THE REGULATORY VACUUM: HOW MARIJUANA'S SCHEDULE I STATUS IMPERILS ENDANGERED SPECIES IN THE EMERALD TRIANGLE

By
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The U.S. Fish and Wildlife Service (the Service) is unable to adequately address Endangered Species Act (ESA) petitions because marijuana's Schedule I status creates a regulatory vacuum. Marijuana growers use pesticides, many of which are lethal at certain concentrations. Typically, these pesticides are highly regulated by the Environmental Protection Agency (EPA). Farmers may only use pesticides specifically prescribed for use on the plant or crop. EPA has been unable to research or register pesticides for use on marijuana plants, and as a result, growers use pesticides at abnormally high concentrations. Wildlife in northern California and Oregon are directly harmed as a product of the regulatory vacuum. Endangered species like the Humboldt marten[1] and the Pacific fisher[2] have high rates of rodenticide exposure, which marijuana growers use on their plants and leads to deadly concentrations of bioaccumulated rodenticide.

Environmental groups have filed numerous petitions to protect these species under the ESA. But the Service cannot adequately address the very real threat of rodenticide because of the regulatory vacuum. Congress must remove marijuana from Schedule I. The integrity of the ESA relies on sound judgment from the Service, but the current regulatory environment corrupts the Service's ability to protect endangered species. The regulatory vacuum is deadly for the Humboldt marten and the Pacific fisher.

This Article first provides a discussion of the ESA's petition process for context. Next, it outlines how the absence of federal regulation causes wildlife deaths in Oregon and California. The Article then examines why the Service is unable to effectuate its duties to protect endangered species. Lastly, the Article posits that coherent federal regulation will save threatened species in the future.

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[1] Endangered and Threatened Wildlife and Plants; Threatened Species Status for Coastal Distinct Population Segment of the Pacific Marten, 83 Fed. Reg. 50574, 50575 (Oct. 9, 2018) (codified at 50 C.F.R. pt. 17).

[2] Endangered and Threatened Wildlife and Plants; Threatened Species Status for the West Coast Distinct Population Segment of Fisher, 84 Fed. Reg. 644, 645 (proposed Jan. 31, 2019) (to be codified at 50 C.F.R. pt. 17).

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I. IN ORDER FOR A SPECIES TO RECEIVE PROTECTION UNDER THE ESA A PARTY MUST PETITION THE U.S. FISH AND WILDLIFE SERVICE FOR THE SPECIES' CONSIDERATION

The purpose of the Endangered Species Act (ESA) is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes [of the ESA] . . . ."[3] Any person may petition "to add a species to, or to remove a species from" the endangered species list.[4] The U.S. Fish and Wildlife Service (the Service) must then promptly "make a finding as to whether the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted. If such a petition is found to present such information, the Secretary shall promptly commence a review of the status of the species concerned."[5] If the Service proceeds, it must publish its findings in the federal register within twelve months.[6] The analysis must be conducted "solely on the basis of the best scientific and commercial data available to [the Service] . . . ."[7] A finding that denies a petition is subject to judicial review.[8]

The Service must analyze five factors, set out in 16 U.S.C. § 1533(a)(1), "for deciding whether to add a species to the Federal Lists

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[3] Endangered Species Act of 1973, 16 U.S.C. § 1531(b) (2012).
[4] *Id.* § 1533(b)(3)(A).
[5] *Id.*
[6] *Id.* § 1533(b)(3)(B).
[7] *Id.* § 1533(b)(1)(A).
[8] *Id.* § 1533(b)(3)(C)(ii).

of Endangered and Threatened Wildlife and Plants."[9] The factors are "(A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence."[10]

The Service cannot adequately address these factors because of the regulatory vacuum, which allows growers to use unregistered pesticides at incredible concentrations.[11] Moreover, the Service cannot precisely determine how the pesticides impact wildlife because the Environmental Protection Agency (EPA) has been unable to research the pesticides for use in marijuana crops.[12]

II. PESTICIDES USED IN MARIJUANA CULTIVATION ESCAPE FEDERAL REGULATION AND WILDLIFE PAYS THE PRICE

This Article posits that the U.S. Fish and Wildlife Service (the Service) cannot adequately address the § 1533 factors because marijuana cultivation leaves endangered species' habitat susceptible to unregulated chemical pesticides. Two species face the risk of extinction—the Humboldt marten[13] and the Pacific fisher[14]—in northern California and Oregon. Environmental groups have sought Endangered Species Act (ESA) protections for both species via the petition process.[15]

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9 Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv., 246 F. Supp. 3d 1272, 1277 (N.D. Cal. 2017) [hereinafter *Ctr. For Biological Diversity I*].

10 16 U.S.C. § 1533(a)(1).

11 *See generally* Nate Seltenrich, *Into the Weeds: Regulating Pesticides in Cannabis*, 127 ENVTL. HEALTH PERSP. (Apr. 25, 2019), https://ehp.niehs.nih.gov/doi/10.1289/EHP5265 [https://perma .cc/PU3V-QP8W] (accessed Jan. 2, 2020) (describing the issue of regulating pesticides in cannabis cultivation).

12 *See id.* (explaining that because the cultivation of cannabis is not federally legal, it cannot be federally regulated).

13 Endangered and Threatened Wildlife and Plants; Threatened Species Status for Coastal Distinct Population Segment of the Pacific Marten, 83 Fed. Reg. at 50574; *see Ctr. for Biological Diversity I*, 246 F. Supp. 3d at 1277 (stating the three regional marten sub-populations are "uniquely vulnerable to extinction").

14 Endangered and Threatened Wildlife and Plants; Threatened Species Status for West Coast Distinct Population Segment of Fisher, 79 Fed. Reg. 60419-43 (Oct. 7, 2014) (codified at 50 C.F.R. pt. 17); *see* Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv., 342 F. Supp. 3d 968, 971–72 (N.D. Cal. 2018) (stating the Service recognized "isolation of small populations and the higher risk of extinction due to stochastic events" for the Pacific fisher is the species' "greatest long-term risk") [hereinafter *Ctr. for Biological Diversity II*].

15 *See generally Humboldt Martens Proposed for Endangered Species Act Protection*, EARTHJUSTICE (Oct. 5, 2018), https://earthjustice.org/news/press/2018/humboldt-martens-proposed-for-endangered-species-act-protection [https://perma.cc/AQF3-BFBK] (accessed Jan. 2, 2020) (discussing the background of the listing of the marten); *Protecting the Endangered Pacific Fisher*, EARTHJUSTICE, https://earthjustice.org/our_work/cases/2010/pacific-fisher-warranted-but-precluded [https://perma.cc/547E-MASB] (accessed Jan. 2, 2020) (providing an overview of the endangered fisher).

Both species are adversely affected by rodenticides used in marijuana cultivation.[16]

Marijuana growers, like all farmers, rely on pesticides and other chemicals to protect their crops from insects, animals, and harsh weather. Pesticides are regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which governs the use, distribution, and sale of pesticides.[17] "Pesticide regulations are narrow and confusing. A product approved for use on soybeans or corn can only be legally used for those products. It's illegal to go off-label and use a pesticide on another crop."[18] This means that growers can only use pesticides on their crops that are regulated for use on such crops.

No pesticides, however, are approved for marijuana cultivation.[19] In fact, "anyone growing cannabis for marijuana use in the 30 states that have legalized it will still be prohibited from using pesticides on their plants, whether they are grown commercially or for personal use."[20] Cannabis's designation under Schedule I of the Controlled Substances Act (CSA) prevents pesticide research in connection with the plant's cultivation.[21] "Under FIFRA, the Environmental Protection Agency (EPA) sets pesticide tolerance for each crop . . . . As long as Cannabis remains a Schedule 1 drug under federal law, the EPA cannot recognize it as a legal crop thereby preventing the establishment of pesticide tolerances."[22]

The EPA's inability to register pesticides for marijuana cultivation leaves a remarkable regulatory vacuum. Marijuana growers are faced with a decision: illegally use registered pesticides on their marijuana crops or accept the risk of crop loss.[23] In 2015, researchers identified sixty-five pesticides used by marijuana growers.[24] The regulatory vacuum means the "EPA . . . fails to examine the potential health effects of pesticide compounds on Cannabis by not offering a comprehensive risk assessment at the federal level."[25] This includes the risks of toxic

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[16] *Ctr. for Biological Diversity I*, 246 F. Supp. 3d at 1286; *Ctr. for Biological Diversity II*, 342 F. Supp. 3d at 973; Endangered and Threatened Wildlife and Plants; Threatened Species Status for West Coast Distinct Population Segment of Fisher, 79 Fed. Reg. at 60432–33; Endangered and Threatened Wildlife and Plants; Threatened Species Status for Coastal Distinct Population Segment of the Pacific Marten, 83 Fed. Reg. at 50575.

[17] 7 U.S.C. § 136(u) (1996).

[18] Brian Wallheimer, *Legal Hemp Raises Questions About Pesticides*, PURDUE U. NEWS (Dec. 20, 2018), https://www.purdue.edu/newsroom/releases/2018/Q4/legal-hemp-raises-questions-ab out-pesticides.html [https://perma.cc/B7HA-WQYR] (accessed Jan. 2, 2020).

[19] *See* Leah N. Sandler et al., *Cannabis as Conundrum*, 117 CROP PROTECTION 37, 38 (2019) (noting that no pesticides are labeled for industrial hemp production either, which is now legal in the U.S. under the 2018 Farm Bill).

[20] Wallheimer, *supra* note 18.

[21] Sandler et al., *supra* note 19, at 39.

[22] *Id.*

[23] *See id.* at 41 (describing the decisions marijuana growers must make regarding their crop).

[24] *Id.*

[25] *Id.* at 42.

exposure to local wildlife like the Humboldt marten and the Pacific fisher.

III. THE REGULATORY VACUUM MEANS THAT THE SERVICE CANNOT ADEQUATELY EXAMINE HOW PESTICIDE USE IN MARIJUANA CULTIVATION IMPACTS WILDLIFE

One pesticide in particular—anticoagulant rodenticide—has had an especially devastating impact on wildlife in northern California.[26] "Anticoagulant rodenticides inhibit the ability of mammals and birds to recycle vitamin K, scientists say, resulting in clotting and coagulation problems including uncontrollable internal bleeding."[27] Anticoagulant rodenticides bioaccumulate throughout the entire food chain of the Pacific Northwest region.[28] Researchers have linked rodenticide to the deaths of owls, mountain lions, Humboldt martens, Pacific fishers, and other species throughout northern California, Washington, and Oregon.[29]

The "main sources of anticoagulant rodenticide exposure in California are illegal marijuana grows, where anticoagulant rodenticides are used to discourage herbivory and poison rats that might chew on young marijuana plants."[30] About 15,000 private marijuana farms operate in Humboldt County, California without regulatory oversight.[31] Many of these farms are illegal; hundreds of illegal marijuana grow sites are found in California's national forests each year.[32] Remarkably, the U.S. Forest Service shut down one million illegal grow sites throughout the country last year.[33] Although California banned the sale of anticoagulant rodenticides in 2014, rampant unregulated use continues.[34]

Unregulated use means that growers disregard probable Environmental Protection Agency (EPA) standards for pesticide application. This is the classic example of the regulatory vacuum theory: business

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[26] *See* Maria Finn, *Cannabis Growth is Killing One of the Cutest (and Fiercest) Creatures in the US*, GUARDIAN (June 27, 2018), https://www.theguardian.com/environment/2018/jun/27/cannabis-humboldt-marten-california-endangered [https://perma.cc/MG57-3F38] (accessed Jan. 2, 2020) (describing the serious harm to various species—particularly the Humboldt marten—the anticoagulant rodenticide has caused).

[27] Louis Sahagun, *Rat Poison from Marijuana Farms is Harming Federally Threatened Northern Spotted Owls, Study Finds*, L.A. TIMES (Jan. 11, 2018, 5:00 AM), https://www.latimes.com/local/california/la-me-owls-marijuana-poison-20180111-story.html [https://perma.cc/46LX-CC9W] (accessed Jan. 2, 2020).

[28] *Id.*

[29] Elizabeth Flock & Mark Scialla, *Illegal Marijuana Growers Poison Forests—These People Fight Back*, NAT'L GEOGRAPHIC (Apr. 8, 2019), https://www.nationalgeographic.com/environment/2019/04/illegal-marijuana-growing-threatens-california-national-forests/ [https://perma.cc/X2QS-428V] (accessed Jan. 2, 2020); Finn, *supra* note 26.

[30] *Ctr. for Biological Diversity II*, 342 F. Supp. 3d at 973.

[31] Sahagun, *supra* note 27.

[32] Flock & Scialla, *supra* note 29.

[33] *Id.*

[34] Sahagun, *supra* note 27.

will create its own rules. Research has shown that marijuana growers—particularly illegal growers—apply considerably more rodenticide than the EPA would likely allow.[35] As considered by the Cannabis Business Times:

> In California, Colorado, Washington and Oregon, they're testing samples of marijuana or cannabis for CBD and they're finding pesticides that are not legal to use, and in some instances, they're finding them in levels that are 100 to 1,000 times more than what would be legally acceptable in commensurate crops.[36]

Marijuana growers even use illegal pesticides; researchers and U.S. Forest Service police have seized carbofuran, a pesticide that the EPA banned in 2010.[37] Enforcement actions throughout the last decade describe the periodic "pesticide misuse" in states throughout the country.[38] State authorities in Maine and California, for example, have found violations of state law with regard to pesticide application on marijuana crops.[39] Indeed, "according to interviews with numerous dispensaries, illegal pesticide use is common."[40] Notwithstanding the serious dangers endangered species face as a result of illegal pesticide use, this issue raises concerns outside the scope of this Article regarding occupational exposure and user exposure to pesticides.[41]

Marijuana's Schedule I listing prohibits the EPA from studying and registering pesticides for use during marijuana cultivation. Marijuana growers—legal and illegal—are forced to use pesticides not regulated for use on marijuana plants and oftentimes at concentrations significantly higher than EPA would allow.[42] The manner in which

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[35] *See* Flock & Scialla, *supra* note 29 ("While studying causes of mortality, disease, and decline in the population, they realized that the fishers were often dying of different types of poison. They eventually tracked the source to pesticides on illegal marijuana grow sites in remote forests, which are often in fishers' home range . . . In a study published in PLoS ONE, they found that 46 of 58 fisher carcasses they tested had been exposed to an anticoagulant rodenticide, or rat poison.").

[36] Melissa Schiller, *Purdue Researchers Tackle Cannabis Industry's Pesticide Problem*, CANNABIS BUS. TIMES (Jan. 9, 2019), https://www.cannabisbusinesstimes.com/article/purdue-researchers-cannabis-pesticide-problem [https://perma.cc/DJ8M-JF7P] (accessed Jan. 2, 2020).

[37] *See e.g.*, Flock & Scialla, *supra* note 29 ("Gabriel found several containers of over-the-counter pesticides, as well as a bottle containing a milky white substance he suspected to be carbofuran, which the Environmental Protection Agency banned in 2010.").

[38] Dave Stone, *Cannabis, Pesticides and Conflicting Laws: The Dilemma for Legalized States and Implications for Public Health*, 69 REG. TOXICOLOGY AND PHARMACOLOGY 284, 284–88 (2014).

[39] *Id.*

[40] *Id.*

[41] *See generally id.* (discussing the health risks cannabis workers face due to occupational exposure to pesticides).

[42] Flock & Scialla, *supra* note 29 ("Growers often use pesticides, some of them banned and highly toxic, to protect the marijuana plants and their camps from insects and animals."); *see also* Jenna H. Bishop, *Weeding the Garden of Pesticide Regulation: When the Marijuana Industry Goes Unchecked*, 65 DRAKE L. REV. 223, 232–33 (2017) ("[S]o long as marijuana remains classified as a Schedule I substance under the [Con-

growers use pesticides currently poison wildlife, which can seriously threaten certain species that are already at risk of extinction.[43] The U.S. Fish and Wildlife Service (the Service), in particular, must be able to properly assess the threat of rodenticide when it addresses an Endangered Species Act (ESA) petition. The regulatory vacuum, however, means that the Service lacks the necessary data to adequately assess the risk rodenticide poses to wildlife.

This is a unique situation for the Service, which requires a unique response. The Service cannot ask EPA to regulate rodenticide for marijuana cultivation because marijuana is a Schedule I drug.[44] It also cannot fully understand the impact that rodenticide use has on wildlife. Accordingly, the Service must adopt a deferential standard that tends to overemphasize the risk of rodenticide used in marijuana cultivation until further notice. Failing to adopt this standard corrupts the intent of the ESA.[45] The Service is obligated to protect endangered species to the very best of its ability.

Two species in particular—the Humboldt marten and the Pacific fisher—are dying partly from rodenticide exposure.[46] Both species "love cannabis plants because of the high water and sugar content that these plants have . . . . [I]n order to dissuade them from damaging their cannabis plants, cultivators are placing the anticoagulant rodenticides out there."[47] The species ingest rodenticide applied to cannabis plants and the chemicals bioaccumulate throughout the food chain.[48]

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trolled Substances Act], it is unlikely the EPA will approve of any pesticides for marijuana plants or publish any substantial recommendations regarding the safe use of pesticides with marijuana plants.").

[43] *See* Flock & Scialla, *supra* note 29 ("While studying causes of mortality, disease, and decline in the population [of Pacific fishers, a small, predatory mammal and threatened species in the state of California], they realized that the fishers were often dying of different types of poison. They eventually tracked the source to pesticides on illegal marijuana grow sites . . . which are often in the fishers' home range.").

[44] *See* Bishop, *supra* note 42, at 223 ("[B]ecause the federal government continues to classify marijuana as a Schedule I substance under the Controlled Substances Act, the Environmental Protection Agency has not filled its usual role of approving pesticides as safe for use on crops with regard to marijuana.").

[45] *See* 16 U.S.C. § 1531(b) ("The purposes of this chapter are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section.").

[46] *See* OR. FOREST RES. INST., WILDLIFE IN MANAGED FORESTS: FISHER AND HUMBOLDT MARTEN 3, 4, 7, 10 (2018), https://oregonforests.org/sites/default/files/2018-12/ManagedForests_Carnivores_2018-WEB.pdf [https://perma.cc/9B68-UQHG] (accessed Jan. 3, 2020) (detailing the threats from rodenticide exposure posed to fisher and Humboldt marten populations). The species are also threatened by wildfires, global warming, reduced habitat, and segregated habitat. *Id*.

[47] Tara Lohan, *Endangered Wildlife are Getting Dosed with Rat Poisons*, TRUTHOUT (Mar. 4, 2019), https://truthout.org/articles/endangered-wildlife-are-getting-dosed-with-rat-poisons/ [https://perma.cc/Q3CS-RNZV] (accessed Jan. 3, 2020).

[48] *See id.* ("Documentation . . . shows that the problem of rodenticides moving up the food chain and affecting nontarget wildlife is widespread.").

The Service received numerous petitions over the past thirty years requesting that both species be reclassified to allow for federal protection under the ESA.[49] The regulatory vacuum makes it incredibly difficult for the Service to fulfill its mission and protect these species.

A. Humboldt marten

The Humboldt marten, a small, furry creature resembling a weasel, has two distinct population ranges in the United States.[50]

The first is in Oregon, where about 100 martens live.[51] The second is in northern California, where about 200 martens live, stretched through three California counties that overlap with northern California's "Emerald Triangle."[52]

Environmental groups petitioned the Service to list the Humboldt marten on September 28, 2010.[53] On January 12, 2012, the Service published the statutorily required ninety-day finding, which concluded that the petition contained sufficient scientific information indicating that listing may be warranted.[54] On March 31, 2015, the Service published its twelve-month finding on the petition in accordance with 16 U.S.C. § 1533, which declined to list the marten as an endangered or threatened species under the ESA.[55]

Environmental groups challenged the Service's twelve-month finding.[56] The twelve-month finding determined that the marten "was not warranted for listing at this time."[57] The environmental groups challenged the "not warranted" finding, contending that such a finding was not supported by the "best scientific and commercial data available."[58] The Northern District of California addressed each factor in accordance with 16 U.S.C. § 1533(a).[59]

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[49] *See, e.g.*, Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List Humboldt Marten as an Endangered or Threatened Species, 80 Fed. Reg. 18742 (Apr. 7, 2015) (codified at 50 C.F.R. pt. 17) (addressing the petition to list the Humboldt marten as endangered or threatened); *see also* Endangered and Threatened Wildlife and Plants; Threatened Species Status for West Coast Distinct Population Segment of Fisher, 79 Fed. Reg. at 60423 (addressing the petition to list the Pacific fisher as endangered or threatened).

[50] Finn, *supra* note 26.

[51] *Id.*

[52] *Id.*

[53] Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to List the Humboldt Marten as Endangered or Threatened, 77 Fed. Reg. 1900, 1901 (proposed Jan. 12, 2012) (to be codified at 50 C.F.R. pt. 17).

[54] *Id.*

[55] Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List Humboldt Marten as an Endangered or Threatened Species, 80 Fed. Reg. at 18742.

[56] *Ctr. for Biological Diversity I*, 246 F. Supp. 3d at 1285.

[57] *Id.* at 1276.

[58] 16 U.S.C. § 1533(b)(1)(A).

[59] *Ctr. for Biological Diversity I*, 246 F. Supp. 3d at 1277–79; 16 U.S.C. § 1533(a)(1) (factors for deciding whether to add a species to the Federal Lists of Endangered and Threatened Wildlife and Plants are "(A) the present or threatened destruction, modifi-

Both parties disputed the Service's analysis of factor five: "[o]ther natural or man-made factors affecting [the marten's] continued existence."[60] The court found that "the best available evidence d[id] not support the Service's determination that the three coastal marten populations are not functionally isolated" and that this erroneous conclusion materially affected its "SPR" analysis.[61] "Specifically, the Service concluded that the coastal marten population is not small enough, or isolated enough, to pose a threat to its existence."[62] The court ordered the Service to reconsider its SPR analysis.[63] On October 9, 2018—over eight years after environmental groups first petitioned the Service for the marten's listing—the Service proposed a rule seeking to list the Humboldt marten under the ESA's protections.[64] The expectation and hope is that the Service will finally list the Humboldt marten under the protections of the ESA when it publishes the final rule.

This Article contends that the Service failed to adequately address the threat of rodenticide used by marijuana growers during its analysis. In the Service's "Humboldt marten Species Report," it acknowledged "the large number of illegal marijuana grows that likely occur within occupied suitable habitat potentially exposing martens and marten prey to anticoagulant rodenticides."[65] Yet the Service erroneously concluded that rodenticide exposure is not adversely affecting the Humboldt marten population.[66]

"As for rodenticide exposure, the Service acknowledged that grow sites 'may possibly occur to a greater extent' in California than Oregon, but explained that no data supported a finding that toxicants are having population effects on the coastal marten."[67] The data showed, allegedly, that only "one positive exposure record for a coastal marten

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cation, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence").

[60] *Ctr. for Biological Diversity I*, 246 F. Supp. 3d at 1279.

[61] *Id.* at 1277, 1285. The "SPR" analysis is what the Service undertakes in order to determine whether the species is endangered or threatened over "all or a significant portion of its range." *Id.*

[62] *Id.* at 1279. Plaintiffs' petition also resulted in a change to the taxonomy of the marten. Before, coastal martens were divided into two subspecies: the *humboldtensis* in coastal northern California, and the *caurina* in coastal Oregon. After reviewing recent studies that the two subspecies actually represented a 'single evolutionary entity,' however, the Service, in its 12–month finding, concluded that the coastal martens in Oregon and California comprise a 'distinct population segment,' or 'DPS.' MAR 22026. The Service then declined to list this DPS as endangered. In this order, the Court refers to the DPS at issue as the 'coastal marten.' *Id.* at 1275.

[63] *Id.* at 1285.

[64] Endangered and Threatened Wildlife and Plants; Threatened Species Status for Coastal Distinct Population Segment of the Pacific Marten, 83 Fed. Reg. at 50574.

[65] *Ctr. for Biological Diversity I*, 246 F. Supp. 3d at 1286.

[66] *Id.*

[67] *Id.*

has been documented."[68] However, environmental groups, such as the Center for Biological Diversity, cite several 2017 studies in their petitions to list the Humboldt marten under the Oregon ESA that claim rodenticide is a "serious threat" to the marten populations in southern Oregon and northern California.[69]

With respect to the Humboldt marten's ESA petition, the Service was unable to adequately address the risks of rodenticide exposure. This means that the Service cannot uphold the integrity of the ESA. The regulatory vacuum caused a significant delay in the Humboldt marten's ESA listing, which led to considerably more deaths of an endangered species.

B. Pacific fisher

Environmental groups petitioned to list the Pacific fisher in 1991, 1996, and 2000; each petition was rejected.[70] In 2014, however, the Service announced that it would list the Pacific fisher under the protections of the ESA.[71] In the proposed rule, the Service noted that toxicants, such as anticoagulant rodenticides, were one of the Pacific fisher's main threats.[72] The Service noted that studies likely underrepresented the extent of rodenticide's toxic exposure to the Pacific fisher population.[73]

Yet the Service reversed course in 2016 and withdrew the Pacific fisher's proposed listing, even though a study published after the 2014 proposed rule showed that rodenticide exposure actually worsened.[74] Environmental groups challenged the reversal in district court, asserting that "the reversal was arbitrary and capricious as to these threats: (1) toxicants, (2) small population size, and (3) wildfires. Plaintiffs s[ought] . . . an order requiring the Service to publish within ninety days, a new rule based solely on 'the best scientific and commercial data available.'"[75] The court addressed whether the Service's decision was 'arbitrary and capricious' under the Administrative Procedure Act (APA).[76]

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[68] *Id.*

[69] Petition from Cascadia Wildlands et al., to Or. Comm'n on Fish & Wildlife (June 26, 2018), https://www.biologicaldiversity.org/species/mammals/Humboldt_marten/pdfs/Humboldt-marten-Oregon-listing-petition.pdf [https://perma.cc/KA3W-GERW] (accessed Jan. 2, 2019).

[70] *Ctr. for Biological Diversity II*, 342 F. Supp. 3d at 971.

[71] *Id.*; Endangered and Threatened Wildlife and Plants; Threatened Species Status for West Coast Distinct Population Segment of Fisher, 79 Fed. Reg. at 60419.

[72] *See* Endangered and Threatened Wildlife and Plants; Threatened Species Status for West Coast Distinct Population Segment of Fisher, 79 Fed. Reg. at 60433 ("Recent research documenting mortalities from anticoagulant rodenticides (ARs) in California fisher populations has raised concerns regarding both individual and population level impacts of toxicants within the fisher's range in the Pacific States.").

[73] *Ctr. for Biological Diversity II*, 342 F. Supp. 3d at 973.

[74] *Id.* at 971, 973.

[75] *Id.* at 972.

[76] *Id.* at 973.

The court held in favor of the plaintiff environmental groups.[77] The Service's reversal was arbitrary and capricious because it failed to adequately address the "most comprehensive [2015] study of fisher mortality rates in California . . . ."[78] The study found that the threat of rodenticide was increasing and was "actually worse than previously thought."[79] The study found a "tripling of Pacific fisher deaths due to poisoning" from 2011 to 2015.[80] The Service dismissed the study in its reversal, stating that "it was 'uncertain' at what level of toxicant exposure fishers may be experiencing adverse impacts."[81] The Ninth Circuit, however, has addressed how scientific 'uncertainty' should be evaluated in listing decisions.[82]

Accordingly, the district court stated that the Service may not "simply invoke 'scientific uncertainty' to justify its action" and held that the Service acted in an arbitrary and capricious manner in its reversal.[83] The Service should address scientific uncertainty in favor of wildlife and in accordance with the purpose of the ESA, not the other way around.

The Service recently reopened the comment period for the 2014 proposed rule.[84] The Service must finalize its determination by September 21, 2019.[85] This Article expects and hopes that the Service will list the Pacific fisher under the protections of the ESA in light of recent public support for the Pacific fisher. For example, California recently added the Pacific fisher to the state's endangered species listing, which means that "landowners face additional regulatory measures if they plan activities that would impact the species."[86]

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[77] *Id.* at 976, 978, 980.

[78] *Id.* at 974.

[79] *Id.*

[80] *Id.*

[81] *Id.* at 975.

[82] *Id.* at 976 (citing Greater Yellowstone Coal., Inc. v. Servheen, 665 F.3d 1015, 1028 (9th Cir. 2011)).

[83] *Id.*

[84] Endangered and Threatened Wildlife and Plants; Threatened Species Status for the West Coast Distinct Population Segment of Fisher, 84 Fed. Reg. at 644.

[85] *Id.*; *Ctr. for Biological Diversity II*, 342 F. Supp. 3d at 968.

[86] Jes Burns, *California Protects Rare Marten, Oregon Still Considering Options*, OR. PUB. BROAD. (Aug. 23, 2018), https://www.opb.org/news/article/california-humboldt-marten-endangered-species-oregon/ [https://perma.cc/PFB4-2WUE] (accessed Jan. 3, 2020).

IV. IF MARIJUANA WAS FEDERALLY REGULATED, THEN THE SERVICE WOULD HAVE LISTED THE HUMBOLDT MARTEN AND THE PACIFIC FISHER UNDER THE PROTECTIONS OF THE ESA SOONER, WHICH WOULD HAVE SAVED HUNDREDS OF THESE ENDANGERED ANIMALS

The U.S. Fish and Wildlife Service (the Service) first received a petition to list the Pacific fisher in 1990.[87] The expectation and hope was that the Pacific fisher would be listed under the protections of the ESA in September 2019. In November 2019, the Service announced that they would propose a local population of the Pacific fisher be listed as threatened.[88] This is nearly a thirty-year delay. The Pacific fisher would have been listed sooner had (1) the Service faced less scientific uncertainty regarding how pesticides used in marijuana cultivation affect wildlife; and (2) the Environmental Protection Agency (EPA) regulated pesticides for use on marijuana plants, thereby limiting the concentration of pesticides used. Factor (1) would give the Service scientific certainty, allowing it to make coherent decisions without the risk of 'guessing.' Factor (2) would limit the amount of pesticides that marijuana growers apply, therefore reducing the toxicant concentration in the food chain and saving animals. The concern regarding factor (2) is well founded. "Residues of anticoagulant rodenticides were found in more than 85% of dead fishers . . . tested for toxicant exposure in California."[89]

The Service has not yet acted in response to recent data, which showed rodenticide as a 'serious threat' to the Humboldt marten's survival.[90] Scientific certainty would have tipped the scales in favor of protecting the Humboldt marten. Accordingly, the Humboldt marten should have been listed under the ESA back in 2015 when the Service

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[87] Petition from Ctr. For Biological Diversity et al., to U.S. Fish & Wildlife Serv. (2000), https://www.biologicaldiversity.org/species/mammals/fisher/pdfs/pet.pdf [https://perma.cc/B36J-8N4E] (accessed Jan. 3, 2020); *see also* Endangered and Threatened Wildlife and Plants; Notice of 90-Day Finding on Petition to List the Pacific Fisher as Endangered, 56 Fed. Reg. 1159, 1161 (proposed Jan. 11, 1991) (to be codified at 50 C.F.R. pt. 17) (finding listing of the fisher not warranted based on the presented information); Keith B. Aubry & Douglas B. Houston, *Distribution and Status of the Fisher (Martes Pennanti) in Washington*, 73 NW. NATURALIST 69, 69 (1992) (contrasting an unsuccessful fisher petition with that of other old-growth species).

[88] Erik Neumann, *Pacific Fisher Proposed as Threatened Under Endangered Species Act*, JEFFERSON PUB. RADIO (Nov. 7, 2019), https://www.ijpr.org/post/pacific-fisher-proposed-threatened-under-endangered-species-act#stream/0 [https://perma.cc/2H23-UW9M] (accessed Jan 19, 2020).

[89] Cascadia Wildlands et al., *supra* note 69, at 24.

[90] *Id.*; *see also* Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List Humboldt Marten as an Endangered or Threatened Species, 80 Fed. Reg. at 18742, 18771–72 (finding listing of the Pacific marten not warranted despite consideration of the impact of rodenticide use in marijuana cultivation).

issued its twelve-month finding.[91] How many Humboldt martens could have been saved in the past four years? It is clear that the Service and the EPA have their hands tied. Marijuana's Schedule I status makes it next to impossible to conduct research at the federal level, and "leaves an increasing number of people without the knowledge to make informed, science-based choices."[92]

The EPA and the Service must work together to fill this gap. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) provides for an "interagency working group . . . to provide recommendations regarding, and to implement a strategy for improving, the consultation process required under Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1536) for pesticide registration and registration review."[93] The interagency consultation provision in FIFRA ensures that pesticide registrations are consistent with the ESA, which states that "[e]ach Federal agency shall . . . 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 habitat of such species . . . ."[94] This is a complex process that will require hard work from the private and public sector. Marijuana growers require pesticides and guidance on how much to use. It is nearly impossible to promulgate the appropriate pesticide regulations without Congress removing marijuana from Schedule I.

The EPA understands that rodenticide is dangerous.[95] For example, the EPA has acknowledged the grave harms that rodenticide poses to consumers.[96] In 2008, the EPA issued a final rule that, in part, sought to protect children and general consumers.[97]

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91 Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List Humboldt Marten as an Endangered or Threatened Species, 80 Fed. Reg. at 18742, 18771–72.

92 Austa Somvichian-Clausen, *Organic Weed? Marijuana Growers Go Green*, NAT'L GEOGRAPHIC (June 16, 2017), https://www.nationalgeographic.com/news/2017/06/marijuana-organic-cannabis-industry-goes-green-energy-water-pesticides/ [https://perma.cc/C4W9-L32R] (accessed Sept. 10, 2019).

93 7 U.S.C. § 136a(c)(11)(B) (2018).

94 16 U.S.C. § 1536(a)(2) (2012).

95 *See Regulatory Outlook*, SAFE RODENT CONTROL RES. CTR., http://saferodentcontrol.org/site/regulatory-outlook/ [https://perma.cc/8FXJ-ZX2L (accessed Jan. 3, 2020) (discussing the steps taken by the EPA "to protect against the inherent risks of rodenticides").

96 *See Rodent Control Pesticide Safety Review*, EPA (Apr. 6, 2017), https://www.epa.gov/rodenticides/rodent-control-pesticide-safety-review [https://perma.cc/8FXJ-ZX2L] (accessed Jan. 3, 2020) (stating the requirements for consumer products to minimize the possibility of children and pets being poisoned and listing what consumer products manufacturers may no longer sell); *see also Safely Use Rodent Bait Products*, EPA (Dec. 13, 2016), https:// www.epa.gov/rodenticides/safely-use-rodent-bait-products [https://perma.cc/2FY6-4YT4] (accessed Jan. 3, 2020) (stating safety precautions and reminder steps to take when handling rodenticide products).

97 Rodenticides Final Risk Mitigation Decision; Notice of Availability, 73 Fed. Reg. 31868 (June 4, 2008).

> To reduce wildlife exposures and ecological risks, the Agency intends to prevent general consumers from purchasing bait products containing the rodenticides that pose the greatest risk to wildlife . . . by requiring various measures to control sales and distribution. These new requirements support the EPA's goal of preventing the sale of the second-generation anticoagulants on the general consumer market but will not change how the livestock industry or other professional applicators use rodenticides.[98]

The EPA must address how marijuana growers can apply pesticides. This is the only way that the Service will have the scientific certainty necessary to properly address petitions for ESA listing.

The U.S. Forest Service is fighting battles within our public lands too.[99] Last year, the Forest Service removed over a million illegal marijuana grow sites.[100] Although the Forest Service received $2.7 million in 2018 in order to eliminate illegal grow sites on public lands, this may not be enough to eliminate them all.[101] Regardless, legal grow sites will continue to proliferate throughout the region. The legal grow sites will continue to use pesticides unregulated for marijuana use at unknown concentrations.

The regulatory vacuum leaves the Service unable to adequately address the § 1533 factors when it is presented with a petition. This has caused an untold number of Humboldt marten and Pacific fisher deaths due to rodenticide. Congress must remove marijuana from Schedule I or allow the EPA to research marijuana and register pesticides for its use. Doing so will fill a remarkable void in our federal regulatory system. Most importantly, congressional action will eliminate improper pesticide application practices. This will protect wildlife within the Emerald Triangle and allow the Service to adequately address ESA petitions. The lives of endangered species like the Humboldt marten and the Pacific fisher depend on it.

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98 *Id.*

99 Flock & Scialla, *supra* note 29.

100 *Id.*

101 *Id.*