

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

Mary Jane Angelo
Associate Professor of Law
University of Florida
Levin College of Law
PO Box 117625
2500 SW 2nd Avenue
Gainesville, FL 32611-7625
phone: 352-273-0944
fax: 352-392-3005
email: angelo@law.ufl.edu

ABSTRACT

***The Killing Fields:
Reducing the Casualties in the Battle Between
U.S. Species Protection Law and U.S. Pesticide Law***

Mary Jane Angelo, University of Florida Levin College of Law

For the past 35 years a battle has raged due to the conflicting goals, standards, focus, and methods among the U.S. species protection laws and U.S. pesticide law. The unwitting casualties of this battle are the literally millions of birds, fish, and other wildlife species that have been killed and the hundreds of legally-protected species that have been put at risk of extinction. In the past several years the battle has intensified. A number of environmental organizations have sued the U.S. Environmental Protection Agency (EPA) over its continued failure to comply with the Endangered Species Act (ESA). Rather than come into compliance, EPA has invoked every legal defensive strategy imaginable and become more entrenched in its position of non-compliance. EPA's reluctance to comply with the law is due in part to EPA's institutional bias in favor of registering pesticides and its generic bureaucratic inertia. A significant cause of the non-compliance, however, is the catch-22 in which EPA finds itself due to the conflicts in the law.

This Article chronicles the history of the interaction among species protection and pesticide statutes, describing the litigation the conflict has spawned, EPA's regulatory action and inaction, and the legislative response. The picture that emerges is one of an unresolved crisis and massive noncompliance with federal mandates. To complicate matters more, in July 2007, the U.S. Supreme Court decision in National Association of Home Builders et al. v. Defenders of Wildlife created more controversy, throwing the relationship between federal pesticide law and federal species protection into even greater disarray. This Article examines 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 tension, the Article suggests legislative reform targeted to eliminate, or at least alleviate, the conflict while promoting the reconcilable goals of wildlife protection and availability or pesticides in the public interest.

TABLE OF CONTENTS

I.	The Problem	4
II.	The Casualties.	6
III.	The Statutes.	12
	a. The Endangered Species Act.	12
	b. The Migratory Bird Treaty Act.	15
	c. The Federal Insecticide, Fungicide and Rodenticide Act.	17
IV.	The Ongoing Tension	26
	a. The Litigation.	26
	b. The Agencies' Action and Inaction.	39
	c. The Legislative Response.	57
V.	The Source of the Tension.	58
	a. Conflicting Goals	58
	b. Conflicting Standards	62
	c. Conflicting Temporal and Geographic Focus	63
	d. Conflicting Methods	64
VI.	The Solution.	65
VII.	Conclusion.	76

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

Mary Jane Angelo¹

“There was a strange stillness. The birds, for example – where had they gone?”²

I. The Problem

Perhaps the anthem of the environmental movement of the 1970's, *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!*³) should have made a more ambitious request. Although DDT⁴ as well as a number of other related bio-accumulating pesticides were banned or severely restricted in the 1970s and 1980s, the pesticides that filled the vacuum due to the restrictions have resulted in substantial ecological devastation of their own. Thus, despite the ban of the much maligned DDT, the fear of a *silent spring* – a spring without the sounds of birds – is not merely a bad memory.

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 extinction. Unfortunately, the laws governing pesticides conflict in a number of significant ways with the laws designed to protect wildlife, including threatened and endangered species. Specifically, the species protection laws and pesticide laws differ dramatically in their goals, standards, focus, and methods, making it virtually impossible for the U.S. Environmental Protection Agency (“EPA”), the agency charged with implementing the pesticide laws, to comply with species protection laws. When coupled with EPA's institutional bias in favor of

¹ Associate Professor of Law, University of Florida Fredric G. Levin College of Law. I would like to thank Alyson Flournoy for helpful comments on an earlier draft of this article, Christina Storz and Kevin Shuler for outstanding research assistance, and the University of Florida School of Natural Resources New Faculty Support Grant Program and the University of Florida Summer Research Grant Program for financial assistance.

² Rachel Carson, *Silent Spring*, 1962

³ Joni Mitchell, *Big Yellow Taxi*, Ladies of the Canyon (1970).

⁴ “DDT” stands for dichlorodiphenyltrichloroethane, however, “DDT” is commonly used to refer to a mixture of isomers and breakdown products. Its pesticidal attributes were first recognized in 1942. 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. <http://www.pan-uk.org/pestnews/ddt.htm>.

registering pesticides, its generic bureaucratic inertia, and the recent Administration's hostility towards species protection, these conflicting laws have thrown the EPA into a chaotic mixture of defensive entrenchment and regulatory paralysis, resulting in an utter failure to comply with the species protection laws, such as the Endangered Species Act ("ESA"). The unwitting casualties of EPA's failure are the countless species, including threatened and endangered species that have been placed in harm's way.

Although the legal wrangling over the pesticide/species protection conflict has simmered for decades, in the past several years, the battles have intensified. Recently, a number of environmental organizations have sued EPA over its failure to comply with the ESA. In response to such suits, EPA has evoked every legal defensive strategy and become even more entrenched in its position of non-compliance with the ESA. All three branches of the federal government have entered the fray, with the judiciary attempting to resolve the conflicts inherent between the ESA and the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"), the regulatory agencies attempting to regulate their way out of ESA compliance, and the Congress attempting to make the problem go away by exempting pesticide regulatory decisions from the ESA. To complicate matters more, in July 2007 the Supreme Court ruled in *National Association of Home Builders et al. v. Defenders of Wildlife*,⁵ that federal agencies are not required to undergo the consultation process provided for in section 7 of the ESA unless their action is a discretionary one. Thus, the relationship between federal pesticide law and federal species protection law has been thrown into even greater disarray.

This Article examines the ongoing battle arising out of the conflicts among federal species protection laws and federal pesticide laws. Part II describes the extent of the harm to wildlife, including threatened and endangered species, caused by current pesticide usage, and the scientific reasons for such extreme harms. Part III provides an overview of the major federal species protection and pesticide statutes. Part IV chronicles the history of the interaction among these statutes, describing the litigation it has spawned, EPA's regulatory action and inaction, and the legislative response. The picture that emerges is one of an unresolved crisis and massive noncompliance with federal mandates. Part V 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 tension, Part IV suggest legislative reform targeted to eliminate or at least alleviate the conflict and

⁵ *National Association of Home Builders et al. v. Defenders of Wildlife et al*, Slip opinion No. 06-340, 127 S.Ct. 2518 (Decided June 25, 2007).

promote the reconcilable goals of wildlife protection and availability of pesticides in the public interest.

II. The Casualties

As with virtually every major environmental decision, DDT and other organo-chlorine pesticides were banned in response to a public outcry over a particular visible environmental crisis. In this case, the crisis was the egg shell thinning and other effects on avian raptors caused by DDT, which threatened the extinction of a number of species including the national symbol, the American Bald Eagle. DDT and its relatives undergo a phenomenon known as bioaccumulation, in which the concentration of the chemical increases dramatically in the higher levels of the food chain, resulting in substantial harms to top-of-the-food-chain predators, such as rapturous birds. The banning of these pesticides was crucial to the rebounding of populations of eagles, ospreys, and other raptors, and was accordingly a great environmental success story. Nevertheless, the ban was not without its consequences. The ban of organo-chlorine pesticides resulted in farmers, public health control agencies, such as mosquito control districts, and others switching to the alternative chemical pesticides available, primarily the organophosphate and carbamate pesticides. Although organophosphate and carbamate pesticides are ecologically superior to DDT and its kin, in that they do not persist in the environment for long periods of time and do not bioaccumulate in animals,⁶ in some respects, they are even more troublesome.

A number of recent studies and reports make clear that the threat of pesticide use to wildlife and in particular threatened and endangered species was not abated by the organo-chlorine bans of the 1970s and 1980s. In 2004, the Center for Biological Diversity (“CBD”) issued a Report which concluded that EPA has approved registrations for pesticides that put more than 375 threatened and endangered species at risk.⁷ In this Report CBD maintains that because pesticides are registered for use by the EPA, the public assumes that they have been determined to be “safe.”⁸ However, due to the statutory mandates of FIFRA,

⁶ <http://extoxnet.orst.edu/pips/parathio.htm>.

⁷ Brian Litmans & Jeff Miller, *Silent Spring Revisited: Pesticide Use and Endangered Species* (A Center for Biological Diversity Report, 2004), available at <http://www.biologicaldiversity.org/swcbd/Programs/science/pesticides/> (Last visited, July 10, 2007) (CBD Report).

⁸ *Id.* at i. The CBD Report summarizes the existing data on harm to aquatic life, birds, and other wildlife, including protected species. *Id.* at 6-9, 16-44. The Report also describes the problems of pesticide-contaminated waterways, soils, and biota, as well as pesticide spray drift. *Id.* at 1-5. Also included in the Report is a detailed description of the endocrine-disrupting effects associated

as well as EPA's policy choices on how to implement these mandates, and the institutional bias and inertia in EPA's Office of Pesticides programs, registration says very little if anything about the safety of a pesticide.⁹ The CBD Report describes EPA's regulatory oversight of the pesticide industry as "abysmal," and opines that EPA has consistently ignored sound science, as well as requests by the U.S. Fish and Wildlife Service ("FWS") to modify pesticide registrations to reduce wildlife impacts.¹⁰ Moreover, the Report finds an institutional bias not only toward registering pesticides despite the risks posed by them, but also toward rushing to approve registrations to get pesticides on the market, often before the risk are fully understood.¹¹

The CBD is not alone in its concerns over wildlife impacts due to pesticide use. For example, the American Bird Conservancy estimates that out of the 672 million birds that are directly exposed to pesticides each year, more than 67 million will die from the pesticide exposure.¹² Moreover, fish, bird and other wildlife poisonings from exposure to pesticides are fairly frequent and widespread.¹³ In fact, one database that tracks bird mortality from pesticide use lists over 400,000 reported bird deaths caused by pesticides resulting from almost 4000 pesticide poisoning incidents.¹⁴ Actual bird deaths from pesticide poisonings are most likely substantially greater due to the known underreporting of bird deaths.¹⁵ The organophosphate and carbamate pesticides appear to be the greatest

with many pesticides. *Id.* at 10-15. For more detail on the endocrine disrupting risks to wildlife caused by pesticides, see Mary Jane Angelo, *Embracing Uncertainty, Complexity, and Change: An Eco-Pragmatic Reinvention of a First- Generation Environmental Law*, 33 *ECOLOGY L.Q.* 105 (2006).

⁹ CBD Report, *supra* note 7, at i, 53, 60.

¹⁰ *Id.* at i.

¹¹ *Id.* at

¹² American Bird Conservancy, <http://www.abcbirds.org/pesticides/pesticideindex.htm> (last visited August 22, 2007). This estimate is supported by work conducted by Dr. David Pimentel, who has reported a conservative estimate of 67 million bird death per year from agricultural pesticide use. David Pimentel, *et al.*, *Assessment of Environmental and Economic Impacts of Pesticide Use*, in *THE PESTICIDE QUESTIONS: ENVIRONMENT, ECONOMICS AND ETHICS* 47, 68 (David Pimentel & Hugh Lehman, eds., 1993).

¹³ See The Avian Incident Monitoring System (AIMS) available at http://www.abcbirds.org/aims/report_list.cfm (last visited August 22, 2007). AIMS is a cooperative program between American Bird Conservancy and the US Environmental Protection Agency (EPA). The AIMS database tracks incidents of pesticide exposure impacting wild birds.

Id.

¹⁴ *Id.*

¹⁵ 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

cause of these deaths. Further, the U.S. Department of Agriculture has warned of an “impending pollinator crisis” due in part to pesticide use.¹⁶ Pollinators at risk include both commercial bees and a number of wild pollinators, including wild bees and a variety of species of bird and bat pollinators. A number of additional recent scientific studies reveal the substantial risks and lack of full understanding regarding the pesticide risks to wildlife.¹⁷

The primary pesticides that have replaced DDT and its relatives are the organophosphate pesticides, which 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, organophosphate pesticides actually cause more of an immediate threat to humans, fish and wildlife than do many of the organo-chlorine pesticides, such as DDT.¹⁸ Many organophosphate pesticides rapidly kill animals upon contact, whether through ingestion, breathing, or even mere skin contact.¹⁹

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. See Pimentel, *supra* note 12, at 66 .

¹⁶ CBD Report, *supra* note 7, at 17.

¹⁷ See e.g., Lawrence J. Blus & Charles J. Henry, *Field Studies on Pesticides and Birds: Unexpected and Unique Relations*, 7 *ECOLOGICAL APPLICATIONS* 1125-1132 (1997) (finding among other things, 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, SJRWMD 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, 337-338 (2000). In this article, Professor J.B. Ruhl describes the negative impacts of agriculture and the lack of strong environmental regulation of agriculture. Ruhl describes how farms, despite their substantial and negative influence on the American environment, often are exempted from environmental laws and regulations. *Id.* Farms account for 930 million acres of the American landscape, and in 1997 had sales of just under \$200 billion. *Id.* at 272-73. However, the farming industry also provides numerous hazards to the United States environment, such as habitat loss and degradation, soil erosion, pesticide releases, and non-point source water pollution. *Id.* at 274-93. Farms use over 750 million pounds of pesticides annually, and account for roughly 80% of the United States pesticide use. *Id.* at 282. The author notes how a “significant fraction” of pesticides fail to interact with the target but rather are absorbed into the soil, posing short-term, and for some pesticides, long-term toxic risks. *Id.* at 283. Furthermore, pesticide runoff has serious and negative consequences for the water supply. *Id.* at 283-84.

¹⁸ A comparison of the acute toxicity of DDT and that of the organophosphate pesticide, Parathion (one of the most acutely toxic pesticides), illustrates the dramatically higher toxicity of many organophosphates to DDT. DDT is considered moderately to slightly toxic to mammals. <http://www.pan-uk.org/pestnews/ddt.htm>. The acute oral LD50's of DDT(the dose at which 50%

Despite the longstanding knowledge of the risks of organophosphates, after the DDT cancellation, organophosphates succeeded organo-chlorines as the pesticide of choice and have become the most widely used chemical pesticides in the United States ever since. EPA has registered more than 18,000 pesticides. These 18,000 pesticide products contain approximately 890 active pesticidal ingredients that are registered in the U.S. by the EPA.²⁰ About 4.5 million pounds of these active ingredients are used annually.²¹ More than 2 billion pounds of pesticides per year are sold for agricultural use in the United States.²² According to the US Geological Society, agricultural uses account to approximately 70 to 80 percent of total pesticide use.²³ It should not be surprising that pesticide threats to wildlife remain given the extreme toxicity of many widely-used pesticides, the large quantities of these pesticides that are released into the environment each year, and the undeniable fact that these pesticides are released into the environment with the express purpose of killing and/or disrupting living organisms in the environment.

At the time of the DDT cancellation, EPA was aware of the trade-off between the bioaccumulating effects of DDT and its relatives and the acute toxicity concerns of the primary chemical pesticide alternative that would remain after the DDT cancellation -- the organophosphate pesticides. In EPA's final cancellation order, the EPA Administrator stated:

of the tested animals die – the lower the LD50, the more toxic the substance) range from 113-188 mg/kg in rats to greater than 1000 mg/kg in sheep and goats. *Id.* DDT is even less toxic via the dermal route of exposure. *Id.* Human deaths from exposure to DDT are rare. *Id.* Parathion, on the other hand is considered to be highly toxic to humans and mammals by all routes of exposure including ingestion, dermal absorption, and inhalation. <http://extoxnet.orst.edu/pips/parathio.htm>. It is readily absorbed through the skin. *Id.* The oral LD50's of parathion range from 2-30 mg/kg in rats to 45 mg/kg in guinea pigs, order of magnitude more toxic than DDT. *Id.* Parathion, like all of the organophosphate pesticides acts by interfering with the chemical cholinesterase, which is critical for neurological function in a wide range of organisms. *Id.* They also exert neurological effects on birds, reptiles and invertebrates. Human fatalities have occurred from exposure to parathion via all routes of exposure, including ingestion, dermal absorption, and inhalation. *Id.* In addition, chronic effects may result from repeated or long term exposure to organophosphates. <http://extoxnet.orst.edu/pips/parathio.htm>.

¹⁹ <http://extoxnet.orst.edu/pips/parathio.htm>.

²⁰ U.S. EPA, Pesticides Industry Sales and Usage 1996 and 1997 Market Estimates 2, EPA 733-R-99-001, Nov. 1999, at <http://www.epa.gov/oppbead1/pestsales/marketestimates1997.pdf>. This number includes wood preservatives and other non-traditional pesticides, *Id.*

²¹ *Id.* Chlorine and bleach make up half of the total amount of active ingredient usage. *Id.*

²² See CBD Report, *supra* note 7.

²³ U.S. Geological Survey. 1999. Quality of Our Nation's Waters, Nutrients and Pesticides, USGS, Circ. 1225.

“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.”²⁴

Although the EPA Administrator recognized that the effects of organophosphates on non-target terrestrial species were more profound than those of DDT in the short run, the Administrator found that such effects could be minimized by prudent use.²⁵ An example of prudent use given by the Administrator is the avoidance of applying organophosphate pesticides in known nesting areas of rare birds.²⁶ Unfortunately, in the 35 years since the Administrator’s statement, such risk minimization measures have yet to be implemented.

Although the harms from the widespread use of organophosphate pesticides to wildlife have been known for decades, it has only been very recently that environmental organizations have set their sights on attempting to force EPA to take action to address these risks. The conflict among species protection laws and pesticides laws came to a head beginning in the year 2000, when environmental organizations initiated a spate of judicial challenges of EPA’s failure to comply with provisions of the ESA when registering and taking other regulatory action on pesticides. Specifically, in 2000, Californians for Alternatives to Toxics, along with several other organizations, sued EPA for failing to consult with the FWS and NMFS under section 7 of the ESA prior to registering pesticides that may affect six listed salmonoid species and 33 listed plant species or their critical habitats in California.²⁷ In 2002, three more lawsuits were brought against EPA for its failure to carry out its ESA section 7 obligation to consult with FWS and/or the National Marine Fisheries Service (“NMFS”)(together, “the Services”) prior to registering pesticides that may affect listed species or their critical habitat. Together these lawsuits involved a large number of pesticides and a variety of fish and wildlife species. In 2002, Washington Toxics Coalition and a number of other concerned organizations sued EPA for failing to consult with NMFS under section 7 prior to registering 54

²⁴ In the Matter of Stevens Industries, Inc, et al., I.F.& R. Docket Nos. 63, et al. (Consolidated DDT hearings, June 2, 1972)(DDT order) p. 51.

²⁵ *Id.* at. 45

²⁶ *Id.*

²⁷ Californians for Alternatives to Toxics website at <http://www.alternatives2toxics.org>.

pesticides which may affect salmonoid species.²⁸ Also in 2002, the Center for Biological Diversity filed suit against EPA for its failure to conduct a consultation prior to registering pesticides that may affect the listed California red-legged frog. The suit involved more than 200 pesticides that are used in the habitat of the species.²⁹ As set forth in more detail in Part V, EPA's response to these lawsuits has been to use every legal tactic possible to resist compliance with the ESA when registering pesticides. Although there has been some attention paid to these issues in the legal literature, for the most part, these legal conflicts and the dramatic threats to wildlife resulting from them, have maintained an extremely low profile.³⁰

²⁸ See Wash. Toxics Coalition, et al. v. EPA, et al., Case No. C01-013132C, Order issued January 22, 2004. This Order was the third in a series of orders granting injunctive relief to the environmental plaintiffs in this matter. See Wash. Toxics Coalition, et al. v. EPA, et al., Case No. C01-013132C, Orders issued July 16, 2003 and August 8, 2003. All of these Orders are available on EPA's website at <http://www.epa.gov/espp/wtc/index.html> (Last visited August 16, 2007).

²⁹ See <http://www.epa.gov/oppfead1/endanger/litigation/redleg-frog/rlf.htm>.

³⁰ One of the few recent publications discussing the problems with ESA compliance in EPA's pesticide program is Patti A. Goldman, *Protecting Endangered Species From Pesticides: Making the ESA Work or Finding Loopholes*, ALI-ABA Conference on September 18-19, 2003, SJ023 ALI-ABA 31. In this article, the author, a lead attorney for Earthjustice and the attorney in the Washington Toxics case, outlines the litigation ensuing against the EPA for its failure to conform pesticide registrations to the ESA's requirements. See also 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 (2004). This article chronicles several statutes and treaties in the context of pesticide-induced avian deaths. The author notes that the current standards of FIFRA and the protections afforded by the Migratory Bird Treaty Act ("MBTA") have failed to protect migratory birds. *Id.* at 329-32. The author specifically identifies seven registered pesticides that have proven to significantly cause avian mortality and the slow (and in some situations, non-existent) response to the dangers posed by the pesticide. *Id.* at 320-28. California's Proposition 65 made note of the problem of pesticides and the ESA: "EPA's failure to protect endangered species under FIFRA is in large part due to lack of implementation. In 1991, for example, EPA issued 'may affect' determinations under Section 7 of the ESA for only thirty-one pesticides out of the hundreds registered for use. The Fish and Wildlife Service has yet to complete consultation, however, on a single pesticide used in agricultural applications. In 1993 USFWS issued a biological opinion for the 16 vertebrate control agents on the EPA list. Thus, today the effects of agricultural pesticides on endangered species are largely unknown." Michael W. Graf, *Regulating Pesticide Pollution in California Under the 1986 Safe Drinking Water and Toxic Exposure Act (Proposition 65)*, 28 ECOLOGY L.Q. 663, 704 N. 74 (2001).

III. The Statutes

A. The Endangered Species Act

Currently, 1,882 species are federally listed as endangered or threatened by the U.S. government.³¹ These species are protected by regulation primarily under the Endangered Species Act,³² the most far-reaching wildlife protection act in the United States.³³ The purpose of the ESA is to conserve threatened and endangered plant and animal species and their habitat.³⁴ The vast breadth of the ESA is evident from Supreme Court descriptions of the Act as the “most comprehensive legislation for the preservation of endangered species ever enacted by any nation.”³⁵ Under the ESA, species listed as endangered or threatened are protected in a variety of ways.

The term “endangered species” is defined as any species which is in danger of extinction throughout all or a significant portion of its range.³⁶ The term “threatened species” is defined as any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.³⁷ Although the statute creates distinct categories of endangered and threatened species, for the most part, species designated as either are subject to the same protections under the ESA. The agencies responsible for implementing the ESA are the United States Fish and Wildlife Service (“FWS”), which implements the ESA with regard to freshwater and terrestrial species, and the National Oceanic and Atmospheric Administration-Fisheries, also known as National Marine Fisheries Service (“NMFS”) (together, “the Services”), which implements the ESA with regard to marine and anadromous species. In addition

³¹ http://ecos.fws.gov/tess_public/Boxscore (last visited July 6, 2007). Of the total listed threatened and endangered species, 1133 are animals and the remainder are plants. *Id.*

³² 16 U.S.C. § 1531-1599.

³³ Although it is beyond the scope of this article, in recent years, there has been considerable debate over whether the ESA is too restrictive or not restrictive enough and whether the ESA is unreasonably interfering with private property rights. For a discussion of the rhetoric surrounding these debates, 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 (2004) (arguing that the push for ESA reform has been sold primarily on the basis of individual anecdotes, and as such these individual stories of “nightmarish” regulatory burdens on small landowners should be further examined).

³⁴ 16 U.S.C. § 1531(b).

³⁵ *Babbitt v. Sweet Home Chapter of Communities for a Greater Oregon*, 515 U.S. 687, 698 (1995) (quoting *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 180 (1978)).

³⁶ 16 U.S.C. § 1532(6).

³⁷ 16 U.S.C. § 1532(20).

to listing species as threatened or endangered, the Services are also required to designate critical habitat for each listed species.³⁸

Once a species is designated as either threatened or endangered under the ESA, several statutory 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.”³⁹ The U.S. Supreme Court has upheld the Services’ interpretation of the term “harm” to include acts that involve significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering.⁴⁰ 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 violator knowingly violated the prohibition. Violations of the section 9 take prohibition can result in both civil and criminal enforcement, including penalties up to \$50,000 and imprisonment up to one year for knowing violations resulting in takes of endangered species.⁴¹ In addition, courts may award injunctive relief to prevent the takes from occurring or continuing.

Obviously, an Agency that directly kills or injures a listed species, such as through destroying an active nest during a federal construction project, would have section 9 liability. The more complicated issue is the extent to which regulatory agencies are liable for takes that occur as a result of action not taken by the agency, but instead taken by a party *with authorization* from the agency. Although in this situation liability will depend on the precise circumstances of the authorization, in general, federal regulatory agencies have been found liable under section 9 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 because the gear entangled the whales⁴² and, as discussed in more detail below, EPA was liable for a taking by allowing a pesticide to be marketed that was eventually ingested by endangered black-footed ferrets.⁴³

³⁸ 16 U.S.C. § 1532(5)(defining critical habitat as the specific areas within the geographic area occupied by the species which are essential to the conservation of the species and which may require special management considerations for protections).

³⁹ 16 U.S.C. § 1532(19).

⁴⁰ *Babbitt v. Sweet Home Chapter of Communities for a Greater Oregon*, 515 U.S. 687 (1995)

⁴¹ 16 U.S.C. § 1540(b).

⁴² *Strahan v. Coxe*, 127 F.3d 155 (1st Cir. 1997).

⁴³ *Defenders of Wildlife v. Administrator, Environmental Protection Agency*, 882 F. 2d 1294 (8th Cir. 1989).

The ESA contains a limited exception to the “take” prohibition for private parties. Section 10 of the ESA provides that one may obtain a permit to “take” a listed species, if the “taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity,” and “will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.”⁴⁴ To obtain an incidental take permit it is necessary for the permit applicant to develop a “habitat conservation plan” that minimizes and mitigates impact of the taking to the maximum extent practicable.⁴⁵

The second major regulatory program under the ESA is found in Section 7,⁴⁶ which contain two mandates with regard to federal agencies. First, the federal agencies are required to use their existing authorities to conserve endangered and threatened species.⁴⁷ Second, section 7 mandates that federal agencies consult with the Services to “insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical habitat] of such species.”⁴⁸ Federal agency action will “jeopardize the continued existence of a listed species” where the action can reasonably be expected, directly or indirectly, to appreciably reduce 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.⁴⁹

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. Under 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.⁵⁰ If the Agency determines, with written concurrence of the Services, that the proposed action is “not likely to adversely affect” listed species, the

⁴⁴ 16 U.S.C. § 1539.

⁴⁵ Because many listed species occur primarily or exclusively on non-federally owned lands, FWS and NMFS have developed a policy to encourage and promote the voluntary management of non-federally owned lands for listed species through the use of “Safe Harbor Agreements.” These agreements are entered along with the issuance of “enhancement of survival” permits to authorize any necessary future incidental takes and to provide the landowner with assurances that no additional restrictions will be imposed as a result of their activities. *See* <http://www.fws.gov/endangered/recovery/harborqa.pdf>.

⁴⁶ 16 U.S.C. § 1536.

⁴⁷ 16 U.S.C. § 1536(a)(1),

⁴⁸ 16 U.S.C. § 1536(a)(2).

⁴⁹ 50 C.F.R. § 402.02.

⁵⁰ 50 C.F.R. § 402.13.

consultation process is terminated.”⁵¹ If the Agency determines that the action is “likely to adversely affect” listed species, the Agency must engage in the formal consultation process.⁵²

The product of the formal consultation process is the issuance of a Biological Opinion (“BiOp”), which will state whether federal agency action is likely to jeopardize listed species. If the Services conclude that the proposed agency action is likely to jeopardize the continued existence of listed species, the Services will include in the BiOp “reasonable and prudent alternatives” that if implemented would avoid jeopardy.⁵³ The Service may also include in the BiOp an incidental take statement (“ITC”), which will identify actions that will not be considered a prohibited taking and will provide legal cover for harm that does occur to species if addressed in the ITC.⁵⁴ After the BiOp has been issued, the Agency decides whether to proceed with action. 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 by an incidental take statement.

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”).⁵⁵ The MBTA implements four international treaties that are aimed at protecting migratory birds. The scope of the MBTA is quite broad and has been said to cover “almost all native North American birds.”⁵⁶ Some, but not all, migratory birds covered by the MBTA are also a listed species under the ESA and, thus, both Acts would apply to those species. Under the MBTA, it is unlawful at any time, by any means or in any manner to hunt, take, capture, kill, possess, purchase, sell, barter, or transport any bird protected by the Treaty, any part, nest, or egg of a protected bird or any product composed of any part, nest, or egg of a protected bird, except as permitted by regulation of the Secretary of the Interior.⁵⁷ Violations of this prohibition can result in criminal penalties.⁵⁸ Most violations are misdemeanors, which are

⁵¹ *Id.* at 33-34. 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.

⁵² 50 C.F.R. § 402.13-14.

⁵³ 16 U.S.C. § 1536(b) (4).

⁵⁴ 16 U.S.C. § 1536(b) (4).

⁵⁵ 16 U.S.C. § 703. For the protection of marine mammals, the primary legislative authority, is the Marine Mammal Protection Act. 16 U.S.C. §§ 1361-1421h.

⁵⁶ *Id.* at 378. However, non-native species are not covered, and hence not protected, under the MBTA. *Id.* at 381-85.

⁵⁷ 16 U.S.C. § 703.

⁵⁸ 16 U.S.C. § 707.

punishable by a fine of not more than \$15000.00, imprisonment for not more than six months, or both. To be guilty of a misdemeanor a violator need not have any intent or knowledge that it was violating the MBTA. For a felony conviction, however, a violator must *knowingly* violate the MBTA. A felony conviction can result in penalties up to \$2,000.00 and up to two years in prison.⁵⁹

As with the ESA, the MBTA prohibits “takes.” The MBTA does not define the term “take,” however, regulations define it to mean “pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt” any of the foregoing.⁶⁰ The state of the law on how broadly this definition extends is not clear. For example, although one court has found the language to be broad enough to include activities such as accidental poisoning by discharging pesticide waste into a storage pond,⁶¹ in a more recent decision, another court has determined that habitat modifications such as logging activities are not considered to be a take under the MBTA.⁶² Thus, although not well-defined, the MBTA’s definition of “take” appears to be narrower than the definition under the ESA, which, as described above, may include significant habitat modification or degradation where it actually kills or injures wildlife.⁶³ Nevertheless, the MBTA’s narrow definition of the term “take” does not include habitat modification that cause death or injury to migratory birds as prohibited under the Act. However, at least with regard to accidental poisonings with pesticides, the MBTA appears to apply.⁶⁴ Because the MBTA protects species before they near extinction it can be

⁵⁹ 16 U.S.C. § 707(b).

⁶⁰ 50 C.F.R. 10.12.

⁶¹ *United States v. FMC Corp.*, 572 F.2d 902 (2d Cir. 1978).

⁶² *Seattle Audubon Society v. Evans*, 952 F.2d 297 (9th Cir. 1991).

⁶³ In a recent article, one author argues that the current protective aspects of the MBTA have been limited by narrow judicial interpretation of the Act, and as such there remains a need for legislative and administrative expansion of the Act to encompass the dangers posed by poisoning and habitat loss. Conrad A. Fjetland, *Possibilities for Expansion of the Migratory Bird Treaty Act for the Protection of Migratory Birds*, 40 NAT. RESOURCES J. 47 (2000). This article traces the history of MBTA cases where parties were found liable for indirect takings of migratory birds, including takings that occurred as a result of pesticide poisoning. *Id.* at 50-54.

⁶⁴ For a detailed discussion of the MBTA, including its history dating back to the Migratory Bird Act of 1913, see 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, 360 (1999). Among other things, this outlines describes the framework for the MBTA, describing the general prohibitions against permit-less takings of protected birds, the permit requirement and process and the criminal provisions for MBTA violations. *Id.* at 372-76. The article goes on to provide a detailed discussion of the Act’s prohibited activities - namely whether poisoning or electrocution (passive activities causing bird deaths) or habitat modification were restricted a la hunting. *Id.* at 385-86. Reviewing case law, the authors note that while the poisoning deaths may be violations of the MBTA, strict liability does not attach to the timber harvesting-caused habitat modification that harms protected birds. *Id.* at 387-91. The court in the

utilized more efficiently and quickly than the ESA (which requires a drawn-out listing process for species already nearing extinction).⁶⁵

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

In the U.S., the EPA has the primary responsibility for regulating pesticides. EPA's authority for pesticide regulation is rooted primarily in FIFRA.⁶⁶ Under FIFRA, all pesticides⁶⁷ that are sold or distributed in the United States must be registered by EPA.⁶⁸ The primary standard for registration is that the pesticide be registered only if it will not cause an "unreasonable adverse effect on the environment."⁶⁹ Specifically, section 3(a) of FIFRA provides that EPA shall register a pesticide if it determines that, when considered with any restrictions imposed, its composition is such as to warrant the proposed claims for it, its labeling and other material required to be submitted comply with the requirements of FIFRA; the pesticide will perform its intended function without unreasonable adverse effects on the environment; and when used in accordance with widespread and commonly recognized practice it will not generally cause unreasonable adverse affects on the environment.⁷⁰ FIFRA defines the term

timber case specifically distinguished the anti-take provisions of the ESA with the MBTA, finding that the MBTA's exclusion of the terms harass or harm from its "take" definition limited the scope of the MBTA in comparison to the ESA. *Id.* at 390.

⁶⁵ 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).

⁶⁶ 7 U.S.C. §§ 136-136(y) (2004).

⁶⁷ *Id.* § 136(u) provides that the term "pesticide" means "any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. . ." *Id.* § 136(u).

⁶⁸ *Id.* § 136a(a). This subsection provides:

Except as provided by this subchapter, no person in any State may distribute or sell to any person any pesticide that is not registered under this subchapter. To the extent necessary to prevent unreasonable adverse effects on the environment, the Administrator may by regulation limit the distribution, sale or use in any State of any pesticide that is not registered under this subchapter and that is not the subject of an experimental use permit under section 136c of this title or an emergency exemption under section 136p of this title.

Id. § 136a(a).

⁶⁹ *Id.* § 136a(c)(5). Section 136(j) provides that the term "environment" includes water, air, land, and all plants and man and other animals living therein and the interrelationships which exist among them. *Id.* § 136(j).

⁷⁰ *Id.* § 136a(c)(5) provides:

The Administrator shall register a pesticide if the Administrator determines that, when considered with any restrictions imposed under subsection (d) of this section –

(A)its composition is such as to warrant the proposed claims for it;

“unreasonable adverse affects on the environment” 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.⁷¹ Accordingly, when making the determination of whether to register a pesticide, EPA must consider both the risks posed by the pesticide and the economic and social implications of using the pesticide.⁷² Although not expressly mandated by the statute, EPA has interpreted and consistently applied this standard as a cost/benefit balancing standard under which EPA weighs the costs or risks associated with the use of a pesticide against the economic and social benefits of the pesticide.⁷³

(B)its labeling and other material required to be submitted comply with the requirements of this subchapter;

(C)it will perform its intended function without unreasonable adverse effects on the environment; and

(D) when used in accordance with widespread and commonly recognized practice it will not generally cause unreasonable adverse affects on the environment. *Id.* § 136a(c) (5).

⁷¹ Section 136(bb) defines the term “unreasonable adverse effects on the environment” 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. . . .” *Id.* § 136(bb).

⁷² It should be noted, that cost/benefit terminology is used differently under FIFRA than it is used in discussing most environmental regulation. Typically, in doing a cost/benefit analysis, the regulatory agency compares the costs of regulation (e.g., the cost of installing pollution controls) to the benefits of regulation (e.g., lives saved or cancers avoided). Under FIFRA, however, the “costs” are considered to be the costs of allowing the use of the pesticide (e.g. cancer deaths), whereas the benefits are considered to be the benefits of allowing the use of the pesticide (e.g., reduction in crop loss from pest insect damage).

⁷³ A number of scholars have pointed out that although Congress did direct EPA to take into account economic factors, it did not explicitly mandate 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) and Angelo, *supra* note 8, at 176-77, 182. In fact, as Professor William Rodgers has described, the legislative history of FIFRA suggests that adverse affects were not intended to be tolerated unless there are “overriding benefits” from the use of the pesticide. See WILLIAM H. RODGERS, *ENVIRONMENTAL LAW* 407, 451-53 (West, 2d ed. 1994). Despite the apparent intent of Congress in enacting FIFRA, for more than thirty years, EPA has interpreted FIFRA to require a cost/benefit balancing, and this interpretation as been upheld by the court. See *Environmental Defense Fund, Inc. v. EPA* (heptachlor-chlordane), 548 F.2d 998, 1004 (D.C. Cir. 1976), *cert. denied* 431 U.S. 925 (1977) (stating that “to evaluate whether use of a pesticide poses an ‘unreasonable risk to man or the environment,’ [EPA] engages in a cost-benefit analysis . . .”); In the Matter of Chapman Chemical Co., *et al.*, FIFRA Dockets No. 246 *et al.* (EPA 1976) (stating that “before any pesticide can be cancelled under FIFRA [EPA] must be persuaded that the risks to man or the environment from continued use of the pesticide outweigh the benefits of its continued use.”); In the Matter of Protexall Products, Inc., *et al.*, FIFRA Docket Nos. 625, *et al* (1989) (stating that “the risk-benefit assessment involves a balancing of the risks . . . against the benefits . . .”). It should be noted, that cost/benefit terminology is used differently under FIFRA than it is used in discussing most environmental regulation. Typically, in doing a cost/benefit analysis, the regulatory agency compares the costs of regulation (e.g., the cost of installing pollution controls) to the benefits of regulation (e.g., lives saved or cancers avoided).

Although the registration standard requires EPA to determine that the pesticide “will perform its intended function” without unreasonable adverse effects on the environment,⁷⁴ 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.⁷⁵ Accordingly, there is no requirement to demonstrate that a pesticide is essential to obtain a registration and the availability of alternative pesticides for the same use does not preclude registration. Moreover, FIFRA expressly authorizes EPA to waive all data requirements pertaining to efficacy and in fact EPA has, by rule, done so.⁷⁶ Thus, as a practical matter 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.

One of the most significant aspects of FIFRA is that it requires an applicant for a pesticide registration to submit data to EPA.⁷⁷ Under FIFRA, EPA

Under FIFRA, however, the “costs” are considered to be the costs of allowing the use of the pesticide (e.g. cancer deaths), whereas the benefits are considered to be the benefits of allowing the use of the pesticide (e.g., reduction in crop loss from pest insect damage).

⁷⁴ *Id.* § 136a(c)(5)(B).

⁷⁵ *Id.* § 136a(c)(5) provides that:

The Administrator shall not make any lack of essentiality a criterion for denying registration of any pesticide. Where two pesticides meet the requirements of this paragraph, one should not be registered in preference to the other. In considering an application for the registration of a pesticide, the Administrator may waive data requirements pertaining to efficacy, in which event the Administrator may register the pesticide without determining that the pesticide’s composition is such as to warrant proposed claims of efficacy.

⁷⁶ 40 C.F.R. § 158.640(b)(1). The burden of providing EPA with the necessary information to determine whether the standard for registration is met rests at all times with the registrant or applicant for registration. The procedures for registering pesticides are set forth in the statute and regulations (primarily 40 CFR Part 152).

⁷⁷ 7 U.S.C. § 136a(a) (2004) provides:

(a) Requirement of registration

Except as provided by this subchapter, no person in any State may distribute or sell to any person any pesticide that is not registered under this subchapter. To the extent necessary to prevent unreasonable adverse effects on the environment, the Administrator may by regulation limit the distribution, sale or use in any State of any pesticide that is not registered under this subchapter and that is not the subject of an experimental use permit under section 136c of this title or an emergency exemption under section 136p of this title.

Id. § 136a(c)(2)(a) provides:

(2) Data in support of registration (a) In general

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." Conditional registration can be used in a number of specified circumstances, including for: 1) products with composition and proposed uses identical or substantially similar to currently registered pesticides; 2) products with proposed new uses; or 3) certain products with new active ingredient.⁷⁸ For the first two types of conditional registration, 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.⁷⁹ To

The Administrator shall publish guidelines specifying the kinds of information which will be required to support the registration of a pesticide and shall revise such guidelines from time to time. . . . In the development of these standards, the Administrator shall consider the economic factors of potential national volume of use, extent of distribution, and the impact of the cost of meeting the requirements on the incentives for any potential registrant to undertake the development of the required data. . . .

Data requirements are found at 40 CFR Part 158, and provide for the submission of health and environmental effects data. The applicant for registration must bear the cost of gathering and generating the necessary data. To avoid duplicative data generation, the statute encourages the joint development of data and provides that applicants seeking to reach agreement on the terms of a data development arrangement may seek binding arbitration. *Id.* § 136a(c)(1)(F)(iii). Data already submitted to the Agency to support an existing registration, may be relied upon to support a new registration application provided the applicant for the new registration offers to pay compensation to the registrant who originally submitted the data. Data submitted to support a registration the first time a particular active ingredient is registered is protected by the "exclusive use" provisions of FIFRA and cannot be considered by EPA to support additional registrations for a period of ten years. *Id.* In addition, FIFRA section 10 generally governs the disclosure of information submitted to EPA pursuant to FIFRA requirements. Section 10(d) provides that health and safety data must be made available to the public, except that section 10(g) prohibits disclosure of health and safety data to multinational pesticide producers except during public proceedings under law or regulation. Sections 10(b) and 10(d) provide that other confidential business information ordinarily may not be released and provide specific protection for the formula and information on inert ingredients. Exemptions from these confidentiality protections are provided to avoid imminent public health risks and when the Administrator determines that disclosure is in the public interest during a proceeding to determine whether a pesticide causes unreasonable adverse effects. Any such release of information is subject to procedural protections involving prior notice and opportunity for district court review.

⁷⁸ *Id.* § 136a(c)(7), registration under special circumstances, provides:

Notwithstanding the provisions of paragraph (5) --

(A) The Administrator may conditionally register or amend the registration of a pesticide if the administrator determines that (i) the pesticide and proposed use are identical or substantially similar to any currently registered pesticide and use thereof, or differ only in ways that would not significantly increase the risk of unreasonable adverse effects on the environment, and (ii) approving the registration.

⁷⁹ *Id.* § 136a(c)(7)(A).

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 use of the pesticide is in the public interest.⁸⁰ The vast majority of EPA's data requirements under FIFRA relate to human health effects.⁸¹ Unfortunately, EPA's data requirements for testing for wildlife and ecological effects are extremely limited.⁸² EPA does require the submission of environmental fate data designed to "assess the presence of widely distributed and persistent pesticides in the environment which may result in loss of usable land, surface water, ground water, and wildlife resources, and assess the potential environmental exposure of other nontarget organisms, such as fish and wildlife, to pesticides."⁸³ EPA's data requirements related to wildlife impacts or other ecological effects are much less ambitious. EPA requires submission of some data designed to evaluate impacts to wildlife and aquatic organisms. The wildlife and aquatic organism data requirements include avian toxicity studies⁸⁴ and freshwater fish and invertebrate acute toxicity studies⁸⁵ for most pesticides intended for outdoor use. Additional data are only required on a case-by-case basis depending on the result of lower tier studies. Such conditionally required studies include mammal 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

⁸⁰ *Id.*

⁸¹ These data 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, spray drift evaluation, as well as oncogenicity, teratogenicity, neurotoxicity, and reproductive effects in humans.⁸¹ See *id.* paragraphs 158.202(a), (c), (e), (f), and (g) and *id.* §§ 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).

⁸² See Leslie W. Touart & Anthony F. Macriowski, *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).

⁸³ *Id.* § 158.202(d)(1). These data 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. Environmental fate data are used to evaluate human exposure to pesticides, as well as wildlife exposure. Consequently, these data requirements appear to be fairly comprehensive. *Id.* § 158.202(d)(2), (3), (4), (5), and (6). See also *id.* § 158.290.

⁸⁴ 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.

⁸⁵ 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.* § 158.490.

cycle, fish life cycle and aquatic organisms accumulation, and simulated or actual field testing of aquatic organisms⁸⁶ for most outdoor uses. With regard to wildlife, EPA's main concern is with acute toxicity testing, and EPA 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 data requirements do not contain any studies, whatsoever, aimed at evaluating effects on other species such as amphibians or reptiles or other species not specifically identified in the rules. As to organisms other than birds, mammals and fish, EPA's requirements are even more limited. In fact, EPA rarely requires data submission related to adverse effects to nontarget insects. Although EPA does conditionally require acute toxicity testing for honey bees and other pollinators if the proposed use will result in honeybee or other pollinator exposure, EPA does not have any data requirements related to pollinator subacute feeding studies,⁸⁷ non-target aquatic insects, or non-target predatory or parasitic insects.⁸⁸

Once EPA evaluates submitted data, it must determine whether use restrictions are necessary to minimize risks sufficient to be outweighed by benefits, and thus, to meet the registration standard. However, EPA's ability to regulate pesticide use under FIFRA is very limited. Unlike many other environmental statutes, FIFRA does not establish a permitting system for pesticide use. Specifically, 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. In fact, 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.⁸⁹ FIFRA defines the term "label" as the written, printed, or graphic matter on, or attached to the pesticide.⁹⁰ "Labeling," on the other hand is much broader and includes the label as well as all other written, printed, or graphic matter that accompanies the pesticide or to which reference is made on the label.⁹¹

⁸⁶ *Id.* § 158.490. Conditionally required studies are required only on a case-by-case basis depending on the results of lower tier studies, such as acute and subacute testing, intended use pattern and environmental fate characteristics, or if certain specified criteria are met.

⁸⁷ In its data requirements rule, EPA identifies this type of requirement as "reserved pending development of test methodology." 40 C.F.R. § 158.590 (2005).

⁸⁸ In its data requirements rule, EPA identifies these types of requirements as "reserved pending further evaluation to determine what and when data should be required, and to develop appropriate test methods." *Id.* § 158.590.

⁸⁹ *Id.* § 136a(c)(1)(C).

⁹⁰ *Id.* § 136(p)(1).

⁹¹ *Id.* § 136(p)(2).

All registered pesticide products must bear a label or labeling containing specified information including precautionary statements, warnings, directions for use of the product, and an ingredient statement.⁹² The primary means by which EPA regulates pesticide “use” under FIFRA is by requiring users of pesticides to follow all label directions. All pesticide product labels are required to state that it shall be unlawful for any person to use any pesticide in a manner inconsistent with its labeling.⁹³ This is the sole obligation placed by FIFRA on users of pesticides. Accordingly, directions for use is the only mechanism to regulate user behavior to accomplish risk reduction goals. Unfortunately, pesticide users may not understand, or be willing to follow, the complex labeling instructions necessary to regulate use to prevent environmental harms. Moreover, it is virtually impossible for EPA to know who, where, when and how persons are using pesticides, not to mention to monitor each and every pesticide user in country to assure the labeling instructions are followed.

FIFRA does authorize EPA to classify higher risk pesticides as restricted use pesticides. A restricted use pesticide may be used only by or under the supervision of a certified applicator. These products may not be purchased by the general public.⁹⁴ However, such a designation is designed primarily to protect the users themselves, and generally are not designed to address ecological or wildlife risk reduction. EPA may classify a pesticide for restricted use if it would cause unreasonable adverse effects on the environment in the absence of such a restriction.⁹⁵ Certification of applicators is primarily conducted by the states, whose certification plans must conform to certain standards enumerated in FIFRA.⁹⁶

⁹² A product whose label or labeling does not contain the information required by EPA or which sets forth false or misleading information is misbranded *Id.* §§ 136(q) and 136j(a)(1)(E).

⁹³ *Id.* § 136j(a)(2)(G).

⁹⁴ *Id.* § 136a (d)(1).

⁹⁵ *Id.*

⁹⁶ *Id.* § 136i, regarding the use of restricted use pesticides, provides:

Use of restricted use pesticides; applicators

(A) certification procedure

(1) Federal certification

In any State for which a State plan for applicator certification has not been approved by the Administrator, the Administrator, in consultation with the Governor of such State, shall conduct a program for the certification of applicators of pesticides. . . .

(2) State certification

If any State, at any time, desires to certify applicators of pesticides, the Governor of such State shall submit a State Plan for such purpose. The Administrator shall approve the plan submitted by any State [meets certain

The 1972 revisions to FIFRA mandated that the Agency go back and reexamine previously registered pesticides.⁹⁷ Congress mandated this reexamination or "reregistration" to ensure that previously-registered pesticides meet current standards and to ensure that the data EPA had for these older pesticides was the same as that for newer pesticides. EPA's reregistration efforts moved extremely slowly, and as a result, in 1988 Congress imposed on EPA specific reregistration requirements intended to improve both the pace and the nature of reregistration.⁹⁸ These reregistration provisions establish a multi-phased process with a number of deadlines that ensures that registrants submit required data for EPA review under current standards. Failure to meet the prescribed data submission deadlines may result in suspension or cancellation of registration.⁹⁹

Once a pesticide is registered, EPA maintains the authority to either cancel or suspend the existing registration based upon certain risk/benefit determinations. FIFRA section 6(b), which specifically addresses cancellation, provides that EPA may issue a notice of intent to cancel if a pesticide or its labeling does not comply with FIFRA or if when used in accordance with widespread and commonly recognized practice, the pesticide generally causes unreasonable adverse effects on the environment.¹⁰⁰ Under section 6(b) there are two types of cancellation actions. Section 6(b)(1) authorizes EPA to issue a notice of intent to cancel or change classification. 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.¹⁰¹ Regardless of the type of cancellation action initiated

general conditions regarding the state's legal authority, funding mechanisms, etc.]

Id.

⁹⁷ *Id.* § 136a-1.

⁹⁸ 7 U.S.C. § 136a-1.

⁹⁹ *Id.*

¹⁰⁰ *Id.* § 136d(b). FIFRA requires review of the proposed cancellation notice by the Secretary of Agriculture (USDA) and the FIFRA Scientific Advisory Panel (SAP). The statute dictates that the notice must be submitted to USDA and the SAP 60 days prior to notification of the registrant or publication (whichever comes first). If USDA and the SAP do not submit comments within 30 days, EPA may publish the notice. If USDA and the SAP do submit comments, EPA may, after reviewing such comments, withdraw the notice, issue a final notice without modification, or modify the notice, as appropriate.

Once the notice is published, persons adversely affected have 30 days to request a hearing. If no such hearing is requested, the notice of intent to cancel becomes final. If a hearing is requested, the hearing is considered a formal adjudicatory proceeding and is held before an ALJ. Such a proceeding is governed by the Agency's rules at 40 CFR Part 164.

¹⁰¹ *Id.* § 136d.

Administrative review, suspension

(b) Cancellation and change in Classification

by EPA, the standard for cancellation is a the risk/benefit balancing standard. Section 6(b) (2) is used when EPA's judgment concerning the risks and benefits of a pesticide is only tentative.¹⁰² Before taking final action under section 6(b), the EPA must consider whether any unreasonable risks posed by a pesticide's use can be sufficiently reduced by regulatory measures short of cancellation, such as additional labeling restrictions and/or the classification of the pesticide for restricted use. If EPA determines that sufficient risk reduction cannot be achieved by such measures, the registration of the pesticide for that use must be cancelled.¹⁰³

If it appears to the Administrator that a pesticide or its labeling . . . does not comply with the provisions of this subchapter or, when used in accordance with widespread and commonly recognized practice, generally causes unreasonable adverse effects on the environment, the Administrator may issue a notice of the Administrator's intent either-

- (1) to cancel its registration or to changes it classification together with the reasons (including the actual basis) for the Administrator's action, or
- (2) to hold a hearing to determine whether or not its registration should be canceled or its classification changed.

. . . In determining whether to issue any such notice, the Administrator shall include among those factors to be taken into account the impact of the action proposed in such notice on production and prices of agricultural commodities, retail food prices, and otherwise on the agricultural economy. At least 60 days prior to sending such notice to the registrant or making public such notice, whichever occurs first, the Administrator shall provide the Secretary of Agriculture with a copy of such notice and an analysis of such impact on the agricultural economy.

. . . The proposed action shall become final and effective at the end of 30 days from receipt by the registrant, or publication of a notice . . . , unless within that time either (I) the registrant makes the necessary corrections, if possible, or (ii) a request for a hearing is made by a person adversely affected by the notice. . . In taking any final action under this subsection, the Administrator shall consider restricting a pesticide's use or uses as an alternative to cancellation and shall fully explain the reasons for these restrictions, and shall include among those factors to be taken into account the impact of such final action on production and prices of agricultural commodities, retail food prices, and otherwise on the agricultural economy.

Id. § 136d(b).

¹⁰² There is no distinction between § 136d(b)(1) and § 136d(b)(2) hearing in the manner of conduct, burden of proof, or nature of initial decision by ALJ. One issue generally considered as part of the cancellation process is whether the Agency should allow the continued sale and use of existing stocks of the pesticide.

¹⁰³ Of the more than 60 pesticide cancellations and suspensions that occurred prior to 1994, only approximately one third have been judicially reviewed. RODGERS, *supra* note 73, at 480. EPA's refusal to initiate proceedings to cancel or suspend a registration is considered a final order reviewable in District Court. *See* *Env'tl. Defense Fund v. EPA*, 465 F.2d 528 (D.C. Cir. 1972). In addition to authorizing cancellation, FIFRA authorizes EPA to suspend the registration of a pesticide based on certain findings. There are two types of suspension proceedings. 7 U.S.C.

IV. The Ongoing Tension

A. The Litigation

Starting in the late 1970's, the U.S. brought a number of lawsuits involving the issue of pesticides harming protected species. The earliest cases involved liability under the MBTA. In *United States v. FMC Corporation*,¹⁰⁴ the Second Circuit considered whether the defendant corporation's manufacture and subsequent release of toxic pesticides that killed ninety-two migratory birds violated the MBTA.¹⁰⁵ The government pursued thirty-six individual violations pursuant to specific dates of bird kills, of which the jury found the corporation guilty on eighteen counts.¹⁰⁶ The MBTA makes it unlawful to kill migratory birds and makes such unlawful killings a misdemeanor.¹⁰⁷ The key issue was whether a violation of the MBTA could be predicated on an intentional action without specific intent to kill protected birds, or if a violation required that the defendant possess mens rea to kill migratory birds.¹⁰⁸

§136d(c) (2004). Ordinary suspension is used where necessary to prevent an imminent hazard during the time required for cancellation proceeding. "Imminent hazard" is defined as a substantial likelihood of serious harm during the duration of cancellation proceedings. A suspension action is merely to address the risks and benefits for the period involved, not an ultimate resolution of the cancellation issues. *Id.* § 136d(c)(1). In an ordinary suspension, EPA must provide notification to the registrant of the intent to suspend and an opportunity for a hearing. Only a registrant, not a third party such as an environmental organization, may request an adjudicatory hearing. The suspension order becomes effective either after a favorable decision following a hearing, or five days after notification if no hearing is requested. *Id.* § 136d(c)(2). If a registrant requests a hearing, an expedited administrative adjudicatory hearing is held before an ALJ. Interested third parties may intervene at this point. The sole issue to be decided at the hearing is whether an imminent hazard exists. *Id.* An emergency suspension order, on the other hand, is effective immediately. It is used where an emergency exists that does not permit even an expedited hearing before suspension takes place. *Id.* § 136d(c)(3). Registrants must request an expedited hearing within five days and the hearing must begin within five days of the Agency's receipt of such a hearing request. *Id.* The emergency order remains in effect until the issuance of a final suspension order following the hearing. *Id.* Third parties do not have a right to request or intervene in an expedited hearing. *Id.* An emergency suspension order is subject to immediate review in District Court. *Id.* § 136d(c)(4).

¹⁰⁴ 572 F.2d 902 (2d Cir. 1978).

¹⁰⁵ *Id.* at 903.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.* at 904.

FMC owned a pesticide-manufacturing facility in upstate New York, producing and storing dithio carbamate pesticides on-site.¹⁰⁹ A ten-acre pond on-site served as a wastewater conduit for pesticide production.¹¹⁰ Although pesticides were to be treated before entry into the pond, pesticides were being dumped directly into the pond; as a result the water body had a concentration of carbofuran two hundred times greater than the amount required to cause a significant probability of bird kills.¹¹¹ Unfortunately, the size of the water body attracted migrating birds, and as a result of the high concentration levels, numerous bird deaths were found over a two-month span in 1975.¹¹²

The Second Circuit acknowledged that hunting issues had predominated MBTA cases and as a result were fairly inapposite to the instant case.¹¹³ The court noted further, however, that even though FMC did not know that its release of carbofuran was the cause of the bird deaths, FMC's product directly caused the deaths.¹¹⁴ FMC argued that it not only lacked the intent to kill the birds, it also took no affirmative act causing the deaths and, as a result, did not violate the MBTA. The court disagreed, noting that the "term 'act' itself is ambiguous", citing cases in which even a failure to act in light of a duty itself creates liability as a criminal action.¹¹⁵ The court stressed that FMC had acted when it manufactured a toxic pesticide and that FMC had failed to prevent the pesticide's release in spite of its affirmative duty.¹¹⁶ The court analogized the release to a strict liability offense in tort law, citing the Restatement (Second) of Torts, which made individuals carrying on abnormally dangerous activities liable for injury regardless of due care shown.¹¹⁷ Thus, the court reasoned, FMC's manufacture of pesticides constituted an abnormally dangerous activity, and FMC's failure to prevent a toxic release leading to bird deaths made it strictly liable regardless of the care it might have shown.¹¹⁸

In another MBTA case, *United States v. Corbin*,¹¹⁹ the Eastern District of California held that the Migratory Bird Treaty Act's prohibition on bird-killings applied to poisonings even in the absence of actual intent to kill protected bird

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Id.* at 905.

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.* at 906.

¹¹⁵ *Id.*

¹¹⁶ *Id.* at 907.

¹¹⁷ *Id.*

¹¹⁸ *Id.* at 908.

¹¹⁹ 444 F.Supp. 510 (E.D. Cal. 1978).

species.¹²⁰ The court first addressed whether the MBTA prohibited only hunting deaths by noting that while the Act was primarily intended by Congress to address hunting of migratory birds, section 703 of the MBTA, in broad language, made it illegal to kill a migratory bird in any manner.¹²¹ Furthermore, the court noted, song birds were among the protected species even though such birds were not commonly hunted, indicating an intention by Congress to broadly safeguard the protected species.¹²²

The defendants had also contended that violations of the MBTA required an intent on their part to kill migratory birds.¹²³ The court examined prior case law outside of the hunting context but found little of precedential value.¹²⁴ The court then focused on bait-hunting, noting that prior courts did not require knowledge of the poisoned bait itself as an element of the crime.¹²⁵ The defendants argued that bait-hunting materially differed from the instant conduct as placing baits inherently involved a party with intent to kill protected birds whereas the defendants claimed they lacked such intent.¹²⁶ The defendants predicated their argument on two fronts- first, by reference to the Bald and Golden Eagles Protection Act's ("BGEPA") scienter requirement and, secondly, by claiming the government's MBTA rationale would require some individuals to be liable upon the death of *any* protected bird as a result of human contact.¹²⁷

The court rejected both defenses. The court found that while the BGEPA has a scienter requirement,¹²⁸ the MBTA is silent on this element. The second argument was easily rejected, as the court noted that the defendant, as a pesticide

¹²⁰ *Id.* at 536. In a lengthy opinion, the court considered whether the terminology of FIFRA with regard to certain provisions was unconstitutionally vague and whether the appropriate basis for an individual violation of MBTA was each bird death or each act resulting in a bird death, regardless of actual birds killed. *Id.* at 515-31. The court held that FIFRA clauses pertaining to user liability were not unconstitutionally vague. *Id.* at 517. In light of the statutory ambiguities of the MBTA, the court agreed with defendants that the appropriate number of charged counts should be predicated on the number of actual applications of the pesticide, not the number of birds killed as a result of that one act. *Id.* at 531.

¹²¹ *Id.* at 532.

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.* at 533. The court briefly reviewed *United States v. Union Texas Petroleum*, 73-CR-127 (D.Colo. 1973) and *United States v. FMC Corporation*, 572 F.2d 902 (2d Cir. 1978), but found neither truly applicable as Union Texas was settled with guilty pleas, whereas FMC Corporation involved a bench determination. *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.* at 534.

¹²⁷ *Id.* at 534-35.

¹²⁸ A defendant must have acted "knowingly or with wanton disregard for the consequences of (their acts)." *Id.* at 534

applicator, had far more control in terms of preventing the death of a bird than a random automobile driver who had struck a bird with his car.¹²⁹ The court analogized the scienter requirement to that of FIFRA, and stated “the guilty act alone [was] sufficient to make out the crime,” and that requiring reasonable care was appropriate under the Constitution.¹³⁰ The court then held that the MBTA could be applied constitutionally against defendants lacking intent to kill migratory birds.¹³¹

While both *FMC* and *Corbin* imposed liability for pesticides that caused harm to protected species under the MBTA, neither addressed the issue of whether EPA, the regulatory agency responsible for registering pesticides, could be liable as a non-pesticide user based on its conduct in approving the registration of a pesticide later used by another party that caused harm to protected species. As described above, in *FMC* the liable party was the manufacturer of the pesticides, that handled the waste products in such a way as to cause harm and in *Corbin*, the liable party was the user of the pesticide product. It was not until 1989, that a court addressed the issue of whether EPA could be liable for approving a pesticide registration that ultimately resulted in harm to a protected species.

In 1989, the EPA was dealt a stunning blow, when the Eight Circuit found it liable for a take under ESA section 9 for allowing the continued registration of a pesticide that caused harm to a listed species. In *Defenders of Wildlife v. Administrator, Environmental Protection Agency*,¹³² the court considered a citizen suit brought under the ESA against EPA for harm caused to listed species by the application of strychnine, a FIFRA-registered pesticide.¹³³ In the 1970's the EPA reviewed the above-ground use of strychnine and consulted with the FWS about the impact of the pesticide on listed species.¹³⁴ The consultation culminated in a 1979 FWS Biological Opinion with findings that the continued use of above-ground strychnine would jeopardize listed species.¹³⁵ The EPA initiated a cancellation process for several registration uses for strychnine after several

¹²⁹ *Id.* at 535.

¹³⁰ *Id.* at 536. Because the reasonableness of the defendants' actions had not yet been decided at trial, the court did not address whether a defendant who had acted with reasonable care could be held liable without intent to kill. *Id.*

¹³¹ *Id.*

¹³² 882 F. 2d 1294 (8th Cir. 1989).

¹³³ *Id.* at 1296.

¹³⁴ *Id.* at 1296-97.

¹³⁵ *Id.* at 1297.

environmental groups intervened in the FIFRA process.¹³⁶ The discussions among the parties continued from 1984 until 1986.¹³⁷ Most of the intervenors settled with the EPA, but the Defenders of Wildlife and Sierra Club refused, and along with the Friends of Animals filed suit under the ESA's citizens' suit provision, alleging that the continued registration of strychnine was a take under the ESA.¹³⁸

The EPA argued that because the plaintiffs sought cancellation of a pesticide, plaintiff's suit had to be brought under FIFRA.¹³⁹ While the Ninth Circuit acknowledged that an action for pesticide cancellation alone should be sought under the FIFRA legislations,¹⁴⁰ the court held that FIFRA did not permit the EPA to ignore the ESA when regulating pesticides.¹⁴¹ The Ninth Circuit then considered whether the EPA's continued registration of strychnine constituted an illegal taking under the ESA.¹⁴² The EPA did not dispute that the distribution of strychnine had caused the death endangered species.¹⁴³ Noting that the definition of a take is quite broad and that distribution of strychnine could only occur upon registration of the pesticide, the Court held that the EPA action had caused the deaths of endangered species and as a result, an illegal taking had occurred.¹⁴⁴

¹³⁶ *Id.* The groups, Defenders of Wildlife, and the Sierra Club intervened, as did the Farm Bureau, FWS and United States Department of Agriculture. *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.* at 1298.

¹³⁹ *Id.*

¹⁴⁰ *Id.* at 1299.

¹⁴¹ *Id.*

¹⁴² *Id.* at 1300.

¹⁴³ *Id.* at 1301.

¹⁴⁴ *Id.* (describing how listed species had died from exposure to strychnine and that distribution could occur only through registration). EPA is not the only federal agency that has been reluctant to fully comply with section 7 of the ESA. For example, 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"). In *Florida Key Deer v. Brown*, 364 F. Supp.2d 1345 (S.D. Fla. 2005), the National Wildlife Federation, Florida Wildlife Federation and Defenders of Wildlife sued Michael Brown, in his official capacity as the head of FEMA, and Gale Norton in her official capacity as Secretary of the Interior seeking a judicial order requiring FEMA to consult with the FWS concerning its NFIP for the Florida Keys. *Id.* In 1994, the court ordered FEMA to consult with the FWS, and in 1997 the FWS issued a BiOp that the FEMA program "was jeopardizing" several endangered species. *Id.* Among the nine jeopardized species were the Key Deer, Key Largo cotton mouse, Key Largo woodrat, Key tree-cactus, and the Lower Keys marsh rabbit. *Id.* After a series of subsequent consultations, each of which was challenged by environmental organizations, the court ultimately granted the plaintiffs' request to enjoin FEMA from issuing flood insurance for any new developments in the listed species' suitable habitats in Monroe County. *Florida Key Deer v. Brown*, 2005 WL 2234155, p. 11 (S.D. Fla. 2005).

As described in detail below, EPA's loss in the 1989 *Defenders of Wildlife* case did little to prod EPA into ESA compliance. Despite the decades of noncompliance with the ESA, it was not until the early 2000's that a number of environmental organizations began to bring or threaten suit against EPA.¹⁴⁵ Although most of these cases settled, the cases in which the courts rendered decisions demonstrate the courts' frustration with EPA's noncompliance with the ESA. Indeed, the courts have attempted to impose the types of geographic use restrictions on pesticide usage that FIFRA is so poorly designed to accommodate and which EPA has resisted implementing. In fact, as further described below, in one of the most extensively litigated cases, the court recognized that species protection must occur on a geographic basis and took it upon itself to impose very site specific buffer requirements for spraying certain pesticides near waterbodies containing certain listed salmon species.

The current wave of litigation over the wildlife impacts to protected species from pesticide use started in 2002, when forty environmental groups, including the American Bird Conservancy and Defenders of Wildlife, sent the EPA a Notice of Intent to Sue for Violations of the Endangered Species Act,

¹⁴⁵ In addition to the lawsuits against EPA for its failure to comply with the ESA when making FIFRA regulatory decisions, the early 2000's also saw a rush of litigation against federal agencies that used pesticides that put listed species at risk as part of their federal land management practices. In *Oregon Natural Resources Council v. Keys II*, 2004 WL 1048168, page 1 (D. Or. 2004), plaintiffs filed suit against the Bureau of Reclamation ("BOR"), claiming that its application of acrolein and copper-containing pesticides in areas near the Lost River jeopardized the shortnose sucker and violated Section 7(a)(2) of the ESA. After a series of consultations and lawsuits, BOR reinitiated consultation with the FWS mooted the ongoing litigation. *Id.* at 2. In *San Juan Audubon Society v. Veneman*, 153 F.Supp. 2d 1-3 (D.C. District 2001), plaintiffs filed suit against the Secretary of Agriculture and the Services (defendants), alleging that the defendants' use of sodium cyanide ejectors violated restrictions set by the EPA as the ejectors were frequently misused and led to the deaths of the California condor and other endangered species. The sodium cyanide ejectors, labeled M-44s, are designed to kill predatory animals for the protection of livestock, but because of the nature of the device it also poisoned scavenging condors. *Id.* at 3. As a result, the EPA regulated the use of M-44s and required the defendants to follow maps prepared by the FWS to prevent poisonings of listed species. *Id.* The plaintiffs alleged that the defendants failed to follow these maps when applying M-44s in the condor's area. *Id.* at 4. The defendants filed a 12(b)(1) motion, arguing that the court lacked subject-matter jurisdiction over the dispute because there had not been a final agency action for the plaintiffs to appeal. *Id.* at 5. The court denied the motion, stating that the "particular agency actions at issue in this case are the defendants' approvals and individual decisions to place the M-44s" in areas causing harm to listed species without consulting the FWS-maps as required by the EPA. *Id.* Furthermore, the placement of M-44s in the areas in question constituted the climax of the "defendants' decision-making process," and the failure to review the FWS maps when using the M-44s provided the plaintiffs with the right to sue. *Id.* at 6. Because the plaintiffs only challenged these discrete agency actions and not the M-44s program as a whole, the court held that the plaintiffs could sue under the APA and that the motion to dismiss was improper. *Id.* at 7.

Migratory Bird Treaty Act, and Administrative Procedures Act Concerning the Registration of the Pesticide Fenthion due to the high risks Fenthion posed to a number of bird species. Later in 2002, the U.S. Fish and Wildlife Service recommended that EPA cancel existing registrations for fenthion immediately due to unreasonable adverse effects fenthion posed to avian species protection under ESA¹⁴⁶ and MBTA.¹⁴⁷ EPA failed to take action to reduce the risks as requested by the plaintiffs and as recommended by FWS. Consequently, in October of 2002 Defenders of Wildlife, the American Bird Conservancy and the Florida Wildlife Federation filed suit against EPA in federal district court alleging EPA had violated the ESA and MBTA. EPA was let off the hook when in 2003 the manufacturer of fenthion voluntarily canceled its registration of fenthion, rendering the lawsuit moot.¹⁴⁸

In September of 2004, environmentalists won a significant victory when the Ninth Circuit Court of Appeals issued a decision affirming a January 2004 U.S. District Court for the Western District of Washington order which found that EPA had violated the ESA, because it had failed to take steps to ensure that the registration of 54 pesticide would not jeopardize the survival of listed salmon species. The Court's ruling upheld the District Court's injunction, which imposed detailed buffer zones restricting the use of more than 30 pesticides along listed salmon supporting waters in California, Oregon, and Washington states.¹⁴⁹ The buffer zones adopted by the court came directly from the reasonable and prudent alternatives recommended by the Services in the 1989 BiOps.¹⁵⁰

In its brief to the Ninth Circuit, the EPA argued that the district court had erred in its decision that created mandatory buffer zones for application of the fifty five active ingredients in question and required the EPA to provide written

¹⁴⁶ 16 U.S.C. §§ 1532 - 1544 (2004).

¹⁴⁷ 16 U.S.C. §§ 703 - 711 (2004).

¹⁴⁸ See Fenthion: Product Registrations Cancellation Order, 68 Fed. Reg. 55,609-55,611 (Sept. 26, 2003). EPA approved the manufacturer's request to cancel Fenthion in May 2003. See 68 Fed. Reg. 32495-32497 (May 30, 2003).

¹⁴⁹ See Wash. Toxics Coalition, et al. v. EPA, et al., Case No. C01-013132C, Order issued January 22, 2004. This Order was the third in a series of orders granting injunctive relief to the environmental plaintiffs in this matter. See Wash. Toxics Coalition, et al. v. EPA, et al., Case No. C01-013132C, Orders issued July 16, 2003 and August 8, 2003. All of these Orders are available on EPA's website at <http://www.epa.gov/espp/wtc/index.html> (Last visited August 16, 2007).

¹⁵⁰ Patti Goldman, the attorney representing the environmental organizations in the case, recommended to the judge that the minimum buffers from the 1989 BiOp would be appropriate. The Services had already evaluated the pesticides at issue and determined that use of these buffers would avoid jeopardy.

notifications to accompany pesticides sold in urban areas.¹⁵¹ The EPA claimed several grounds for appellate relief, focusing mainly on the relationship of its FIFRA duties with its responsibilities under the ESA.¹⁵² The EPA first argued that since it had already granted a FIFRA license, any action that would result in a cancellation or modification of that license must be according to the statutory requirements of FIFRA.¹⁵³ Furthermore, the EPA claimed that FIFRA, when read in conjunction with the ESA, already took into account any concerns that registration might affect listed species.¹⁵⁴ The EPA also sought a determination that the plaintiffs had not fully exhausted their administrative remedies,¹⁵⁵ and that the district court, under the doctrine of primary jurisdiction, should have deferred to the EPA as the agency had the necessary experience to fashion appropriate orders regarding the complexities of pesticide regulations.¹⁵⁶

The Ninth Circuit rejected EPA's position, and agreed with the Eighth Circuit's logic in *Defenders of Wildlife v. EPA*,¹⁵⁷ stating that FIFRA does not allow the EPA to exempt itself from the requirements of the ESA, and that the EPA must comply with the ESA if its registration of pesticides will affect listed species.¹⁵⁸ The court held that while the statutes have different purposes and different calculations,¹⁵⁹ the EPA could not avoid its duties under the ESA simply "because it is bound to comply with another statute that has consistent, complementary objectives."¹⁶⁰ The court then summarily dismissed another of the EPA's arguments; namely that the EPA lacked discretion to cancel registration except under the statutory requirements of FIFRA.¹⁶¹ The court

¹⁵¹ The notification was headed "Salmon Hazard", with the following text, "This product contains pesticides that may harm salmon or steelhead. Use of this product in urban areas can pollute salmon streams." EPA Brief to the Ninth Circuit in *Washington Toxics vs. Environmental Protection Agency*, 2004 WL 1763203, page 12-13 (2004).

¹⁵² *Id.* at 14-15.

¹⁵³ *Id.* at 14.

¹⁵⁴ *Id.* The EPA argued that although the ESA had a citizen's suit provision, it should not be read so as to provide citizen plaintiffs' greater ability to enjoin pesticide registration than the EPA itself possessed. *Id.* at 15.

¹⁵⁵ *Id.* at 15. The EPA proposed that the citizen plaintiffs would have first petitioned the EPA to suspend registration of the offending active ingredients, and only upon an EPA decision of that petition should a lawsuit have been allowed. *Id.*

¹⁵⁶ *Id.* at 16. Under the doctrine of primary jurisdiction a court should abstain from ruling on certain issues that fall within the primary responsibilities of the acting agency. *Id.* at 27-28.

¹⁵⁷ 882 F.2d 1294 (8th Cir. 1989).

¹⁵⁸ *Washington Toxics Coalition*, 413 F.3d at 1032.

¹⁵⁹ Under FIFRA, the EPA utilizes a cost/benefit analysis to measure the risk to people or the environment from the pesticide's use versus the benefits of that use. The ESA, on the other hand, provides a virtual blanket prohibition against the takings of endangered species. *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.* at 1032-33.

simply noted that the cases the EPA cited involved completed agency actions in which there was “no ongoing regulatory authority”.¹⁶² These cases were not dispositive, however, as the court noted that EPA under FIFRA maintains continuing discretion to register pesticides, or in the alternative, modify or even cancel registration.¹⁶³ The court similarly dismissed the EPA’s argument that the plaintiffs had not adequately exhausted their administrative remedies, noting that FIFRA does not require a plaintiff to exhaust a FIFRA remedy before seeking relief under another statute.¹⁶⁴

The EPA primarily argued that it was bound only to apply the provisions of FIFRA, which had its own statutory language relating to endangered species.¹⁶⁵ As such, EPA argued that it did not have an independent duty under Section 7(a)(2) to consult with the FWS or the NMFS.¹⁶⁶ 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,”¹⁶⁷ the injunction was appropriate pending EPA compliance with the ESA. Furthermore, the court placed the burden of proof on the 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).¹⁶⁸

In September 2005, CropLife America filed petitioned for writ of certiorari to the United States Supreme Court seeking to have the Ninth Circuit’s decision in *Washington Toxics Coalition v. EPA* reversed.¹⁶⁹ Although the

¹⁶² *Id.* at 1033.

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* at 1031. Under 7 U.S.C. §136d(c)(1)-(2), the EPA may suspend registration of a pesticide for an immediate hazard, which per §136(l) can include its effect on endangered species. *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ *Id.* at 1035.

¹⁶⁸ *Id.*

¹⁶⁹ CropLife America, Petition for Writ of Certiorari, 1, September 2005. Petitioner argued that the Ninth Circuit had misapplied the scope of judicial review pertaining to agency actions under the APA, FIFRA and Section 7 of the ESA. *Id.* Principally, Petitioner argued that the district court and Ninth Circuit misapplied the judicial standard of review by applying a *de novo* standard to the challenged pesticide regulations. *Id.* at 11. In conjunction with its main argument, the Petitioner argued that since the EPA violation was procedural in nature, the EPA was not substantively violating the ESA and therefore APA guidelines should have governed the judicial review. *Id.* at 19. Furthermore, the Petitioner asserted that until the EPA had made a determination that the registration of pesticides “may affect” a listed species, there was no duty to consult with the NMFS. *Id.* at 23. The Petitioner’s final argument criticized the lower court rulings for failure to apply FIFRA requirements to a pesticide suspension. *Id.* at 25-6. The majority of the petition argued, much like Petitioner’s brief to the Ninth Circuit, that the lower court failed to apply the

Supreme Court declined to hear the *Washington Toxics Coalition* case, in June 2007, the Court decided another pivotal ESA case, which has potential implications for FIFRA. In *National Association of Home Builders et al. v. Defenders of Wildlife*,¹⁷⁰ the issue presented to the Court was whether EPA must undergo consultation with the Services under section 7 of the ESA when determining whether to approve transfer of permitting authority to a State under section 402(b) of the Clean Water Act. In *Defenders of Wildlife*, the state of Arizona applied for a transfer of CWA permitting authority to it under section 402(b). EPA argued that CWA section 402(b)'s mandatory nature precluded EPA from denying Arizona's application based on ESA consideration. It was not disputed that Arizona had met the nine specified criteria in section 402(b). The issue was whether EPA was required to determine whether under ESA section 7, its transfer decision would jeopardize listed species, thereby in essence adding a tenth required criterion to the list of nine in CWA section 402(b). In a 5-4 decision, the Supreme Court held that EPA was not required to undergo section 7 consultation or otherwise comply with the provisions of section 7 in granting a permit transfer under CWA section 402(b), because the decision to grant such a

pre-set judicial standards and deference to the acting agency throughout the judicial review process. *Id.* at 11-20. Petitioner first noted that other circuits addressing the standard of review for the ESA's citizen suit provisions had held that section 706 of the APA still applied (rather than a de novo standard). *Id.* at 11-12 (discussing the D.C., Fifth, Sixth, Eighth, Tenth and Eleventh Circuits' holdings that APA standards apply to ESA citizen suits). Because the district court applied a de novo standard, the court did not review the administrative record with regard to each pesticide registration, which the Petitioner argued was relevant with regards to the "unreasonable adverse effects on the environment" as required by FIFRA. *Id.* at 15. In addition, the refusal to apply the APA also meant that the APA remedies were not available- instead of simply compelling the EPA making the appropriate effects determination, the Petitioner argues, the court improperly enjoined the registration process and supplanted FIFRA. *Id.* at 15-16. Not applying the APA was improper, the Petitioner claimed, because the ESA "does not specify a standard of review... and therefore the agency action continues to be governed by, the arbitrary and capricious standard of the APA." *Id.* at 16. Furthermore the court did not appropriately delineate between a substantive and procedural violation by the EPA of the ESA as it held the EPA to be a regulated party rather than an administrative agency. *Id.* at 19. The Petitioner argued that because the EPA was only in procedural violation of the ESA (through its unreasonable delay in making effects determinations), the APA should have governed the cause of action. *Id.* The Petitioner's non-APA argument first stated that the decision to consult with the NMFS must be predicated upon a decision by the EPA that its actions may affect listed species. *Id.* at 23. Since there had been no such determination, consultation should not have been required. *Id.* In its second non-APA argument, the Petitioner claimed that FIFRA's substantive registration procedures, which provide for suspension due to an unreasonable hazard to a listed species, should not be bypassed by ESA injunction. *Id.* at 25-26. FIFRA provides the necessary due process projections and procedures that reflect the balancing concerns Congress meant for when it enacted the statute. As a result of these concerns, the Petitioner argued, the Supreme Court should review the below case.

¹⁷⁰ *National Association of Home Builders et al. v. Defenders of Wildlife et al*, Slip opinion No. 06-340 (Decided June 25, 2007).

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

Because FIFRA section 3(c)(5) provides that EPA “shall register” a pesticide if EPA determines that the specified standards are met, it may appear at first glance that under *Defenders of Wildlife*, compliance with section 7 is not required when EPA makes a registration decision. However, there are significant differences in the requirements of CWA section 402(b) and those of FIFRA section 3(c)(5). 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 ability to carry-out the permitting program. For example, the state must demonstrate that it has the ability to issue fixed time permits and to ensure compliance with the CWA’s substantive criteria and that it has the ability to provide for public notice and public hearings. These criteria do not in themselves 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 impose a completely new criteria addressing listed species impact to the exclusive list of criteria related to legal, administrative, and procedural abilities.

The criteria in FIFRA section 3(c)(5) on the other hand are not limited to determining whether a state has certain legal, administrative and procedural abilities. Instead, this section authorizes EPA to make a determination regarding whether a pesticide will cause “unreasonable adverse effects on the environment,” a term which is defined to include “all plants and man and other animals . . . and the interrelationships which exist among these.” 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 stated in *Washington Toxics coalition*, the mandates of the ESA are complimentary to the mandates of FIFRA. Thus, unlike in *Defenders of Wildlife*, where compliance with the ESA would require that a completely new criterion be added to the statutory list, ESA compliance is complementary to the mandate of the FIFRA.¹⁷¹

¹⁷¹ Although the ESA is complementary to FIFRA, a FIFRA unreasonable adverse effects determination is not the same as the jeopardy determination that results from the section 7 process. Thus, although EPA is required to consider adverse effects to listed species, its analysis under FIFRA is not a substitute for the analysis under the ESA. Specifically, under FIFRA, EPA is required to consider a large number of factors, including public health considerations, economics,

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 *Defenders of Wildlife* would not appear 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 affects 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, it does not appear that *Defenders of Wildlife* in any way obviates or alters EPA's requirement to comply with section 7 of the ESA when making FIFRA registration decisions. Thus, the Ninth Circuit's holding in *Washington Toxics Coalition* that EPA is

and social impacts in determining whether a pesticide should be registered. Under section 7 of the ESA, the sole consideration is whether the action will jeopardize the continued existence of the species. Thus, the relationship between FIFRA and the ESA is very different from the relationship between FIFRA and the National Environmental Policy Act ("NEPA"), wherein the court found that the FIFRA unreasonable adverse effects determination is the functional equivalent of NEPA. In *Merrell v. Thomas*, 807 F.2d 776 (9th Cir. 1986), plaintiff filed suit against the EPA for its failure to undertake environmental impact studies (EIS) when it registered pesticides under its FIFRA authority. *Id.* at 776-77 The district court granted summary judgment for the defendant, and the plaintiff appealed to the Ninth Circuit. *Id.* The issue confronting the court was whether the 1970 NEPA and its subsequent requirements applied to FIFRA registrations which had been amended in 1972. *Id.* at 778. The court first noted that the 1972 FIFRA amendments did not address preparation of the environmental impact studies that are required of administrative agencies under NEPA. *Id.* Of particular importance, the court noted the extensive nature of the FIFRA amendments, including a separate provision requiring the EPA to consider environmental impact in its registration process, thereby making "NEPA superfluous". *Id.* Further provisions permitting limited public notice and participation in the registration procedure further influenced the court that these amendments indicated an intention on the part of Congress to not apply NEPA to FIFRA registrations. In assessing the relevancy of the 1972 amendments, the court cited the limited notice requirements for registration, the limited timeframe requirements for registration and the restrictions on publicly released information regarding test data on pesticides as materially distinct from NEPA. *Id.* at 778-79. Furthermore, when the EPA interpreted FIFRA's provisions in light of the 1972 amendments, the agency determined that it need not comply with NEPA; the court held that further amendments to FIFRA, its failure to reprimand or legislatively mandate a change in interpretation signaled an intention to permit that Agency interpretation. *Id.* at 779. In fact, in 1978 Congress amended FIFRA to encourage quicker registrations, and that application of NEPA's time-consuming requirements would "sabotage the delicate machinery that Congress designed to register new pesticides." *Id.* FIFRA's registration standards for environmental impacts differed from NEPA's standard in terms of scope and balancing factors. *Id.* at 780. This balance between agricultural interests and environmental impact as sought by Congress further persuaded the court that NEPA and its corresponding EIS requirements did not apply to pesticide registrations under FIFRA.

required to comply with ESA section 7 is still good law. Further, under the 1989 *Defenders of Wildlife* case,¹⁷² EPA continues to have potential section 9 liability for registering pesticides that actually take listed species.

After its dramatic loss in *Washington Toxics Coalition*, EPA stopped litigating suits brought to force the agency to comply with section 7 of the ESA in the FIFRA registration process and pursued a policy of settling these cases.¹⁷³ One such settlement occurred in 2005, when EPA agreed to make “effects determinations” for six pesticides harmful to Barton Springs Salamander within specified time frames in response to a January 26, 2004 lawsuit against the agency brought by the Center for Biological Diversity and the Save Our Springs Alliance (“SOSA”). The suit, brought in the D.C. Circuit, alleged that the EPA violated the anti-take provisions of the ESA when it registered six pesticides without reviewing the potential negative effects on the Barton Springs Salamander.¹⁷⁴ The pesticides in question were atrazine, diazinon, carbaryl, prometon, metolachlor and simazine.¹⁷⁵ In the lawsuit, the plaintiffs specifically charged that the EPA had failed to comply with sections 7(a)(1) and 7(a)(2) of the Endangered Species Act¹⁷⁶, which require federal agencies to consult with the Services to guarantee that agency action will not jeopardize the continued existence of any listed endangered or threatened species.¹⁷⁷

Under the terms of the Settlement Agreement, the EPA would make effects determinations relating to the Barton Springs Salamander for the six pesticides according to the following schedule: (1) for atrazine, twelve months from the Settlement Agreement’s effective date; (2) for either carbaryl or diazinon, plus one additional pesticide listed in the complaint, twenty-one months (or 630 days) from the Settlement Agreement’s effective date; (3) and for the remaining three pesticides, twenty-five months (or 760 days) from the Settlement

¹⁷² 882 F. 2d 1294 (8th Cir. 1989).

¹⁷³ Some settlements actually occurred prior to the court decision in *Washington Toxics Coalition*. See, e.g., *Californians for Alternatives to Toxics v. EPA*, in which EPA agreed to make “effects determinations” for approximately 20 pesticides harmful to dozens of plant and salmon species by specified deadlines. See *Californians for Alternatives to Toxics* website at <http://www.alternatives2toxics.org>.

¹⁷⁴ U.S. Environmental Protection Agency, “EPA Signs Settlement Agreement Regarding Endangered Species”, available at http://www.epa.gov/oppfead1/cb/csb_page/updates/es-settlement.htm (last viewed September 27, 2005).

¹⁷⁵ *Id.*

¹⁷⁶ 16 U.S.C. §1536(a)(1) and §1536(a)(2).

¹⁷⁷ *Center for Biological Diversity vs. Johnson*, pages 2-3, No. 1:04-cv-00126-CKK, Settlement Agreement (D.C. Cir. 2005), available at http://www.epa.gov/oppfead1/cb/csb_page/updates/bartonsprings-agreemt.pdf (last viewed September 27, 2005).

Agreement's effective date.¹⁷⁸ The effects determination has three potential outcomes for the individual pesticide's effect on the listed species- "no effect", "may affect but is not likely to adversely affect", or "may affect and is likely to adversely affect."¹⁷⁹ If the EPA in its effects determination analysis makes a "may affect- likely to adversely affect" determination, then it will provide the relevant information to the FWS for formal consultation on that pesticide within 14 days of making that determination.¹⁸⁰ As a result of the settlement, the plaintiffs released all claims pursued in the original lawsuit and agreed to not provide other plaintiffs with information that could lead to similar lawsuits on these same pesticides.¹⁸¹ Other recent settlement include EPA's 2006 agreement with the Natural Resources Defense Council, in which the agency agreed to make "effects determinations" for atrazine's effect on 21 threatened and endangered species within specified time frames,¹⁸² and EPA's 2006 agreement with the Center for Biological Diversity in which the agency agreed to make "effects determinations" for 66 pesticides harmful to California Red-legged frog within specified time frames.¹⁸³

B. The Agencies' Regulatory Action and Inaction

EPA's 35-year history with the ESA as applied to pesticide regulation has not been a good one. The Center for Biological Diversity has criticized EPA as "display[ing] a stunning lack of initiative in complying with the Endangered Species Act," and having demonstrated a "reckless disregard for the impact of its Pesticide Registration Program on wildlife, most importantly, on endangered species."¹⁸⁴ Prior to 1989, the EPA had yet to formulate an effective method for consultation and review for potential pesticide threats to endangered species.¹⁸⁵ The agency's early attempts at meeting its Section 7 responsibility consisted of

¹⁷⁸ *Id.* at 5-6. The effective date, as defined in the Settlement Agreement, is to be the date upon which the "Stipulation and Order of Dismissal with Prejudice," is entered by the Court. *Id.* at 4.

¹⁷⁹ *Id.* at 5.

¹⁸⁰ *Id.* at 6.

¹⁸¹ *Id.* at 10.

¹⁸² See http://www.epa.gov/oppfead1/endanger/NRDCsettlement_fs.htm

¹⁸³ See <http://www.epa.gov/oppfead1/endanger/litigation/redleg-frog/rlf.htm>.

¹⁸⁴ CBD Report, *supra* note 7, at 51. The primary concern expressed by CBD is EPA's failure to carry out its obligation to conserve endangered species with a program to address pesticide impacts to such species. *Id.* The affirmative obligation for federal agencies to conserve threatened and endangered species derives from section 7(a)(1) of the ESA, which provides that all federal agencies shall use their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation of listed species. 16 U.S.C. § 1536(a)(1).

¹⁸⁵ Jim Serfis, "Pesticide Regulation", in *Balancing on the Brink of Extinction*, edited by Kathryn A. Kohm, 214-223 (Island Press 1991).

case-by-case pesticide registration reviews for individual species.¹⁸⁶ This process, however, was cumbersome, and in 1982 the EPA instead initiated the “cluster approach,” where all pesticides with similar use patterns, that is all pesticides that were used in a particular agricultural or ecological setting (such as corn farms, forests, rangeland or areas suited to mosquito larval growth) would be considered together and the FWS would prepare a BiOp opinion for all listed species potentially impacted by the pesticides.¹⁸⁷ EPA began implementing this approach and in the early 1980’s EPA 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. 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. This process, while quicker than the case-by-case method, suffered from problems of its own--namely minor uses for pesticides were not reviewed and a final cluster package review would take upwards of two to three years to complete.¹⁸⁸ More importantly, EPA failed to take action on the 1983 cluster BiOps.

A 1986 independent review of the EPA’s pesticide program found that the agency did not comply with Section 7 of the ESA in one-third of all pesticide cases.¹⁸⁹ In response to the review, in 1987 the EPA announced it would seek full compliance with the ESA, by issuing restrictions for pesticides where a determination had been made that usage had been harmful to listed species and by issuing further restrictions on labeling in conjunction with information bulletins providing use instructions.¹⁹⁰ The proposal faced considerable opposition and Congress itself intervened, delaying the EPA program until 1988.¹⁹¹ Due to congressional pressure and agricultural lobbying, the EPA had not adopted the program as of 1989. At that time, the agency instead proposed a two-prong approach, which consisted of an individual species-based review (rather than pesticide cluster-based) focusing on those species most in need of protection followed by a determination of the highest acceptable rate of pesticide exposure

¹⁸⁶ *Id.* at 216.

¹⁸⁷ *Id.* at 216-17.

¹⁸⁸ *Id.* at 217.

¹⁸⁹ *Id.* Among the problems was registration of pesticides before receiving biological opinions from the FWS and a failure to restrict harmful pesticides. *Id.*

¹⁹⁰ *Id.* at 218.

¹⁹¹ *Id.* at 219.

for that species.¹⁹² This approach was included in EPA's 1989 proposed Endangered Species Protection Program (ESPP), which was designed to establish a process for future consultations.¹⁹³

The proposed ESPP attempted to address risks to listed species by requiring a label statement on each pesticide product that would instruct users to obtain and consult with "county bulletins." These county bulletins would be developed for each county in the United States containing listed species habitat. The bulletins would consist of maps showing the location of listed species habitat and would contain instructions on how to properly use pesticides to reduce risks to listed species existing in that particular county. The county bulletin program had many shortcomings. First, it was voluntary and unenforceable. Second, it depended upon pesticide users taking the initiative to obtain county bulletins and then comply with their recommendations. Prior to the easy access to county bulletins via the internet, this was a cumbersome task that few, if any, users would voluntarily have undertaken. Most significantly, however, EPA's progress in developing county-wide bulletins was extremely slow and out of the more than 1800 listed species, and thousands of registered pesticides, only a very few bulletins were developed, with bulletins for only one or two species in a very few counties in each state. 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.¹⁹⁴ Similarly, for the State of Maryland, a bulletin was developed for only one county for one species of fish. Needless to say, the county bulletin program did not meet the goal of either protection of listed species or compliance with the ESA.¹⁹⁵ Moreover, this

¹⁹² *Id.* at 220.

¹⁹³ 54 Fed. Reg. 27984. *See also* CBD Report, *supra* note 7, at 51.

¹⁹⁴ For example, the EPA issued a county bulletin for Gadsden County, Florida that lists seventeen active pesticide ingredients that are to be used in accordance with the bulletin's requirements. Pesticides: Endangered Species Protection Program, Gadsden County, Florida, available at <http://www.epa.gov/espp/florida/gadsd.htm> (last visited September 28, 2005). Users of these pesticides are provided the sample trade names for the active ingredients, as well as the affected listed endangered species, the Florida torreya, an evergreen tree native to the Apalachicola River Valley. *Id.* The EPA has issued written limitations on the application of the seventeen pesticides, providing strict requirements for pesticide application methods depending on the proximity to ravines and bluffs. Within ravines and bluffs, users can only apply pesticides via tree injection; along ravines and bluffs, users may apply pesticides via ground application, but for aerial application of the seventeen active ingredients near ravines and bluffs, the user must maintain a certain buffer area dependent on the method of application. *Id.*

¹⁹⁵ For further discussion of EPA's failure to implement the reasonable and prudent alternatives from the 1989 and 1993 BiOps, as well as EPA's failure to develop more than a few county bulletins, *see* Patti A. Goldman, *Protecting Endangered Species From Pesticides: Making the ESA Work or Finding Loopholes*, ALI-ABA Conference on September 18-19, 2003, SJ023 ALI-

program remained as merely a “proposed” throughout the 1990s and into the early 2000’s. During this time, EPA repeatedly asserted that it would be finalizing the ESPP in the near future, but EPA failed to take any action on the program until 2002, when it issued a second proposed ESPP, when it was forced to act in response to litigation.

The 1986 internal review together with the 1989 Defenders of Wildlife loss, appeared to nudge the EPA into action to comply with the ESA consultation provisions. In the late 1980’s and early 1990’s, EPA consulted with the Services in two substantial consultations, each involving a large number of pesticides and a large number of potentially affected listed species. The first of these was when EPA reinitiated consultation on selected portions of five previous cluster BiOps. EPA’s reason for reinitiating consultation was: 1) to reevaluate jeopardy posed to aquatic species based on a new analysis of estimated environmental concentrations; 2) to evaluate pesticides that may affect four bird species listed since the 1983 BiOps were completed; 3) to consider new reasonable and prudent alternative to avoid jeopardy to species occurring solely or largely on federal lands, and for the red-cockaded woodpecker and the wood stork; 4) to assess the potential of certain pesticides to indirectly harm listed species through their food supply; and 6) to consider withdrawing/canceling jeopardy opinions for pesticides that had been cancelled or suspended. This reinitiated consultation involved 112 pesticides each potentially affecting one or more of 165 listed species. This consultation resulted in a 1989 BiOp issued by FWS. It took approximately 10 months from the time of the reinitiation of consultation to the time of the issuance of the final BiOp. The 1989 BiOp superseded the 1983 cluster BiOps and made a total of 1,867 jeopardy findings. Thereafter, EPA initiated consultation on 16 vertebrate control pesticides potentially affecting a number of species, including 30 mammal species, 15 bird species, 9 reptile species, and one insect species. It took approximately two years from the time of the initiation of the consultation to the issuance of the BiOp. As a result of this consultation, FWS issued a 1993 BiOp, which made 189 total jeopardy findings. Accordingly, in the 1989 and

ABA 31. In this article, Goldman discusses the history of litigation seeking to compel EPA consultation on pesticide registrations. *Id* She explains how in the late 1980’s and early 1990’s, the EPA underwent formal consultation under Section 7(a) (2), and as a result, numerous mitigation requirements were sought, such as buffer zones around the habitats of listed species, but that EPA failed to implement these buffer zones, and has only recently reintroduced its Endangered Species Protection Program. *Id* This includes the county bulletin program, but as of now the EPA has only issued bulletins in several states and for only a small number of listed species. *Id* Furthermore, labels making the county bulletin restrictions mandatory have not yet been introduced, and as a result, the author argues, makes the bulletins voluntary. *Id*

1993 consultations alone, FWS made 2,056 jeopardy findings.¹⁹⁶ The overwhelming number of jeopardy findings resulting from its first significant consultation efforts seemed to paralyze EPA. The 1989 BiOp is 677 pages long and the 1993 BiOp is 189 pages long. In the 1993 BiOp alone, FWS recommended over 165 reasonable and prudent alternatives for the various species/pesticide combinations. In the 1989 BiOp, FWS provided a menu of approximately 27 reasonable alternatives, most of which applied to many of the large numbers of pesticide/species combinations. Examples of just a few of the many reasonable and prudent alternatives from 1989 BiOp include:

- Prohibit use of the chemical within 100 yards of the water's edge for ground applications and ¼ mile for aerial applications at sites of known populations or within designated critical habitat, whichever is larger.
- Prohibit use within ½ 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.

Examples of reasonable and prudent alternatives from the 1993 BiOp include:

- Prohibit the use in occupied habitat
- Use within occupied habitats only by qualified individuals (e.g., wildlife biologists, certified applicators)
- Prohibit use within 100 yards of occupied habitat

¹⁹⁶ Detailed tables developed by the showing the reasonable and prudent alternatives for each of the 1867 pesticide/species jeopardy findings in the 1989 BiOp and for each of the 189 pesticide/species jeopardy findings in the 1993 BiOp, as well as the incidental take authorizations and reasonable and prudent measures, are on file with the author.

- A black-tailed dog colony or complex of less than 80 acres having no neighboring prairie dog towns may be treated without a ferret survey.
- A white-tailed prairie dog colony or complex of less than 200 acres having no neighboring prairie dog towns may be treated without a survey.
- Urban situations may be treated without conducting ferret surveys.
- Black-tailed colonies/complexes over 80 acres but less than 1,000 acres, prairie dog control may be allowed after completing a black-footed ferret survey within 30 days of proposed treatments on colonies proposed for treatment, provided no ferrets or their sign are found.
- For complexes over 1,000 acres, no control shall be allowed until the complex has been evaluated for its potential as a recovery site and until the complex has been block cleared
- EPA shall maintain records, including the amount of acres of prairie dog towns/complexes controlled or the amount of chemical sold, and including application rates.

EPA appeared to not 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 detailed reasonable and prudent alternatives recommended by FWS in the BiOps. Among the questions EPA would have faced in responding to the BiOps were: How would EPA incorporate these into label language? Would pesticide users be able to understand and properly follow these restrictions? Could pesticide users realistically be expected to read potentially dozens of pages of label language and follow the restrictions when applying the pesticides? Could pesticide users realistically be expected to know the locations of the breeding sites of the Puerto Rican crested toad? Was it reasonable to expect a pesticide user to know the location of black-tailed dog colonies of less than 80 acres having no neighboring dog towns? How would EPA enforce these detailed label restrictions?

It is no wonder that EPA struggled with how to carry out its FIFRA mandate, with its limited authority for regulating use, and still comply with the ESA. EPA chose not to attempt to impose these detailed restrictions on pesticide labels, and instead sought to find a more workable solution to the problem. The near impossibility of imposing all reasonable and prudent alternatives for every listed species on each pesticide label led EPA to continue to rely on its county

bulletin ESPP program, despite the failure to finalize it, its many shortcomings, and EPA's own admission that it was not up-to-date and far from complete.¹⁹⁷

Unfortunately, a detailed review of the record reveals that in the ensuing 15 to 19 years since the 1989 and 1993 BiOps, EPA has failed to take any action whatsoever to require pesticide users to comply with any of the reasonable and prudent alternatives recommended by the FWS for the 2,056 jeopardy findings, or any other risk reduction measures that would address the jeopardy findings. Research into regulatory actions taken on each pesticide for which one of the 2,056 jeopardy opinions were issued did not reveal any regulatory actions taken to reduce risks to any of the affected listed species in response to any of the jeopardy opinions. 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. This 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. Of the 189 jeopardy opinions and 165 RPA's suggested in the 1993 BiOp, this research did not reveal a single instance in which EPA took any regulatory action in direct response to the findings or suggestions in the BiOp. Moreover, research investigating the pesticides subject to the 1989 BiOp has not revealed any regulatory action taken by EPA to impose label restrictions or to otherwise reduce risks for the 1867 jeopardy opinions in the 1989 BiOp.¹⁹⁸ Most significantly, the research revealed no instance in which EPA imposed a reasonable and prudent alternative recommended by the Services as FIFRA label restriction, or any other type of pesticide use restriction.

Instead of imposing the FWS suggested RPA's as label restrictions or taking other regulatory action in response to the 20567 jeopardy findings in the 1989 and 1993 BiOps, EPA has repeatedly attempted to justify its failure to act by referring to the County Bulletin program it initiated in the 1980's. For example, in its re-registration eligibility documents ("REDs") for the pesticides found to cause jeopardy in the 1993 BiOp, EPA's sole nod to 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

¹⁹⁷ CBD Report, *supra* note 7, at 52.

¹⁹⁸ 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). <http://www.epa.gov/oppfead1/international/piclist.htm>. However, there is no indication that these regulatory actions resulted from the BiOp.

use modifications will occur in the future under the Endangered Species Protection Program.”¹⁹⁹ Unfortunately, as described above, the county bulletin program is virtually non-existent, as it only addresses a very few species in a very few counties of the U.S., leaves to the pesticide user to decide whether or not to obtain the bulletins and whether or not to follow their instructions, and is completely unenforceable.

It is only fair to note that EPA has taken some very limited regulatory actions based on risks to wildlife, but not directly in response to recommendations of the Services under the ESA. However, out of the many thousands of pesticides and affected species, EPA has only taken a very small number of very limited actions due to wildlife impacts. In fact, the only reported judicial or administrative case in which EPA took regulatory action based primarily on risks to wildlife was *Ciba Geigy v. EPA*,²⁰⁰ in which EPA proposed canceling certain uses of the pesticide diazinon on golf course and turf grass due to the risk the pesticide posed to wild birds.²⁰¹ During the 1980s and 1990s, EPA considered canceling certain other pesticides based on risks to wildlife, but EPA failed to take any significant action to address such risks. In 1991, EPA proposed the cancellation of the pesticide ethyl parathion, due to risks to both humans and wildlife from the high acute toxicity of the pesticide. EPA ultimately accepted a settlement with the manufacturer of ethyl parathion, however, cancelling only the ground application uses of the pesticide, which posed significant risks to human 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

¹⁹⁹ The REDs, including those for the pesticides evaluated in the 1993 BiOp (Aluminum and Magnesium Phosphide, Brodifacoum, Bromadiolone, Bromethalin, Chlorophacinone, Diphacinone, Pival, Sodium Cyanide, Sodium Fluoroacetate, Warfarin, and Zinc Oxide) can be viewed at <http://www.epa.gov/pesticides/pestlabels/index.htm>.

²⁰⁰ 874 F2d 277 (5th Cir. 1989).

²⁰¹ *Id.* at 278. Specifically, the case addressed the question of whether FIFRA requires a precise determination of risk or harm (e.g. the chemical has adverse effects 51% of the time it is used) in order to support cancellation of a registration. *Id.* Another related point of contention was whether devastating effect on bird populations or merely a significant adverse effect would justify cancellation. *Id.* at 280. In this case, the chemical company’s contentions, that there should be more exact thresholds and more significant effects on the overall bird population, were rejected by the court. *Id.* The Fifth Circuit held that FIFRA gives the Administrator sufficient discretion to conclude that recurring bird kills are an unreasonable adverse environmental effect regardless of whether they significantly reduce bird populations. *Id.* Ultimately, the case was remanded to the Administrator to rectify the former administrator’s failure to read the word “generally” as meaning “usually,” “commonly,” or “with considerable frequency.” The phrase “generally causes unreasonable adverse effects on the environment” is also read to include any *potential* general causation of adverse effects. *Id.* at 279-280.

associated with this form of application.²⁰² 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 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 to pressure EPA and the manufacturer of the pesticide to end all uses.²⁰³ Nevertheless, despite the fact that ethyl parathion was considered to be one of the most acutely toxic pesticides and had been documented as the cause of thousands of bird kills, and despite decades of study by EPA, the agency itself failed to take regulatory action to protect wildlife. With regard to the granular form of another pesticide, carbofuran, which was implicated in the deaths of many birds that ingested the granules, presumably believing they were seeds, EPA entered into a settlement with the manufacturers in 1991 to phase out the use of the granular pesticide. However, EPA continues to allow the use of the liquid form of the pesticide, which has also been implicated in widespread bird mortality.²⁰⁴

Equally disturbing as EPA's failure to implement any recommendations from the two consultations it did conduct is that since 1993 EPA has not completed any formal consultations with the Services, whatsoever, and has rarely even initiated consultation unless explicitly required by court order or as part of a settlement agreement with environmental litigants.²⁰⁵ Clearly, the system is not working. This failure ultimately led to the rash of lawsuits in the early 2000's against EPA for its failure to comply with section 7 of the ESA.

As described above, in the past several years, EPA has come under increasing criticism for its failure to fulfill its obligations under the ESA.²⁰⁶ EPA

²⁰² See 56 Fed. Reg. 65061-01 (Dec. 13, 1991), 57 Fed. Reg. 3500-01 (Jan. 29, 1992), and 57 Fed. Reg. 6168-01 (Feb. 20, 1992).

²⁰³ Ethyl Parathion: Notice of Use Cancellation, 66 Fed. Reg. 47667-01 (Sept. 13, 2001).

²⁰⁴ See Mineau, *supra* note 30 at 322.

²⁰⁵ See *id.* FWS and NMFS have completely only approximately 12 consultations on pesticides in the past 13 years. See <http://www.eenes.net/Greenwire/searcharchive> (last visited December 1, 2004).

²⁰⁶ While a detailed discussion of the issues related to the relationship between pesticide laws and the ESA is beyond the scope of this article, those issues are the subject of a forthcoming article by the author. For a further discussion of these and related issues, see Patti A. Goldman, *Protecting Endangered Species From Pesticides: Making the ESA Work or Finding Loopholes*, SJ023 ALI-ABA 31 (2003); 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 (2004). 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

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.²⁰⁷ In a typical year, EPA makes hundreds of significant regulatory decisions regarding pesticide registration. For example, in 2003 alone, EPA registered 31 new pesticide active ingredients; approved the 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 28 registered active ingredients, and processed nearly 500 emergency exemption requests.²⁰⁸ 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 in the Federal Register a notice of its proposed implementation of the ESPP.²⁰⁹ The 2002 proposed ESPP was in essence a reiteration of the 1989 proposed ESPP, which was never finalized. The notice discussed how, via the ESPP, the 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.²¹⁰ The notice primarily discussed the EPA’s quantitative testing approaches undertaken in a pesticide registration process, including both exposure tests and toxicity tests on listed species.²¹¹

Another major focus of the notice was the revival of the county bulletin Program, in which the EPA announced that it would develop and update county bulletins and would post the bulletins on its website.²¹² The EPA announced that it would develop bulletins with the assistance of the FWS, NOAA, USDA, states

of regulatory attempts to weaken the consultation process including with regard to pesticide registration).

²⁰⁷ *Endangered and Threatened Species Effects Determination Program: Overview of the Ecological Risk Assessment Process in the Office of Pesticide Programs*, U.S. Environmental Protection Agency, Endangered and Threatened Species Effects Determinations 7 (January 23, 2004), available at

<http://www.epa.gov/oppfead1/endanger/consultation/ecorisk-overview.pdf>.

²⁰⁸ 67 FR 71549 December 2, 2002.

²⁰⁹ *Id.*

²¹⁰ *Id.*

²¹¹ *Id.* at 71553-54.

²¹² *Id.* at 71558.

and tribes, and would issue bulletins only for counties in which such measures are considered necessary.²¹³ 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, (4) a county map indicating where pesticide usage should be modified from its standard use.²¹⁴ The county bulletins would be designed to inform the public of pesticide application limitations in their community.²¹⁵ An interested pesticide user would review the county bulletins, which are available on the EPA's website, and check for any use restrictions or boundary requirements for pesticide application.²¹⁶ In addition to the substantive aspects of the Bulletins, the EPA proposed modifying pesticide labels to encourage users to follow the information contained within the County Bulletin.²¹⁷ 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.²¹⁸ 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.²¹⁹ Unfortunately, given EPA's poor track record in developing and updating county bulletins over the past 19 years, EPA's reiteration of this program in its 2002 proposal did little to comfort those concerned with protecting listed species from pesticides.²²⁰

The executive branch's response to the criticisms that EPA has failed to comply with the ESA in making pesticide regulatory decisions and criticism that the voluntary county bulletin program was inadequate to comply with the ESA or to protect listed species, as well its response to the recent court losses, has been to

²¹³ *Id.*

²¹⁴ *Id.*

²¹⁵ Pesticides: Endangered Species Protection Program, "How to Use the County Bulletins", available at <http://www.epa.gov/espp/how-to.htm> (last visited September 28, 2005).

²¹⁶ *Id.*

²¹⁷ *Id.*

²¹⁸ *Id.* at 71559.

²¹⁹ *Id.* The EPA also proposed the following generic label:

This product may have effects on federally listed threatened and endangered species or critical habitat in some counties. When using this product, you must follow the measures contained in the County Bulletin for the county in which you are applying the pesticide. To determine whether your County has a Bulletin consult <http://www.epa.gov/espp/usa-map.htm>. Bulletins also may be available from local pesticide dealers, extension offices, or State pesticide agencies.

Id.

²²⁰ CBD Report, *supra* note 7, 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. *Id.*

attempt to amend the joint regulations for consultation under section 7 of the ESA to eliminate the need for EPA to consult with the Services when making such decisions. On August 5, 2004, the Services and EPA issued a final rule regarding consultation practices among the Services and the EPA for pesticide registrations.²²¹ The agencies' purported rationale for the rule is to provide a more efficient approach to making decisions on whether new pesticides will "adversely affect" a listed species.²²² 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 . . . necessary for FIFRA actions," there will be no formal consultation for any FIFRA actions that the EPA determines are not likely to adversely affect (NLAA) any endangered species.²²³ Under the new rule, the EPA will make its own ESA analysis for NLAA determination purposes.²²⁴ Once the EPA makes its NLAA determination, the analysis is complete and there is no role for the Services to second-guess the EPA. If the EPA concludes that the FIFRA action is likely to jeopardize the continued existence of any listed species or its critical habitat, the EPA prepares an effects determination (which is 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.²²⁵ At that point the relevant Service will review the determination and may adopt it, modify it or provide its own biological opinion providing reasonable and prudent alternatives available to the EPA.²²⁶ In effect, the rule would allow EPA to bypass consultation if EPA concludes the pesticide regulatory decision is "not likely to adversely affect" a listed species, and if EPA concluded a regulatory action was "likely to effect" a listed species, EPA would in essence write the BiOps which the Services could adopt or modify.

The rule was widely criticized by environmental organizations.²²⁷ The primary criticism was that the rule would provide the EPA with an upfront approval by the FWS and NMFS of the EPA's risk assessment procedure while eliminating the oversight of the decision via the removal of post-assessment

²²¹ Joint Counterpart Endangered Species Action Section 7 Consultation Regulations, 69 Fed. Reg. 47732 (Aug. 5, 2004) (codified at 50 CFR Part 402.01).

²²² *Id.*

²²³ *Id.*

²²⁴ *Id.*

²²⁵ *Id.*

²²⁶ *Id.*

²²⁷ Patti A. Goldman, *Protecting Endangered Species From Pesticides: Making the ESA Work or Finding Loopholes*, ALI-ABA Conference on September 18-19, 2003, SJ023 ALI-ABA 31. See also CBD Report at 58. Not surprisingly, the rule was strongly supported by the FIFRA Endangered Species Task Force, a committee made up of 14 major agro-chemical companies. *Id.*

consultation.²²⁸ Critics argued that EPA staff did not possess the necessary expertise to make effects determinations without input from the Services. Further, allowing EPA to conduct a review of the effects a pesticide would have on listed species was criticized given that history has routinely shown that the FWS and NMFS have been critical of the EPA's scientific approaches in the consultation process.²²⁹ Environmental organizations feared that the new rule would undercut the ESA and put listed species at greater risk. Consequently, a number of environmental organizations filed suit alleging that the new rule violated the ESA.²³⁰

In 2006, a federal district court ruled that several of the provisions of the new rule were not consistent with the mandates of section 7 of the ESA.²³¹ 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.²³² The court found that these portions of the rule were, by their very terms, in conflict with the section 7 statutory mandate, and therefore, they could not survive a *Chevron* step one test.²³³ 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.²³⁴ As of the time of the writing of this Article, the district court's

²²⁸ *Id.*

²²⁹ *Id.*

²³⁰ On September 23, 2004, a coalition of eight environmental groups filed suit challenging the Joint Counterpart Endangered Species Act Regulation. *Id.*

²³¹ *Washington Toxics Coalition v. U.S. Fish & Wildlife Serv.*, 475 F.Supp.2d 1158 (W.D. Wash. 2006).

²³² *Id.*

²³³ *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). In *Chevron*, the Supreme Court established a two-step test for judicial review of an agency interpretation of a statute the agency is charged with implementing. Under step one, the Court looks to see if Congress has directly and unambiguously spoken to the issue. If so, Congress' clear statement is the proper interpretation of the statutory language. Under step two, if Congress has not spoken to the exact issue, or if the statutory language is ambiguous, the agency's interpretation is entitled to deference provided it is a permissible interpretation.

²³⁴ *Washington Toxics Coalition v. U.S. Fish & Wildlife Serv.*, 475 F.Supp. 1158, 1193.

Ironically, shortly after the 2006 *Washington Toxics Coalition* ruling, the federal 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 284432 (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. 10483 (2007).

ruling on the challenge to the new rule was on appeal to the U.S. Circuit Court for the Ninth Circuit.²³⁵

The recent court losses seem to have prodded EPA to reluctantly initiate at least some ESA consultations. Since 2004, in response to its loss in *Washington Toxics Coalition*, EPA has issued 87 “Effects Determinations,” all resulting from court orders or settlements. Of these, EPA has made 54 total LAA findings triggering consultation with the Services, in addition to the 28 consultations required by court order.²³⁶ To date, no consultations have been completed. Because the Services have not yet issued any jeopardy opinions on any of these recent consultations, EPA still has not implemented any risk reduction measures on any pesticides to reduce risks to listed species. In fact, despite the overwhelming loss in *Washington Toxics Coalition* the only risk reduction action, whatsoever, that EPA has taken in response to the Court Order 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.*” EPA has not even imposed this statement as a label requirement for the pesticides involved. Nor has EPA 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 2004, EPA also made available a document described as an overview of its Ecological Risk Assessment Process.²³⁷ 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,

²³⁵ *Washington Toxics Coalition v. U.S. Fish & Wildlife Serv.*, No. 06-35873 (9th Cir. Filed Oct. 17, 2006).

²³⁶ The author has 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 table is on file with the author.

²³⁷ U.S. Environmental Protection Agency, *Overview of the Ecological Risk Assessment Process in the Office of Pesticide Programs*, U.S. Environmental Protection Agency (January 23, 2004), available at <http://www.epa.gov/oppfead1/endanger/consultation/ecorisk-overview.pdf> (last viewed October 10, 2005).

including listed species.²³⁸ If the screening-level risk assessment indicates that a pesticide “may potentially impact, either directly or indirectly, listed species or critical habitat,” a species-specific and habitat-specific ecological risk assessment is conducted.²³⁹ The result is an effects determination that the pesticide will have “no effect,” “may affect but is not likely to adversely affect the species or critical habitat,” or “may adversely affect the species or critical habitat.”²⁴⁰ A “no effects” determination is reached when it is concluded that “there are no indirect effects and levels of concern (“LOCs”) for listed species are not exceeded for direct effects during the screening-level assessment.”²⁴¹ A “may affect” determination is reached when “indirect effects are anticipated or exposure may

²³⁸ Each active ingredient is subject to an individual risk assessment, but the EPA does not routinely include an evaluation of mixtures of active ingredients. *Id.* at 30. Assessment endpoints include direct effects, such as reduced survival and reproductive impairment, indirect effects on listed species, and effects on listed species critical habitat. *Id.* at 31-32. A suite of toxicity studies performed on a limited number of organisms representing broad groupings, such as birds, mammals, freshwater fish, etc., are used in the screening-level risk assessment. *Id.* at 32. Submissions of data for the registration of a new active ingredient or new use are reviewed for completeness for the proposed use. *Id.* at 33. Studies for effects are classified into core data, supplemental data, and invalid data. The EPA cannot register or reregister a pesticide in the absence of data needed to make the required findings under FIFRA. *Id.* The analysis phase of the screening-level risk assessment includes characterization of exposure and effects. The exposure characterization provides “a quantitative analysis of the critical environmental fate and transport properties of the pesticide active ingredient.” *Id.* at 34. Potential exposure of plants, wildlife, and aquatic life to pesticide residues in the environment are estimated using this information together with the pesticide use and conditions of the use site. The types of data used vary depending on the use site, but include controlled environmental fate and transport laboratory studies, persistence studies, mobility studies, bioconcentration studies, degradation studies, metabolism studies, and field studies. *Id.* at 34-35. Aquatic systems modeling uses a tiered system in order to allocate resources more efficiently to assessment efforts of varying complexities and potential risks. *Id.* at 37. Terrestrial organism exposure modeling generally emphasizes a dietary exposure route for uptake of pesticide active ingredients and assumes that organisms are only exposed to a single pesticide residue. *Id.* at 39-40. Estimates for terrestrial exposure are based on the application method: spray applications or granular, bait, and treated seed applications. *Id.* at 40. Effects characterization includes “describing the types of effects a pesticide can produce in an organism and how those effects change with varying pesticide exposure levels.” *Id.* at 41. The Risk Quotient (RQ) method for expressing risk is used in the screening-level assessment. *Id.* at 42. In addition to the data submitted by the registrant, the EPA also consults open literature studies for additional toxicity information to be used in the screening-level risk assessment. *Id.* at 44. The risk characterization phase integrates the effects and exposure characterization “to evaluate the likelihood of adverse ecological effects on non-target species.” *Id.* 46. The RQ method is used to compare exposure over toxicity. RQs are compared to Levels of Concern (LOCs), which are the EPA’s interpretive policy used to analyze potential risk to non-target organisms and the need to consider regulatory action. *Id.*

²³⁹ *Id.* at 65.

²⁴⁰ *Id.*

²⁴¹ *Id.*

exceed the LOCs for direct effects.” EPA uses “best professional judgment” to distinguish between actions that “may affect but are not likely to adversely affect” and those that are “likely to adversely affect” a listed species or critical habitat.²⁴²

As part of the Risk Assessment document, EPA itself recognizes a number of the assumptions, uncertainties, strengths, and limitations of the screening-level risk assessment.²⁴³ For example, for screening level risk assessment, the actual habitat requirements of the particular species are not considered. Instead, a maximum level of exposure is based on the assumption that the “species occupy, *exclusively and permanently*, the treatment area being modeled.”²⁴⁴ Another limitation is that only dietary exposure is considered for spray applications, excluding incidental soil ingestion exposure, inhalation exposure, dermal exposure, and drinking water exposure.²⁴⁵ Additionally, problems arise from the differences between laboratory and field conditions in regards to dietary intake.²⁴⁶

²⁴² *Id.* at 65. EPA further refines those aspects of the screening-level assessment for which a “not likely to adversely affect” determination could not be made. *Id.* at 65-66. EPA decides “whether use of the pesticide ‘may affect’ a particular listed species and if so, whether it is ‘likely to adversely affect’ the species.” *Id.* at 66. The overall goal for this process is “to protect the listed species and critical habitat by potentially modifying a pesticide’s use in a manner that is least disruptive to agriculture and other pesticide users.” *Id.* Data sources used at this level of risk assessment include the DANGER Program, best available and current information regarding biological requirements and habits of listed species, sub-county commodity information, geographic features precluding exposure, incident information, sales and use information, local use practices, and monitoring data. *Id.* at 67-69. The exposure characterization is refined using geographic proximity, specific assessment methodologies, and biological and habitat requirements. *Id.* at 69-70. Geographic proximity data is used to determine if there is overlap and, thus, potential for a listed species to be exposed to a pesticide. *Id.* The assessment methodology is reviewed to determine whether the methodology is the most appropriate for the species-specific or habitat-specific assessment. *Id.* at 70. However, it is seldom possible to have a model that exactly fits a particular site. FEAD determines whether there is any biological factor that would preclude exposure that may cause direct effects and, in the case of chronic effects, whether there is temporal overlap in pesticide residues and species activities and habits that may result in exposure at a level and duration that produces the effect. *Id.* at 70-71. During the risk characterization, EPA determines that an action “may affect” a listed species “if the RQ exceeds the endangered species LOC, and a species-specific analysis indicates temporal and spatial overlap between pesticide use and the species presence.” *Id.* at 71. A “no effects” determination is made when “there are no indirect effects nor exposure at levels that may result in direct effects.” *Id.* EPA distinguishes between “likely to adversely affect” determinations and “may affect but is not likely to adversely affect” determinations based on its best professional judgment of the significance and likelihood of effects. *Id.* Information on incidents, sales and use, local use practices, and monitored levels is used in conjunction with the degree to which LOCs were exceeded to determine whether the predicted effect based on labeled use of the product is likely to occur. *Id.* at 72.

²⁴³ *Id.* at 51.

²⁴⁴ *Id.* at 57.

²⁴⁵ *Id.* at 57-58.

²⁴⁶ *Id.* at 59.

A two-fold underestimation in exposure potential is created by not accounting for increased energy demands on organisms in the wild when comparing dietary residues to dietary toxicity thresholds.²⁴⁷ Another uncertainty is the relationship of the listed species' sensitivity to the most sensitive species tested.²⁴⁸ "[I]t is not likely that tested species represent the most sensitive species within the broad taxonomic groups used."²⁴⁹ Moreover, 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." Under this approach, apparently only when EPA makes a "likely to adversely affect" determination will it pursue consultation with the Services. However, as described above, 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. However, it is not entirely clear how the risk assessment process relates to the consultation process because nowhere in the risk assessment document does EPA acknowledge any role, whatsoever, for the Services expert input, whether it be via formal consultation, informal consultation, or some other mechanism. Another area of concern is that while the risk assessment document sets up an extremely complex methodology for assessing affects on wildlife, it does not amend the data requirements to require registrant or applicants to develop or submit more comprehensive or better data on wildlife effects. Instead, it continues to rely on the limited wildlife data requirements currently contained in 40 C.F.R. 158, which as described in more detail below, are extremely limited and do not address the full suite of risk concerns. 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.²⁵⁰

EPA's most recent effort to explain the ESPP occurred on November 2, 2005, when the EPA published a notice in the Federal Register describing how the ESPP will be implemented in the field.²⁵¹ The EPA describes its goal as meeting its responsibilities under FIFRA in compliance with the ESA and without unnecessarily burdening pesticide users. However, the EPA's plan is not a legally

²⁴⁷ *Id.* at 60.

²⁴⁸ *Id.* at 63.

²⁴⁹ *Id.*

²⁵⁰ CBD Report, *supra* note 7, at 54.

²⁵¹ 70 FR 66392 (2005).

binding regulation and the EPA may decide to change it at any time without notice and comment.²⁵²

Under the plan, pesticide actions, such as indoor products determinations and emergency exemptions under §18 of FIFRA, are potentially excluded from the scope of the ESPP.²⁵³ The “EPA’s overall strategy is to address listed species concerns within the context of the pesticide registration, reregistration, and registration review processes.”²⁵⁴ An effect determination based on the “EPA’s assessment of a pesticide use’s potential effects to listed species” is generally conducted to support the registration status of a pesticide (See Summary of the Endangered and Threatened Species Effects Determination Program).²⁵⁵

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.²⁵⁶ 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.²⁵⁷

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.”²⁵⁸ The 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.²⁵⁹ EPA intends to treat the bulletins just as any other label provision in terms of enforcement.²⁶⁰ The misuse and misbranding provisions of FIFRA, as well as liability under §9 of the ESA, will apply to pesticide users who fail to follow the applicable label provisions. In terms of monitoring, the EPA will continue to use

²⁵² *Id.*

²⁵³ *Id.* at 66398.

²⁵⁴ *Id.*

²⁵⁵ *Id.* at 66399.

²⁵⁶ *Id.* at 66400.

²⁵⁷ *Id.* Access to the bulletins will be provided at www.epa.gov/espp or 1-800-447-3813

²⁵⁸ *Id.*

²⁵⁹ *Id.*

²⁶⁰ *Id.* at 66401.

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.²⁶¹ The “EPA also intends to develop a process for monitoring the effectiveness of Bulletins after the Program has been in effect for some time.”²⁶²

It is difficult to understand how EPA believes it can make decisions regarding how to implement the ESPP in the field when EPA 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, and with 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. 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 the scientific minutia 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 35-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 U.S. House of Representatives, led by Congressman Richard Pombo (R-CA), passed the Threatened and Endangered Species Recovery Act of 2005 by a vote of 229- to- 193 on September 29th, 2005.²⁶³ 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.²⁶⁴ Most significantly as relates to this Article, however, section 20 of the House bill would provide that

²⁶¹ *Id* at 66402.

²⁶² *Id.*

²⁶³ H.R. 3824 Threatened and Endangered Species Recovery Act of 2005, 109th Congress, 1st Session. See also “House Okays overhaul of Endangered Species Act”, available at <http://www.cnn.com/2005/POLITICS/09/30/endangered.species.ap/> (last viewed October 12, 2005).

²⁶⁴ *Id.*

any agency action in compliance with FIFRA would also be deemed to be in compliance with the ESA.²⁶⁵ 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 to 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.²⁶⁶ After the House passage of the Pombo Bill, the Bill languished in the Senate, where Senate Committee on Environment and Public Works - Fish, Wildlife and Water Subcommittee Chair 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 House Bill appears to be dead, at least for the time being. Nevertheless, controversy over the ESA, as well as a variety of efforts to reauthorize the Act, continue.

V. *The Sources of Tension*

A. *Conflicting Goals*

To fully understand the conflicts between the ESA and FIFRA, it is helpful to consider the political and historic atmosphere in which each statute was enacted. The 1973 ESA was passed during the heyday of the environmental movement of the 1960s and early 1970s, against a backdrop of intense public concern over the health of the environment and fate of the dwindling populations

²⁶⁵ H.R. 3824, Section 20(a), page 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. "Implementation of the Endangered Species Act of 1973", Report to the House Committee on Resources, Richard W. Pombo, 109th Congress, May 2005, available at <http://resourcescommittee.house.gov/issues/more/esa/implementationreport.htm> (last viewed October 14, 2005).

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 criticizes the scientific uncertainty of listings, and the recovery priorities set by the FWS despite the actual probability of recovery. *Id.* at 3, 6. The report specifically describes the forty-one species that have been de-listed, noting that only ten domestic species had "recovered" since the advent of the ESA.²⁶⁵ The report lists statistics indicating the number of formal and informal agency consultations²⁶⁵, average cost for a species listing and critical habitat designation²⁶⁵ and the funding allocation for ESA programs. *Id.* at 8, 39-40, 59, 61.

²⁶⁶ See Bob Irvin, Pombo's 'All-Out Assault', The Sacramento Bee, Wednesday 22 February 2006. <http://www.truthout.org/cgi-bin/artman/exec/view.cgi/34/17945>.

of many wildlife species. During the 1960's, two more modest attempts to protect endangered species were enacted by Congress. The 1966 Act was limited to establishing a federal program for conservation and providing for species protection on federally-owned land.²⁶⁷ The 1969 Act focused on banning the importation of endangered species or endangered species' products.²⁶⁸ These early Acts, although important in their own right, did not satisfy the clear public desire for strong species protection. Therefore, Congress passed a more comprehensive ESA in 1973 with a clear objective to "act early to save a vanishing species."²⁶⁹ Accordingly, the 1973 ESA ambitiously sought to conserve, protect and encourage propagation of endangered species of both fish and wildlife through federal action and through the encouragement of state endangered species programs.²⁷⁰ To carry out these ambitious goals, the ESA granted broad authority to the Secretary of the Interior to list species as threatened or endangered, to enforce the prohibition on taking, and to carry out the consultation requirements of section 7. Unfortunately, neither the statute nor the legislative history provides detailed guidance on the consultation process.²⁷¹ Although the Senate Report provided analysis of the section 7 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."²⁷² Similarly, one of the few ESA Sections not discussed in the Conference Report²⁷³ was Section 7, and as a result there is little guidance from either the House or Senate as to the Section's requirements.²⁷⁴ Nevertheless, there was evidence in the legislative history that the ESA was intended to "substantially amplify the obligation" of federal agencies to use their authorities to carry out the purposes of the Act.²⁷⁵ 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.²⁷⁶ Thus, although the ESA was clearly intended to provide very aggressive protection of threatened and endangered species, the exact intent of Congress in passing section 7 was not clearly articulated at the time of passage.

²⁶⁷ *Id.* at 2990.

²⁶⁸ *Id.* at 2991.

²⁶⁹ *Id.*

²⁷⁰ S. Rep. 93-307, 2989-2990, July 6, 1973 (Commerce Committee).

²⁷¹ *Id.*

²⁷² *Id.* at 2994-3000.

²⁷³ H.R. Conf. Rep. 93-740, December 19, 1973 (House Conference Report).

²⁷⁴ *Id.*

²⁷⁵ Representative John Dingell (D-Mich), 119 Cong. Rec. 42913 (daily ed. Dec. 20, 1973), cited in *TVA*, 437 U.S. at 183-84.

²⁷⁶ *TVA v. Hill*, at 185.

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 into a then 60-year old statute, the Insecticide Act of 1910,²⁷⁷ that was designed to protect consumers from ineffective insecticide products and fraudulent claims about such products, which could cause crop losses. Environmental concerns did not play any role whatsoever in the 1910 Act or its subsequent amendments in 1947. In fact, when President Truman signed the 1947 legislation²⁷⁸ amending the 1910 Act, the New York Times printed a small blurb in the “News on Food” Section on page 26, describing it a law to “color poisons”.²⁷⁹ At the time of its passage, the primary groups concerned about pesticides were farmers (whose interests in government were advocated by the United States Department of Agriculture (USDA)); DDT was seen as a magic bullet against the pests and crop disease that in 1945 cost farmers \$360 million.²⁸⁰ Passage of the Act and the 1947 amendments was non-controversial in large respect because there were few opponents to the concept of widespread pesticide application, much less well-organized opponents.²⁸¹

Pesticide regulatory reform moved slowly, partially as result of the makeup of the primary regulating Congressional committees.²⁸² Of particular importance was James Whitten, who chaired the subcommittee on agricultural appropriations for the House Appropriations Committee.²⁸³ As subcommittee chair, Whitten was called the “Permanent Secretary of Agriculture,” and held this post from 1947 until 1992.²⁸⁴ He encouraged the USDA to pursue the means necessary to eradicate pests and advocated widespread pesticide application to accomplish this goal.²⁸⁵

The first backlash against unremitting pesticide application was seen in the late 1950’s, with federal government campaigns against the gypsy moth and fire

²⁷⁷ Act of Apr. 26, 1910, ch.191, 36 Stat. 331, repealed 61 Stat. 163, 172 (1947).

²⁷⁸ 61 Stat. 163 (1947).

²⁷⁹ Christopher J. Bosso, *Pesticides & Politics* 21 (1987).

²⁸⁰ *Id.* at 28-32.

²⁸¹ *Id.* at 34 (noting that few groups understood the potential effects of widespread use).

²⁸² *Supra* note 1, Bosso at 65-70 (describing how the seniority of Southern Democrats, who were generally against pesticide regulation, allowed them to head various committees).

²⁸³ *Id.* at 67.

²⁸⁴ *Id.* at 67.

²⁸⁵ *Id.* at 69.

ants.²⁸⁶ The most dramatic public backlash began with the *New Yorker* magazine's publication in 1962 of three articles by Rachel Carson arguing that pesticides were over-used despite the fact that their effects were poorly understood.²⁸⁷ The resulting public debate pitted scientist against scientist, arguing over the benefits of pesticide usage and the respective hazards.²⁸⁸ In the following years, pesticide regulation and reform came to the forefront, 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.²⁸⁹ Of additional importance was that environmental values were discussed in the 1964 bill whereas in 1947 such issues had no influence in the resulting legislation.²⁹⁰

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.²⁹¹ The effort to reform FIFRA responded in part to the delays the EPA faced when it sought removal of certain pesticides from the market.²⁹² 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 consumer protection licensing program. 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 man or the environment.²⁹³ The Senate Report explicitly noted the concern that "some [pesticides] may have long lasting adverse effects on the environment. Some may be taken up in the food chain and accumulated in man and other animals. Improperly used they may endanger bees and other useful insects, birds and other animals and their food supply."²⁹⁴

²⁸⁶ *Id.* at 81-94. Several groups complained about gypsy moth program's use of DDT suspended in oil, which led to high fish kills in northern states, and similarly, groups were concerned about the application of Dieldrin in high concentrations to fight the so-called fire ant "threat".

²⁸⁷ *Id.* at 115.

²⁸⁸ *Id.* at 121.

²⁸⁹ *Id.* at 127.

²⁹⁰ *Id.* at 127.

²⁹¹ Senate Report 92-970, 1972 U.S.C.C.A.N. 4092, 4093 (discussing the need for reforming the federal schematics for pesticide regulation).

²⁹² *Id.* at 4094.

²⁹³ Senate Report 92-838, 1972 U.S.C.C.A.N. 3993, 3995-96.

²⁹⁴ The Report provides a historical guideline to federal pesticide legislation, starting in 1910 with the Federal Insecticide Act. The Committee noted that the 1910 Act aimed to prevent the sale or manufacture of adulterated or mislabeled insecticides or fungicides. In 1947 the original FIFRA, which repealed and replaced the 1910 Act, focused on pesticide registration and warnings. In 1954, the so-called "Miller Amendment" was added, requiring manufacturers to test their pesticide

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. The 1972 revisions to the Act that brought environmental considerations into the purview of the Act were never the primary focus of the Act. 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.²⁹⁵

B. Conflicting Standards

One of the most significant conflicts between the ESA and FIFRA is the completely different standards that govern regulatory action under the respective statutes. As discussed above, FIFRA, at least in the way EPA has chosen to implement it over the past three or more decades, involves a balancing of the risks associated with the use of the pesticide against the social and economic benefits to society accruing from the use of the pesticide. Thus, even a pesticide that poses high risks to threatened or endangered species could be registered under FIFRA if that pesticide provides economic benefits that outweigh those risks. Section 9 of the ESA, on the other hand, prohibits "takes" of threatened and endangered species. Economic considerations do not come into play under this section. 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 to consider

before it was to be used on food crops, and to provide data on the toxicity of the chemical- the information allowed the Federal Food and Drug Administration to set a limit on the amount of chemical residue permissible on the food crop when sold. In 1959, Congress further amended FIFRA to include new forms of agricultural chemicals (e.g., defoliants and desiccants). The impact of pesticides upon wildlife was not addressed, however, until the 1972 amendments. *Id.* at 3999-4000. A 1963 Presidential Scientific Advisory Committee had recommended adding a pesticide's impacts on fish and wildlife as a factor for registration (prior to 1972, the impact upon "useful vertebrates and invertebrates was the only environmental consideration in the registration process). *Id.*

²⁹⁵ See *McGill v. EPA*, 593 F.2d 631, 635 (1979) (providing that FIFRA is aimed at not only at environmental goals, but also the economic interests of farmers and consumers).

economics in its registration decisions. Moreover, because pesticides are by their very nature intended to kill organisms in the environment and because there is habitat for the more than 1800 listed species throughout a wide and vast range of the territory of the United States, strict compliance with the ESA under the existing FIFRA framework likely would result in EPA banning or severely restricting 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 discussed above could result in extremely lengthy and complex label instructions that are unlikely to be complied with. Consequently, the existing FIFRA structure is simply incompatible with the mandates of the ESA.

As with the ESA, the MBTA's standards are not easily reconcilable with those of FIFRA. First, the MBTA imposes a strict liability standard for "takes" of migratory birds.²⁹⁶ Courts have applied this strict liability standard to pesticide-related bird deaths.²⁹⁷ 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."²⁹⁸ Moreover, as with the ESA, and as others have noted, pesticide labeling under FIFRA does not protect birds from poisoning.²⁹⁹

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 evaluates individual actions' impacts on a specific habitat and species. The ESA is concerned with preventing injury to

²⁹⁶ See 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, 329-31 (2004).

²⁹⁷ *United States v. FMC Corp.*, 572 F.2d 902 (2d Cir. 1978) & *United States v. Corbin*, 444 F.Supp. 510 (E.D. Cal. 1978).

²⁹⁸ Mineau, *supra* note 30 at 331-32.

²⁹⁹ *Id.* at 337-38. In this article, the author concludes that because 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.

individual members of each listed species and preventing significant modifications to the habitat of each listed species which would result in injury to the members of the species. Such modifications include habitat modifications that impact breeding and nesting, activities that typically occur in specific geographic locations during specific times of the year for each species. The ESA is also concerned with preventing injury to designated critical habitat, which by their very nature are geographically defined. Accordingly, the ESA is geographically and temporarily focused. 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 far exceed the environmental 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.

C. 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, an incidental take statement, which identifies actions which will not be considered to be a prohibited taking under section 9. The incidental take statement specifies the reasonable and prudent measures that must be implemented to minimize risk of takes. Unless these measures are complied with, any resulting takes will be a violation of the Act. These reasonable and prudent measures typically are very detailed and very species-specific, geographically defined and temporally defined. As described above, FIFRA's mechanisms for regulating use of pesticides to reduce risk is through label restrictions. Imposition

of detailed reasonable and prudent measures set forth in incidental take statements in BiOps is impracticable and unlikely to result in widespread compliance by purchasers and users of pesticides.

VI. The Solution

Without a doubt, due to the conflicting nature of many aspects of the ESA, the MBTA, and FIFRA, the best chance of resolving the problem is through legislative reform targeting to eliminate, or at least alleviate, the conflict and promote the reconcilable goals of wildlife protection and availability of pesticides in the public interest. To accomplish these goals, significant revisions to FIFRA are necessary. The basic standards and structure of FIFRA has been in existence without significant change since 1972. Experience has shown that many of its provisions are unworkable.³⁰⁰ As described above, the judiciary's attempt to

³⁰⁰ 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, pesticide regulation has received very little attention in the legal scholarly literature. One relatively recent article analyzing FIFRA proposes a revision in our nation's approach to pesticide regulation, shifting away from a risk-based effects analysis to a cause-based approach. Donald T. Hornstein, *Lessons from Federal Pesticide Regulation on the Paradigms and Politics of Environmental Law Reform*, 10 YALE J. ON REG. 369, 372 (1993). Hornstein begins with a description of earlier environmental regulatory theories- the technology-based approach and the market-focused approach, which, the author notes, have yet to be fully resolved. *Id.* at 375. In addition to the general philosophies underpinning the regulatory regime, the concept of risk reduction runs throughout the enabling statutes, and ideally could serve as a baseline metric for the disparate regulation requirements. *Id.* at 376-78. However, risk-oriented processes have their faults, as the author notes. *Id.* at 378-80. Risk assessments are made on sparse information, and while they tend to overstate the totality of harm, assessments fail to account for the distribution of harm. *Id.* at 378. As an alternative, the author discusses "cause-oriented" processes, which seek to reduce human impact on natural resources by using alternative, cleaner technologies or processes. *Id.* at 380. Such regulations aim to prevent pollution at the source rather than rely on expensive "end of pipe" technologies to clean already-created pollution. *Id.* at 381-82. Hornstein notes that this approach also has some drawbacks- namely, the distribution of the pollution avoidance burden may fall disproportionately on certain sectors, and there remains the potential that untested, alternative uses may cause more environmental damage than the replaced use. *Id.* at 384. Beginning with this framework, the Hornstein then discusses FIFRA, noting at the outset that despite pesticides are inherently toxic, FIFRA is not designed to reduce pesticide usage. *Id.* at 392-93. In fact, pesticide usage has increased 170% between 1964, the year of publication of Silent Spring and 1982. *Id.* at 392-93. Hornstein acknowledges the primary reason for pesticide use ("it works"), but then challenges this logic through comparison to crop yields in the pre-pesticide era and to alternative, non-chemical pest control measures. *Id.* at 393-94. Hornstein details how economically, farm use of pesticides potentially could exceed an individual farmer's cost-benefit analysis need for pesticides. *Id.* at 395. Unfortunately, farmers face a classic game theory problem (prisoner's dilemma)- while it does not necessarily help them to dump more and more pesticides, if all other farmers continue to do so the individual farmer's output vis-à-vis the overall agricultural output will suffer. *Id.* at 396. The author proposes two statutory reforms that

resolve the conflict between the statutes, although admirable, is limited by the legislative mandates in the statutes themselves.

Although Congress enacted the ESA approximately one year after the enactment of the core of FIFRA, and thus, it could 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, Congress has never made its intent clear. Legislative amendment of FIFRA could not only clarify that the cost/benefit standard of FIFRA in no way trumps the ESA standard, but in addition, it could set forth a clear articulation of how Congress intends the two statutes to be reconciled and could provide a road map for decision-making that reconciles the goals of the respective statutes.

Significant legislative changes are needed to reconcile the conflicting goals, standards, and methods of FIFRA with those of the ESA and MTBA. 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.³⁰¹ Many of those proposed changes would not only be consistent with eco-pragmatic theory, but would also go along way toward reconciling the conflicting goals, standards, and mechanisms of FIFRA and the ESA and MBTA. One of the most important revisions to FIFRA to further the dual goals of species protection and ESA compliance, while allowing pesticides needed for agriculture and public health protection is revising the standard for registering pesticides under FIFRA. EPA's cost/benefit balancing approach is not necessary dictated by FIFRA.³⁰² Nothing in the language of FIFRA mandates a strict cost/benefit

could assist these farmers- one, government subsidizing of integrated pest management (IPM) crop insurance premiums, and creating some form of oversight and potential liability for pesticide users. IPM seeks to use a whole range of methods to combat agricultural pests; its methods can include pesticides, but its goal is to meet certain environmental minimum standards. *Id.* at 401. Another recent article evaluating FIFRA from an eco-pragmatic perspective is Angelo, *supra* note 8.

³⁰¹ The theory of Eco-pragmatism was first developed by Professor Daniel Farber. For a discussion of this theory see String Cite ICTE. For a complete discussion of the application of eco-pragmatism to FIFRA, see Angelo, *supra* note 8.

³⁰² 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. See *Environmental Defense Fund, Inc. v. EPA* (heptachlor-chlordane), 548 F.2d 998, 1004 (D.C. Cir. 1976), *cert. Denied* 431 U.S. 925 (1977); *In the Matter of Chapman Chemical Co., et al.*, FIFRA Dockets No. 246 *et al.* (EPA 1976); *In the Matter of Protexall Products, Inc., et al.*, FIFRA Docket Nos. 625, *et al.* (1989). 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. ³⁰² See, e.g., *In the Matter of Chapman Chemical Company* (canceling certain uses of mercury

balancing. FIFRA merely directs EPA to “take into account” economic and social as well as environmental considerations. Nevertheless, this approach has been used for decades and endorsed by numerous administrative and judicial decisions.³⁰³ Under EPA’s cost/benefit interpretation, even a very high risk pesticide may not trigger cancellation if the economic benefits to be achieved are very high. Accordingly, if a pesticide poses a great economic benefit, high risks to vulnerable species, including listed species, will be tolerated. Thus, the manner in which EPA applies the “unreasonable adverse effects” standard as a strict cost/benefit balancing standard is not sufficient to protect species. Consequently, a legislative fix is warranted to clearly set forth 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 protecting the public from

in pesticides based on a finding that the risks of continued use outweighed the benefits); and In the Matter of Protexall Products, Inc., et al., FIFRA Docket Nos. 625, et al (1989)(describing the registrant’s burden in challenging a proposed cancellation as requiring a showing that the “benefits of continued use justify the risks”). As Professor William Rodgers has described it, the Congress intended the “unreasonable adverse effects” language to be an environmentally stringent standard for registration. RODGERS, *supra* note 73 at 451. 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.” *Id.* (quoting Senate Comm. on Commerce, Federal Environmental Pesticide Control Act of 1972, S.Rep. No. 970, 92d Cong., 2d Sess. 11 (1972). Thus, it appears that the standard contemplated by the drafters intended that, although economic and social factors should be considered and balanced against environmental risks, the balancing would not be a simple accounting of dollars and cents on two sides of the equation, with the pesticide winning the right to registration as long as the scale was tipped, no matter how slightly in favor of the benefits provided by the pesticide. Instead, the Senate drafters appeared to intend that, registration would be permitted only where any environmental or human health risks were outweighed by “overriding benefits.” Some examples of overriding benefits would be 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, or where a particular pesticide is necessary to the maintenance of a segment of agriculture, where nonchemical 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. However, as apparently contemplated by the drafters, an overriding benefit would not exist merely because if the particular pesticide were taken off the market, the manufacturers of the pesticide would lose money or farmers would have to switch to other existing more costly alternative pest control practices. 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.

³⁰³ Environmental Defense Fund, Inc. v. EPA (heptachlor-chlordane), 548 F.2d 998, 1004 (D.C. Cir. 1976), *cert. Denied* 431 U.S. 925 (1977); In the Matter of Chapman Chemical Co., et al., FIFRA Dockets No. 246 et al. (EPA 1976); In the Matter of Protexall Products, Inc., et al., FIFRA Docket Nos. 625, et al (1989).

serious diseases such as West Nile Virus, which 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 and to make clear that high risk pesticides may only be registered if there are overriding public health, social or economic benefits that justify registration. Such a revision would in effect force EPA to apply the standard originally contemplated by the Congress in enacting the 1972 FIFRA. Using this standard, economic and social benefits derived from use of the pesticide would be considered, but would not be the ultimate determining factor of 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 maintain its registration, the benefits of the use of such 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. Other overriding benefits would include the necessity of the particular pesticide to the viability of producing important food or fiber crops. The mere fact that without the particular pesticide, crop production would be more costly, however, would not in itself be considered an overriding benefit warranting the registration of the pesticide despite the fact that its use is likely to jeopardize the continued existence of a threatened or endangered species.

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. Thus, 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. At least with regard to the registration of pesticides, EPA’s analysis is not a true cost/benefit analysis because EPA 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 that efficacy data be provided when registering a pesticide.³⁰⁴ 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

³⁰⁴ The lack of a requirement for efficacy data is in contrast to other licensing statutes, such as the licensing provisions of the Federal Food Drug and Cosmetic Act governing the approval of new drugs, which explicitly requires a finding that a drug is “effective” as part of the premarket review process. A new drug is considered to be “effective” if there is a general recognition among experts, founded on substantial evidence, that the drug in fact produces the results claimed for it under prescribed conditions. 21 U.S.C. § 111 (2004).

diseases to humans.³⁰⁵ 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.³⁰⁶ 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. Consequently, pesticides are registered without any finding that pesticide works for its intended purpose, that the pesticide is necessary for addressing particular pests, or that existing chemical or non-chemical alternatives are not available. 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 EPA begins to consider whether to cancel the registration of a pesticide that. 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 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 do 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, comparing the risks and benefits of the pesticide proposed for cancellation with those of existing available pesticides. This leads to the result where the order in which pesticides are identified for cancellation determines which pesticide will remain registered,

³⁰⁵ 40 C.F.R. § 158.640 (2005). The only pesticides for which EPA requires efficacy data are pesticides intended to control microbial organisms that affect human health and certain vectors of public health diseases. *See id.* (containing product performance data requirements for antimicrobial agents, products for treating water systems, and pesticides intended to kill or repel rodent, avian, and bat vectors). However, EPA has reserved the right to require, on a case-by-case basis, submission of efficacy data for other pesticides. *Id.*

³⁰⁶ Many safe and effective alternatives to chemical pesticides exist and are available, including botanicals, microbials, minerals, beneficial insects, organic farming practices and cultural controls. *See* CBD Report at 60.

regardless of the relative risks of such pesticides. For instance, a moderate risk pesticides 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 very likely will 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 relative risk analysis, that compares the risks of pesticides targeted at the same pest.

It is worth noting that although EPA does not routinely consider the relative risks of alternative pesticides when making registration or cancellation decisions, EPA has attempted to encourage the development and registration of lower risk pesticides as a matter of policy. For example, in 1997, EPA issued Pesticide Registration (PR) Notice 97-3, which sets forth EPA’s policy for the expedited review of reduced risk conventional pesticides and biological pesticides.³⁰⁷ The policy is intended to encourage the development, registration and use of lower-risk pesticides products “which would result in reduced risks to human health and the environment, when compared to existing alternatives.” To accomplish this goal, EPA provides the incentive of an expedited registration review for pesticides that meet specified qualifying criteria: the pesticide 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.”³⁰⁸

³⁰⁷ This policy was developed partially in response to the 1996 Food Quality Protection Act mandates to develop procedures and guidelines for expedited pesticide review. The policy supersedes EPA’s prior reduced-risk criteria published in 57 Fed. Reg. 32140 (July 20, 1992) and 58 Fed. Reg. 5854 (Jan. 1993) and PR Notice 03-9 (July 21, 1993).

³⁰⁸ These criteria are found in FIFRA § 3(c)(10), 7 U.S.C. § 136a(c)(10). 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. These factors include, in descending order of importance: very low mammalian toxicity; toxicity generally lower than alternatives (10-100times); displaces chemicals that pose potential human health concerns [e.g., organophosphates, probable carcinogens (B2s)]; reduces exposure to mixers, loaders, applicators and reentry workers; very low toxicity to birds; very low toxicity to honeybees, significantly less toxicity/risk to birds than alternatives; not harmful to beneficial insects, highly selective pest impacts; very low toxicity to fish; less toxicity/risk to fish than alternatives; potential toxicity/risk to fish mitigatable/similar toxicity to fish as alternatives, but significantly less exposure; low potential for groundwater

FIFRA must be amended to make clear that benefits shall not be assumed, that efficacy data are required to establish benefits, and that essentiality may be required to demonstrate overriding benefits in situations where threatened or endangered species are being put at risk. For example, registration applicants should be required to demonstrate that the pesticide they are seeking to register is efficacious and will provide overriding benefits. As discussed above, currently FIFRA allows EPA to waive efficacy data, and allows pesticides to be registered without a showing of necessity or a consideration of whether lower risk alternatives are available. Availability of lower risk alternatives should be required not only when deciding whether to cancel a registration, but also at the time of registration and reregistration. Another recommended revision to EPA's cost/benefit approach to FIFRA registration is to require that the benefits provided by a pesticide actually be demonstrated. Moreover, at any stage of the regulatory process (registration, re-registration, cancellation), EPA must be directed to consider whether other pest control alternatives, including non-chemical control measures and other lower risk alternatives prior to registering a pesticide that is likely to result in jeopardy. If such alternatives are available, the jeopardy causing pesticide cannot be shown to have overriding benefits.

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 for benefits, does not fully address the wide array of environmental or economic costs posed by pesticides.³⁰⁹ Environmental and economic costs which EPA does not typically address 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 significantly greater than \$8 billion/year.³¹⁰ Further, Pimentel notes that because many

contamination; lower use rates than alternatives, fewer applications; low pest resistance potential (i.e., new mode of action); highly compatible with IPM; efficacy. PR 97-3 at 3-4.

³⁰⁹ See generally *Pimentel*, supra note 12, at 47-73.

³¹⁰ *Id.* at 72.

additional true costs of pesticide use are either not well understood or difficult to quantify, the true cost of pesticide use may be substantially higher than his \$8 billion estimate. Unfortunately, very few of these costs are ever considered by EPA.

One step toward improving EPA's protection of wildlife is making its pesticide regulatory decisions would be to revise the data requirements to better evaluate the full range of risks to wildlife species, including ESA listed species and species protected by the MBTA as well as other wildlife protection laws.³¹¹ 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."³¹² However, as described above, 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.

Perhaps the most significant change to FIFRA necessary to ensure species protection to amend the statute to create a mechanism for regulating pesticide use based on localized decision-making. Such decision-making can take into account geographic location of species, migratory, nesting and breeding patterns, and other local conditions.³¹³ Currently, FIFRA does not provide a mechanism for

³¹¹ 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 (2005). More detailed standards for conducting tests, guidance on evaluation, and reporting of data and additional guidance is 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) and 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); 40 CFR 158.35 (describing the flexibility in data requirements) and § 158.45 (regarding 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.

³¹² *Id.* § 158.202(h)(1).

³¹³ 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 17. 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

localized decision-making regarding whether the risks of certain pesticides should preclude their use in certain areas or in certain manners. Ironically, although FIFRA does not contain a mechanism for considering of local conditions when evaluating risks posed by the pesticide, it does authorize states to take into consideration “special local needs” to issue state registrations for pesticide uses that are not federally registered.³¹⁴ This 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, buffers around waterbodies, buffers around nests, restrictions on spraying certain pesticides during certain times of years to avoid migration, breeding or nesting, 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.³¹⁵ 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.

requirements or pesticide monitoring system, lacks any comprehensive framework for the regulation of agricultural pesticide use. *Id.* at 311.

³¹⁴ 7 U.S.C. § v(c).

³¹⁵ 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 analyzed 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.

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, as well as providing incidental take statements to provide legal protection for the limited takes that cannot be avoided. The consideration of local factors in determining a specific pesticide use should be permitted in a 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 decision can be made based on local factors such as the presence of threatened, endangered or otherwise rare species, presence of 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. Moreover, most states do not have pesticide permitting systems that address the use of pesticides under localized conditions. In fact, most states do not require obtaining site-specific permits before a pesticide can be applied, even for large scale agricultural pesticide application into the environment,³¹⁶ and 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 similar to the cooperative federalism regulatory systems established in other federal environmental laws, such as the Clean Water Act.

³¹⁶ Some states do have limited permitting requirements for pesticide use, however 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.* at § 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. However, the permit is for a one-year duration and is not specific to the date or time of application. *See* MASS. REGS. CODE tit. 333, § 13.05(3)(b) (2004). Nevertheless, a site inspection is required prior to permit issuance, which presumably means that local conditions are assessed prior to issuing the permit. *Id.* 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.* § 13.03(18). Similarly, in Vermont, one-year duration permits are required for aerial application of pesticides. *See* VT. CODE R. 20 031 012 § IV (5) (2003).

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, where the habitat of listed species is, where nests or breeding grounds are, migration routes, or migration, breeding or nesting season for 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 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, the EPA would consult with the Services at the time of registration or reregistration for issues of nationwide concern to see if pesticide should be registered in 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 pesticides applications in particular locations. The permitting agency would make the decision based on geographic and temporal factors such as whether there are threatened or endangered species using area, 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 what site and use specific restrictions, based on the reasonable and prudent alternatives from the BiOp, are warranted. Thus, under this approach, even high toxicity 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. 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 time and resources fighting lawsuits and developing ever more creative contortions to attempt to avoid compliance with species protection laws.

V. Conclusion

Due to the conflicting goals, standards, focus, and methods of U.S. 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 to 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 35 years.