits,” such as where a particular pesticide is important to fighting a significant public health problem and where other less risky control alternatives are not available or are too costly, where a particular pesticide is necessary to the maintenance of a segment of agriculture, or where non-chemical or less risky alternatives are not available and to grow the crop without the pesticide would result in severe economic losses or dramatically increased food prices. Nevertheless, EPA’s cost-benefit balancing approach has been used for decades and endorsed by numerous administrative and judicial decisions.²⁶⁷ Such a revision would in effect force EPA to apply the standard originally contemplated by the Congress in enacting FIFRA in 1972. Subsequent to the DDT cancellation, EPA brought a number of cancellation and suspension actions, through which the agency’s interpretation of the statutory standard “unreasonable effects on man and the environment” was further developed.²⁶⁸ These cases cemented EPA’s interpretation of FIFRA as containing a cost-benefit balancing standard, rather than the open-ended balancing standard that, at least arguably, it was intended to be. Accordingly, if a pesticide poses a great economic benefit, high risks to vulnerable species, including listed species, will be tolerated. Under this approach, even a very high risk pesticide may not trigger cancellation if the economic benefits to be achieved are very high. Thus, the manner in which EPA applies the “unreasonable adverse effects” standard as a strict cost-benefit standard is not sufficient to protect species. A legislative fix is warranted to set the standard that would apply when EPA is deciding whether to register or cancel a pesticide that may have adverse effects on a listed species.

To accomplish the species protection goals of the ESA, while still acknowledging the critical role that some pesticides play in providing for a safe and affordable food supply, or in protecting the public from serious diseases such as West Nile Virus that are carried and spread through insect or other pest vectors, an alternative standard to the absolutist standard of the ESA or the cost/benefit standard of FIFRA is required. The most logical FIFRA revision would be to return to the standard that the framers of the 1972 FIFRA amendments apparently intended, that high-risk pesticides may only be registered if there are overriding public health, social or economic benefits that justify registration. If FIFRA were amended to make clear that only overriding benefits could outweigh significant environmental risks, then potential registrants would face a more stringent standard and pesticides that posed significant risk would not routinely be registered.

²⁶⁷ See *Envtl. Def. Fund, Inc. v. EPA*, 548 F.2d 998, 1003 (D.C. Cir. 1976) (affirming cancellation of certain uses of heptachlor and chlordane); *In re Chapman Chem. Co.*, 1 E.A.D. 199 (EPA 1976) (canceling certain uses of mercury in pesticides based on a finding that the risks of continued use outweighed the benefits); *In re Protexall Prods., Inc.*, 2 E.A.D. 854 (EPA 1989) (describing the registrant’s burden in challenging a proposed cancellation as requiring a showing that the “benefits of continued use justify the risks”).

²⁶⁸ See sources cited *supra* note 267.

Using this standard, economic and social benefits derived from use of the pesticide would be considered, but would not be the ultimate determining factors in deciding whether a pesticide should be registered or not. Instead, for a pesticide that is likely to result in jeopardy to threatened or endangered species to be registered or to maintain its registration, the benefits of the use of the pesticide must be "overriding." Overriding benefits would include the necessity of the pesticide to protect human health from a serious public health threat (such as from an epidemic of an insect-borne disease), or its necessity to the production of important food or fiber crops. The mere fact that crop production would be more costly without the particular pesticide, however, would not in itself be considered an overriding benefit warranting the registration of the pesticide.

FIFRA must be changed not only to impose the overriding benefit standard, but also to direct EPA to determine the actual benefits of a pesticide prior to registration. Obviously, in order to make a determination of whether a particular pesticide will provide overriding benefits, it will be necessary for EPA to actually conduct benefits analysis. At least with regard to the registration of pesticides, EPA's analysis is not a true cost-benefit analysis because it does not require applicants to demonstrate the efficacy or other benefits of the pesticide. As discussed above, FIFRA does not mandate, and EPA has opted not to require the efficacy data to be provided when registering a pesticide. EPA has, by rule, waived all requirements to submit efficacy data except in circumstances where there is a claim that the pesticide controls pest microorganisms that pose a threat to human health or vertebrates that may directly or indirectly transmit diseases to humans.²⁶⁹ Moreover, at the time of making the registration decision, EPA does not determine whether more efficacious alternatives, including non-chemical alternatives or other lower risk alternatives, exist.²⁷⁰ Similarly, EPA does not require applicants to demonstrate that the pesticide is more beneficial, either environmentally or economically, than other existing pesticides or pest control methods available to control the target pest. Instead, EPA acts on the assumptions that a pesticide manufacturer would not incur the costs of developing and marketing a pesticide if the pesticide did not work, and that any pesticides that are not beneficial will be eliminated through market forces.²⁷¹ Consequently, pesticides are registered without any finding that they work for their intended purposes, that they are necessary for addressing particular pests, or that existing chemical or non-chemical alternatives are unavailable

²⁶⁹ 40 C.F.R. § 158.640 (2007). EPA has reserved the right to require, on a case-by-case basis, submission of efficacy data for other pesticides.

²⁷⁰ Many safe and effective alternatives to chemical pesticides are available, including botanicals, microbials, minerals, beneficial insects, organic farming practices and cultural controls. See CBD Report, *supra* note 14, at 60.

²⁷¹ Regulations for the Enforcement of the Federal Insecticide, Fungicide and Rodenticide Act, Proposed Registration, Reregistration and Classification Procedures, 47 Fed. Reg. 40,659, 40,661 (Sept. 15, 1982).

or infeasible. Because virtually no chemical pesticide is without at least some risk, it is probable that at least some pesticides are registered that pose some risks, but have not been demonstrated to have any significant environmental, economic or societal benefit.

EPA does not consider the benefits of the pesticide and whether there are viable alternatives available until it begins to consider whether to cancel that pesticide's registration. In determining whether to proceed with cancellation, EPA must make a threshold determination that the risks posed by a pesticide are significant. Only after such determination is made does EPA proceed to a full cost-benefit analysis, considering, among other things, the economic and social benefits associated with the use of the pesticide. However, when conducting this benefits analysis, EPA's consideration of alternatives is typically limited to looking at other registered pesticides for the same use (which are assumed to be efficacious if they are registered). EPA typically does not undertake a comprehensive analysis of non-chemical alternative pest control techniques such as cultural control, biological control or organic farming practices. Moreover, when considering the availability of existing chemical alternatives, EPA does not conduct a comparative risk analysis of the pesticide proposed for cancellation against existing available pesticides. As a result, the order in which pesticides are identified for cancellation determines which pesticide will remain registered, regardless of the relative risks of such pesticides. For instance, a moderate risk pesticide may be cancelled because other alternatives exist. As more pesticides are cancelled over time, however, the benefits of the remaining registered pesticides grow. Thus, eventually the benefits of the "last pesticide standing" will be very high because no alternatives will exist at that point, and the benefits of that pesticide will very likely outweigh the risks, even if the risks are relatively high. Accordingly, this pesticide will retain its registration even though it has higher relative risks than previously cancelled pesticides, simply by virtue of it being the last pesticide in the queue considered for cancellation. This result could be solved by requiring a true benefits analysis for each registered pesticide, including a consideration of non-chemical alternatives, and conducting a relative risk analysis that compares the risks of pesticides targeted at the same pest. Without a comparative analysis of alternatives, it is impossible to determine whether a particular pesticide has benefits (other than financial benefits for the manufacturer). If lower-risk and similarly efficacious alternatives to a particular pesticide are available and economically and technically feasible, then the pesticide does not provide the type of overriding benefits that would justify continued registration and continued risk.

It is worth noting that although EPA does not routinely consider the relative risks of alternative pesticides when making registration or cancellation decisions, it has attempted to encourage the development and registration of lower-risk pesticides as a matter of policy. For example, in 1997, EPA issued a notice setting forth its policy for the expedited review of re-

duced-risk conventional pesticides and biological pesticides.²⁷² The policy is intended to encourage the development, registration and use of lower-risk pesticide products “which would result in reduced risks to human health and the environment when compared to existing alternatives.”²⁷³ To accomplish this goal, EPA provides the incentive of an expedited registration review for pesticides that may reasonably be expected to accomplish one or more of the following: “(i) reduce the risks of pesticides to human health; (ii) reduce the risks of pesticides to nontarget organisms; (iii) reduce the potential for contamination of groundwater, surface water, or other valued environmental resources; and (iv) broaden the adoption of integrated pest management strategies”²⁷⁴ Nevertheless, although EPA does provide some incentives to encourage the development of lower risk pesticide, EPA continues to interpret and implement the “unreasonable adverse effects” standard in a way that not only fails to encourage the use of lower risk pesticides, but also may in some cases actually discourage lower risk products.

Another change necessary to ensure species protection is a reevaluation of pesticide registration data requirements to address more wildlife and ecological effects. EPA’s analyses of the “costs” of pesticide use, although more complete than analyses of benefits, do not fully address the array of environmental or economic harms posed by pesticides.²⁷⁵ Environmental and economic costs that EPA does not typically address sufficiently in its cost-benefit analyses include domestic animal poisonings and contaminated products, destruction of beneficial natural predators and parasites, honeybee and wild bee poisonings and reduced pollination, crop and product loss, ground and surface water contamination, fishery losses, adverse effects on wild birds and mammals, adverse effects on microorganisms and invertebrates, and adverse effects on ecosystem services. These costs are substantial and if considered could radically alter the outcome of the cost-benefit analysis. For example, in 1993, Cornell Professor David Pimentel estimated that if the full environmental and social costs of pesticide use, including indirect effects, are taken into account, they would be approximately \$8 billion/year.²⁷⁶ Further, Pimentel notes that because many additional costs of pesticide use are either not well understood or difficult to

²⁷² This policy was developed partially in response to the 1996 Food Quality Protection Act mandates to develop procedures and guidelines for expedited pesticide review, and supersedes EPA’s prior reduced-risk criteria. EPA, Guidelines for Expedited Review of Conventional Pesticides Under the Reduced-Risk Initiative and for Biological Pesticides’ P.R. Notice 92-3 (Sept. 4, 1997) [hereinafter EPA Guidelines for Expedited Review], available at http://www.epa.gov/PR_Notices/pr97-3.html.

²⁷³ *Id.*

²⁷⁴ 7 U.S.C. § 136a(c)(10)(B) (2000). EPA has further interpreted these criteria to develop a list of factors that will most significantly contribute to EPA’s decision to grant reduced-risk status. EPA Guidelines for Expedited Review, *supra* note 272, at 3-4.

²⁷⁵ See generally Pimentel, *supra* note 18, at 47-73.

²⁷⁶ *Id.* at 72.

quantify, the true cost of pesticide use may be substantially higher than his \$8 billion estimate. These issues must enter into EPA's analysis.²⁷⁷

One step toward improving EPA's protection of wildlife would be to revise the data requirements to better evaluate the full range of risks to wildlife species, including ESA listed species and those protected by other wildlife protection laws.²⁷⁸ Moreover, to the extent that EPA's current data requirements do include some studies designed to evaluate risks to fish, wildlife, aquatic organisms, and non-target insects, EPA's primary purpose in requiring such studies is not to determine whether to register a pesticide product, but instead is to "provide data which determines the need for (and appropriate wording for) precautionary label statements to minimize the potential adverse effects to nontarget organisms."²⁷⁹ As described above, however, precautionary label statements cannot in themselves provide sufficient protection against the environmental harms resulting from pesticides use. A better way to regulate pesticide use is needed.

Improved data requirements themselves will not result in reduced risks if EPA continues to use data merely to provide warnings and precautions on product labels. Instead, the improved data should be used to make unreasonable adverse effects determinations required at the time of registration. EPA should refuse to register (or at least demand appropriate risk reduction measures for) a pesticide if the data indicate the pesticide poses a high level of risk to wildlife.

Perhaps the most significant proposed change to FIFRA is to create a mechanism for regulating pesticide use based on localized decision-making.²⁸⁰ Such decision-making can take into account geographic location of species, migratory patterns, nesting and breeding patterns, and other local

²⁷⁷ *Id.*

²⁷⁸ Currently, EPA's data requirements for pesticide registration only address some of these concerns. The minimum data requirements for registration, experimental use permits, and reregistration are set forth in 40 C.F.R. § 158 (2007). More detailed standards for conducting tests, guidance on evaluation, and reporting of data and additional guidance are provided in a series of advisory documents that EPA makes available to applicants and the public. *See id.* § 158.20(c). In its data requirement rules, EPA identifies some data as required and other data as "conditionally required." Conditionally required data are required only if the product's proposed pattern of use, results of other tests, or other factors meet the criteria specified in the rules. *See id.* §§ 158.25(a), 158.101. EPA's rules also allow certain data requirements to be waived if they are not applicable to the particular pesticide or use. *See id.* § 158.25(b) (setting forth policy on flexibility and waiver); *id.* § 158.35 (describing the flexibility in data requirements); and *id.* § 158.45 (discussing waiver of data requirements). In addition, EPA's rules set forth varying data requirements for minor use of a pesticide — i.e., used on a minor crop — and biochemical and microbial pesticides. *See id.* §§ 158.60 and 158.65, respectively.

²⁷⁹ *Id.* § 158.202(h)(1).

²⁸⁰ Professor J.B. Ruhl has also noted that one of the most significant shortcomings of FIFRA is its lack of an adequate mechanism for regulating pesticide use. *See Ruhl, supra* note 25, at 310-11. Contrasting this regulatory system with those found under the Clean Water Act and Clean Air Act, Ruhl argues that the system, with its lack of permits, performance standards, public reporting requirements or pesticide monitoring system, lacks any comprehensive framework for regulating pesticide use in particular places or at particular times. *Id.* at 311.

conditions. Currently, FIFRA does not provide a mechanism for localized decision-making regarding the risks of certain pesticides and for deciding if their use should be precluded in certain areas or in certain manners.²⁸¹

A shift to localized decision-making could be carried out by a permitting system for large-scale releases of pesticides into the environment. An expert regulatory agency (either federal or state) could evaluate local conditions and then impose Service-recommended reasonable and prudent alternatives from a BiOp as permit conditions for the application. Such permit conditions could include buffers around habitat, water bodies, and nests, during certain times of years to avoid migration, breeding or nesting, and restrictions on spraying under certain weather conditions (e.g., high winds or heavy rain), and any other condition that would reduce the risk of harm to listed species or migratory birds.

Once a pesticide is registered under the proposed overriding benefits standard, agency oversight must be required to determine whether a particular pesticide should be allowed to be used in a particular location at a particular time and in a particular manner. This “where, when and how” determination is necessary to ensure that even pesticides that may have overriding benefits, and thus, are appropriate for nationwide registration, are not used in places, at times or in ways that jeopardize listed species or their habitats in particular locations. This localized decision-making could be accomplished through a number of different mechanisms, including a permitting system or the prescription approach that I have proposed elsewhere.²⁸² Such a localized decision-making mechanism will enable EPA or the States to implement the reasonable and prudent alternatives recommended by the Services to avoid jeopardy and reduce risk to listed species. The Services’ BiOps will be able to contemplate such a system and therefore provide for appropriate permit conditions and use limitations that will minimize risk, and also provide incidental take statements to provide legal protection for the limited takes that cannot be avoided. The consideration of local factors in determining whether a specific pesticide use should be permitted in a

²⁸¹ Ironically, although FIFRA does not contain a mechanism for consideration of local conditions when evaluating risks posed by a pesticide, it does authorize states to take into consideration “special local needs” to issue state registrations for pesticide uses that are not federally registered. 7 U.S.C. § 136v(c) (2000).

²⁸² In addition to a permitting system, there are a variety of potential mechanisms available for achieving local decision-making regarding actual pesticide use. As I described in my previous article, one such mechanism to authorize state or local government officials to make case-by-case, or season-by season decisions on the actual use of pesticides. For example, a local official could be required to evaluate the local conditions, including the particular pest concerns, the climatic conditions, the presence of listed species, and a wide variety of local environmental factors, before “prescribing” that a particular pesticide be used. I analogized this idea to that of a medical doctor prescribing that a patient take a particular medication. Prior to issuing such a prescription, the doctor would consider a number of factors such as the patient’s overall health, other medical conditions, other medications the patient is taking, any allergies or sensitivities the patient may have to certain types of medications, the patient’s age, the patient’s health and lifestyle objectives and the patient’s willingness to accept certain risks to achieve such goals.

specific location at a specific time, and if so under what conditions, is of particular import. The benefit of some type of prior approval of pesticide use is that decisions can be made based on local factors such as the presence of threatened, endangered or otherwise rare or sensitive species, soil conditions, climatic conditions, proximity to environmentally-sensitive lands, types of crops grown, types of farming practices used, severity of pest infestations, or other relevant site-specific factors.

Currently, FIFRA does not provide for a permitting or other system to require prior approval of pesticide use. Although under FIFRA states are permitted to regulate and even ban federally-regulated pesticides, most states do not have pesticide permitting systems that address the use of pesticides under localized conditions.²⁸³ In fact, most states do not require users to obtain site-specific permits before a pesticide can be applied, even for large scale agricultural pesticide application.²⁸⁴ Most states do not require anyone with specialized knowledge of the presence of threatened or endangered species or rare or sensitive ecosystems to make any evaluation prior to the release of pesticides into the environment. Any amendment to FIFRA to require a permitting system for large-scale application of pesticides would necessarily require the establishment of a federal permitting system, wherein states may choose to assume authority for the permitting program, as in the cooperative federalism regulatory systems established in other federal environmental laws, such as the Clean Water Act.

The benefit of the permitting system over EPA's county bulletin system is that an expert reviewer will evaluate each application to determine the appropriate conditions to be placed on the permit. The farmer will not be required to know or research the locations of habitats, nests, or breeding grounds, the migration routes, or the migration, breeding, or nesting seasons of every listed species or migratory bird that may be affected. Even if a pesticide applicator with the best intentions diligently seeks out the county bulletin and attempts to fully comply with it, she may not possess the necessary expertise to determine each location and timing of nesting, breeding, migration or other behavior of each listed species and migratory bird that

²⁸³ Although FIFRA permits states to have permitting or other regulatory programs related to pesticides, FIFRA preempts states from imposing their own labeling requirements, and requires that all pesticides bear the EPA-approved label. *Id.* §§ 136v(a)-(b).

²⁸⁴ Some states do have limited permitting requirements for pesticide use, but these requirements generally apply only to aerial application of pesticides and generally a permit is not issued for each application. For example, in Hawaii, a permit is required prior to aerial application of pesticides. *See* HAW. ADMIN. RULES § 4-66-64 (2004). However, the permit can be issued for repeated uses or for a specified length of time. *Id.* § 4-66-64(a)(4). Consequently, changing local environmental conditions are not likely to be adequately addressed for each application. In Massachusetts, a permit is required for the aerial application of pesticides. *See* 333 MASS. CODE REGS. 13.05(3)(b) (2004). In addition, in Massachusetts a special permit is required for application of restricted-use pesticides to an area greater than twenty-five acres. *See id.* § 13.02(2). Similarly, in Vermont, one-year duration permits are required for aerial application of pesticides. *See* 20-031-012 VT. CODE R. § IV(5) (2003), available at <http://www.vermontagriculture.com/ARMES/VTregs91.htm#Section%20IV>.

may be in the area. Moreover, a permitting system would ensure greater compliance than a sentence on a pesticide label telling users to access county bulletins and follow the restrictions on such bulletins.

Under the proposed permitting system, EPA would consult with the Services at the time of registration or re-registration for issues of nationwide concern to see if a pesticide should be registered in the first place and for generic warnings regarding toxicity and proper use. The consultation would also result in the Services issuing BiOps that would set forth reasonable and prudent alternatives that would be used as permit conditions for particular pesticide applications in particular locations. If there are overriding benefits that outweigh the risks posed by the use of the pesticide, EPA will issue the registration. The reasonable and prudent alternatives from the BiOp will become the basis for localized permitting decisions. The permitting agency would make the decision based on geographic and temporal factors such as whether there are threatened or endangered species using, migrating through or breeding in the area, as well as whether less risky alternatives are available, whether the use of particular pesticide at a particular site under particular conditions is appropriate, and whether site and use specific restrictions based on the reasonable and prudent alternatives from the BiOp are warranted. Thus, under this approach, even high toxicity pesticides could still be registered if they have overriding benefits, but there will be oversight as to which pesticides can be applied where, when and how.

Finally, none of the changes described above will suffice unless there is a commitment to make endangered species protection a priority. As shown by EPA's longstanding avoidance of its ESA responsibilities, as well as by the recent attempts to use rulemaking to circumvent ESA compliance, the agencies do not appear to be committed to such a priority. Clear leadership is needed to direct the agencies to not abrogate their species protection obligations merely because meeting such obligations is a difficult task. Given the thousands of pesticide regulatory decisions made each year and the hundreds of species at risk, compliance with the ESA will be a large undertaking. Accordingly, both EPA and the Services must be provided with sufficient resources to carry out the daunting task of consulting on literally thousands of pesticides, and even more importantly, of implementing the necessary regulatory measures to ensure that protected species are not put at risk due to pesticide use. Strong leadership from the top is necessary so that the agencies are clear that their mission is to make effects determinations, carry out consultations, and implement species protection measures, rather than spending limited resources fighting lawsuits and developing ever more creative contortions to attempt to avoid compliance with species protection laws.

VII. CONCLUSION

Due to the conflicting goals, standards, focuses, and methods of United States species protection laws and pesticide law, the agencies implementing these laws have reached an impasse. As the battle rages, birds, fish, pollinators, threatened and endangered species, and other wildlife are the unwitting casualties. To date, the federal agencies charged with carrying out the mandates of the conflicting laws have done a poor job, not only of finding ways to comply with the laws, but more importantly, in protecting at-risk species. Although courts have attempted to resolve the problem, they too are limited by the inherent flaws of the existing statutes. The only way to adequately reconcile the laws, while still carrying out the goals of species protection, a safe and affordable food supply, and public health protection, is for Congress to amend FIFRA to eliminate the strict cost-benefit balancing standard, to require the consideration of benefits and lower risk alternatives, and to establish a permitting system for large-scale pesticide applications. This would ensure proper consideration of local factors and implementation of the reasonable and prudent alternatives recommended by the Services to reduce the risk of harm to listed species. In addition, the Services and EPA should coordinate to develop a process to streamline consultation, without eliminating the vital role of the expert agencies. Finally, to properly carry out the important mandates of the ESA, both the Services and EPA's pesticide office will need adequate funding and leadership to overcome the long-term EPA culture of evading ESA compliance and the bureaucratic inertia and paralysis that has ensued for the past thirty-five years.