

Recent Regulatory Risks from the Endangered Species Act

A Report for the American Mosquito Control Association

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March 30, 2018

EPA recently determined that OP pesticides used in mosquito control “may affect” 99% and are “likely to adversely affect” 97% of the endangered or threatened species in the U.S.¹, and a follow-up study by the National Marine Fisheries Service (NMFS) concluded that about 50% of the listed species they oversee are in “jeopardy” of extinction, and about 75% of the critical habitats are likely to be adversely affected, if these pesticide registrations continue as they are today.² These two reports have suddenly escalated the Endangered Species Act (ESA) to the front of the list of regulatory risks facing AMCA members, and this report will summarize these new risks and the AMCA response.

While AMCA is committed to protecting the environment from harm associated with mosquito control activities, we strongly disagree with the methods used in these ESA analyses, their conclusions, and the actions proposed to reduce risks to protected species. Because the risk assessment methods used in these reports have been proposed as the standard for all future pesticide registration reviews, it is critical that they be refined. This report reviews the background to the current analyses, including the basic requirements of ESA and a timeline of key events; summarizes the methods and findings of the recent reports; notes upcoming events; and introduces how AMCA has responded and how we plan to continue to work on this issue.

The Endangered Species Act and Pesticides

The Endangered Species Act has had relatively little impact on mosquito control operations since it became law in 1973, mostly because of a consensus that EPA and FIFRA governed pesticides. However, court decisions starting around 2002 increased the likelihood that ESA would limit the mosquito control toolbox, and recent developments in the courts and regulatory agencies have drastically increased the probability that this law will lead to unjustified restrictions on insecticides and their use patterns.

The Endangered Species Act³ has two basic elements. First, it prohibits killing or harming (“take”) of species listed as Threatened or Endangered, or destruction of their critical habitat, except under specified protective measures (“incidental take statements”). Second, it requires federal agencies to ensure that any activities that they authorize, fund, or implement won’t jeopardize the survival of listed species or adversely modify their critical habitat. Additionally, it allows “citizen suits” in which there is a very low threshold for filing lawsuits claiming “take” or violation of procedural requirements.

Historically, EPA and the Services conducted a series of joint reviews of potential pesticide impacts on listed species in the 1980’s, but concluded that the process was too complex and time consuming, and EPA established what they argued was a “functionally equivalent” in-house review process for pesticide

registration, reregistration, and registration review. Cases filed in 2001 and 2002 in Washington state and California challenged this process, and federal District Courts in both states agreed (see Timeline below and the attached citations) that EPA had failed to follow ESA mandatory procedures for consulting with the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS; together, these are known as the Services).

As the courts consistently held in the years since (in these cases and others not described here)⁴ that EPA was out of compliance with ESA, there has been a scramble to find a mechanism to develop acceptable review and consultation processes. One key step was the production of a report by the National Research Council in 2013, which set up a series of three steps, each based on a specific question to be formally answered by a distinct agency (see below):

1. Can the federal action (in this case, registering pesticide ingredients) impact a listed species (essentially, is there overlap in time and space? To be determined by EPA with consultation with the Services).

2. Is the pesticide registration “likely to adversely affect” (LAA) or “not likely to adversely affect” (NLAA) the species? (To be formally determined by EPA in a Biological Evaluation or BE, in consultation with the Services, under the procedures in an “Interim Approach” adopted late in 2013).

3. Is the pesticide registration likely to cause “jeopardy” for the listed species or “adverse modification of critical habitat”? (To be formally determined by NMFS for oceanic and anadromous fish, and by USFWS for other listed species, in a Biological Opinion or BiOp). When the answers are “yes”, the Services define “Reasonable and Prudent Alternatives” (RPAs) to the proposed action, and the federal action agency must adopt them or similar mechanisms to avoid jeopardy or adverse modification to critical habitat. If LAA has been determined, but jeopardy or adverse modification is not found, then the Services can issue an “Incidental Take Statement” allowing an otherwise lawful activity, as long as their “Reasonable and Prudent Measures” (RPMs) to reduce impact are followed.

Luckily, while courts have consistently found that EPA must consult with the Services when pesticides are registered, they have also found that the Services must use reasonable science when conducting their reviews, and the 4th Circuit panel in 2013 unanimously rejected the first NMFS Biological Opinion covering OP’s and Pacific Salmonids, on the grounds that it was arbitrary and capricious, and didn’t use the best available science.

Recent Determinations

Since the “Interim Approach” was adopted by the agencies at the end of 2013, EPA and the Services have been conducting a pilot project on the OP’s Malathion, Chlorpyrifos, and Diazinon. The first two of these are common mosquito adulticides, and since the results of this pilot project were also likely to be influential in all future ESA reviews of pesticides, AMCA has been closely watching and participating when possible in this review. Unfortunately, the use and exposure assumptions were very high, and the thresholds for finding significant impacts to listed species were absurdly low (a 1/1,000,000 chance of mortality to one organism was used to define “likely to adversely affect” for an entire species), despite

our repeated complaints. Not surprisingly, when EPA issued its first BE's under the "Interim Approach", they found that registrations of these OP's were "likely to adversely affect" almost all (97%) listed species. In short, the agencies had used "may affect" standards to answer the LAA/NLAA question, and failed to differentiate possible from probable or significant risks.

As required by the Interim Method and the Courts, the BE's were followed by initiation of BiOp's by the Services, with NMFS reviewing the small number of fish in its jurisdiction, and USFWS reviewing the other species. Both Services were under court orders to produce these reviews in a timely manner, and NMFS issued their report at the end of 2017, despite the lack of any public comment or assessment of the feasibility of their proposed RPA's and RPM's.

Predictably, the results of this closed and rushed process were not good. Despite a long history of use without demonstrable impacts on the listed species, NMFS found that continuing registration of malathion and chlorpyrifos, using current labels and application methods, are likely to pose "jeopardy" (i.e. lead to the extinction of) half of the species it reviewed, and it proposed drastic RPA's. Even for the species that were not found to be in jeopardy, the proposed RPM's were totally infeasible, despite the legal requirement that RPA's and RMP's must be "economically and technologically feasible" (16 U.S.C. 1536(b)(3)(A); 50 C.F.R. 402.02, et seq).

In short, the RPA's, which EPA has been ordered to implement by the end of 2018, would only allow area-wide spraying in "residential and developed areas" in the species ranges (i.e. much of WA, OR, and CA), and would limit applications of "persistent" pesticides to once per year, but without defining "persistent".⁵ The RPM's are just as bad, prohibiting pesticide application for 48 hours before forecast rains or when soils are water-saturated, and requiring reporting of all non-target toxicity to any species at or downwind of application sites for four days after applications.

AMCA Actions

AMCA has been participating in ESA reviews since they started in 2001, and our level of activity has accelerated as the recent actions have occurred. In particular, we are taking every possible opportunity to comment on proposed actions, and to protest when the assumptions, methods, or proposed mitigation measures are unreasonable. We have requested that EPA and the Services improve their processes, that they provide formal opportunities to comment on the NMFS BiOp that was issued and the USFWS BiOp that is in preparation, and that they consider vacating the NMFS BiOp and the OP BE's if possible, and reinstate consultation.

We are deeply gratified that EPA has recently acted to revise the ESA review and consultation process, and has specifically opened a formal comment period on the NMFS BiOp within the last few days. As we continue our review of the documents and prepare our draft comments, we ask that our members review the attached information, and in particular, that you review the feasibility of the proposed RPA's and RPM's and send us your thoughts.

Time Line

- 12/28/1973 Endangered Species Act (ESA) signed into law as Public law 93-205.⁶
- 03/01/98 The Services publish the Endangered Species Consultation Handbook, which includes rules for making LAA vs. NLAA determinations, and requires evaluation of significance of risk.⁷
- 01/30/01 The Washington Toxics Coalition (WTC) and other groups file suit in the Federal District Court for the Western District of Washington state, alleging that EPA had failed to consult with NMFS on whether certain pesticides posed jeopardy to 26 federally listed endangered and threatened Pacific salmon and steelhead (the first of the “Pacific Salmonids” cases).⁸
- 04/02/02 The Center for Biological Diversity (CBD) files suit in the Northern District of California, alleging that EPA failed to comply with section 7(a)(2) of the Endangered Species Act by not ensuring that its registration of 66 named pesticide active ingredients will not affect the California red-legged frog (CRLF), a federally-listed Threatened species, and by not consulting with USFWS.⁹
- 07/02/02 The court in the Washington Toxics case orders EPA to review potential impacts of 55 AIs on Pacific Salmonids.
- 01/22/04 The Washington Toxics case is settled with a Court Order that Imposed no-use buffer zones around “Salmon Supporting Waters” in WA, OR, and CA until EPA completes its consultation obligations including “finding that a pesticide has no effect on the species, receipt of a biological opinion from NMFS, or a finding by EPA that the pesticide is not likely to adversely affect the species with no affirmative rejection of that finding by NMFS.” Mosquito control is exempted from use limitations.
- 12/01/04 EPA finds that 37 of the pesticides in the Pacific Salmonids case “may affect” listed species, and begins consultation with NMFS.
- 10/20/06 The red-legged frog cases is settled by a Court Order that EPA must conduct formal “Effects Determinations” for 66 AIs on the frog over 3 years, must consult with USFWS under ESA for any pesticide registrations that “may affect” the frog, and must prohibit the use of these pesticides in much of the frog’s range until these determinations and consultations are complete. Mosquito control is exempted from the Court Order.
- 05/30/07 CBD again files suit in the Federal District Court in Northern CA against EPA, alleging failure to comply with ESA Section 7 when it registered 47 AIs (later expanded to 75) that might impact 11 listed species from the San Francisco Bay Area.¹⁰
- 05/17/10 Court Order settles the SF Bay ESA suit in much the same way as in the red-legged frog suit, with a requirement for Effects Determinations and consultation with the Services for any “may affect” determinations, restrictions on the use of the pesticides at question until the consultations are finished, and exemptions for vector control.
- 09/01/10 EPA, NMFS, and USFWS request the National Academy of Sciences (NAS) to advise them on how to improve the process for assessing risks to endangered species from pesticides. Accordingly,

the National Research Council (NRC) convened a Committee Ecological Risk Assessment pursuant to FIFRA and ESA.

02/15/13 A panel of the 4th Circuit Court of Appeals unanimously rejects the NMFS BiOp on OPs and Pacific Salmonids, essentially as being arbitrary and capricious, and not using the best available science.¹¹

04/30/13 The NRC Committee provides recommendations to EPA and the Services as the report “Assessing Risks to Endangered and Threatened Species from Pesticides”.¹²

11/15/13 EPA, the Services, and USDA jointly announce “Interim Approach” to risk assessments for pesticides relative to listed species.¹³ This new process clarifies three levels of analysis (No Effect vs. May Affect; LAA vs. NLAA; Jeopardy and/or Critical Habitat) and agency responsibilities. This approach is intended to implement the NRC recommendations, but also adopts arbitrary new standards, including the use of “a chance of 1 in a million of causing mortality to an individual” threshold for defining “Likely to Adversely Affect” (LAA) a species.

08/15/14 Based on an additional Pacific Salmonids suit (Northwest Center for Alternatives to Pesticides v. EPA), EPA reinstated streamside no-spray buffer zones to protect endangered or threatened Pacific salmon and steelhead in CA, OR, and WA, while still exempting mosquito control.¹⁴

07/21/15 Revised Settlement Agreement in the SF Bay case, expanding the scope of review for some of the chemicals to nation-wide, rather than continuing the geographically limited reviews.

04/22/16 EPA posts draft Biological Evaluations (BE’s) for Malathion, Chlorpyrifos, and Diazinon, and requests public comments. Numerous comments were submitted on behalf of mosquito control.

06/29/16 Stake-holder meeting to refine BE’s; extensive discussion of mosquito control.¹⁵

01/19/27 EPA publishes final BE’s for registration of Malathion, Chlorpyrifos, and Diazinon;¹⁶ responds to comments;¹⁷ and requests formal consultation on jeopardy with the Services.¹⁸

12/29/17 NMFS issues Biological Opinion (BiOp) on ESA impacts of EPA’s registration of the active ingredients Chlorpyrifos, Diazinon, and Malathion,¹⁹ and concludes that the registration of pesticides containing chlorpyrifos or malathion “is likely to jeopardize the continued existence of 38 of the 77 listed species, and adversely modify 37 of the 50 designated critical habitats.” NMFS had requested additional time from the court to prepare the document, but this was not granted, and NMFS acknowledges that “given the time, [this document] cannot fully account for the need to coordinate on a different process for developing such opinions or to fully engage the public.”

01/31/18 EPA and the Departments of Interior and Commerce, which oversee the Services, sign an MOU to establish an “Interagency Working Group to Coordinate Endangered Species Act Consultations for Pesticide Registrations and Registration Review”.²⁰

2/21/18 EPA (Richard Keigwin) writes to NMFS, requesting reopening OP BiOp, based on procedural problems, and specifically the lack of stakeholder engagement.

03/23/18 EPA Opens Comment Period on NMFS's BiOp for Chlorpyrifos, Diazinon, & Malathion.²¹ EPA is considering whether to implement the BiOp or reinstate consultation. Key questions presented by EPA are:

1. The scientific approaches and data sources used to support the BiOp and reach determinations for the listed species and critical habitat.
2. The RPAs and RPMs. Can they reasonably be implemented? If not, why not? Are there different measures that may provide equivalent protection to the ones in the BiOp but result in less impact on pesticide users?
3. National- and state-level use and usage data and information, in particular, information for non-agricultural use sites (e.g., nurseries, managed forests, pasture, rights-of-way, golf courses, and wide-area mosquito control). If possible, provide sources for data that should be considered.

¹ N = 1835 listed species; 1819 "may affect"; 1778 "likely to adversely affect"; www.epa.gov/pesticides/epa-releases-final-biological-evaluations-three-chemicals-impacts-endangered-species (1/18/17)

² <https://www.fisheries.noaa.gov/resource/document/biological-opinion-pesticides-chlorpyrifos-diazinon-and-malathion> (12/29/17)

³ <https://www.law.cornell.edu/uscode/text/16/chapter-35>

⁴ <https://www.epa.gov/endangered-species/endangered-species-litigation-and-associated-pesticide-limitations>

⁵ The discussion of RPAs for each chemical is on BiOP pages 3,466-89. The RPAs are significant. For mosquito control a central point is to "Restrict mosquito applications to residential and developed areas within species' range." See pages 3469 et seq. The discussion concerning RPMs is on page 3489 through 3496. In salient part, the RPMs are as follows:

RPM 1b. Prohibit application of pesticide products when soil moisture is at field capacity, or when a storm event likely to produce runoff from the treated area is forecasted (by 26-30 NOAA/National Weather Service, or other similar forecasting service) to occur within 48 hours following application.

RPM2b) Report all incidents of mortality and adverse effects to non-target species that occur within the vicinity of the treatment area, including areas downstream and downwind, in the four days following application of and of these a.i.s to EPA's Office of Pesticide Programs (phone: 703-305-7090).

⁶ <https://www.congress.gov/bill/93rd-congress/senate-bill/1983>

⁷ https://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf

⁸ <https://www.epa.gov/endangered-species/endangered-species-case-washington-toxics-coalition-v-epa>

⁹ <https://www.epa.gov/endangered-species/court-issues-stipulated-injunction-regarding-pesticides-and-california-red-legged>

¹⁰ <https://www.epa.gov/endangered-species/san-francisco-bay-area-endangered-species-litigation-center-biological-diversity#background>

¹¹ <https://www.endangeredspecieslawandpolicy.com/2013/02/articles/court-decisions/fourth-circuit-strikes-nmfs-biological-opinion-regarding-pesticide-registrations/>

¹² National Research Council, 2013; http://www.nap.edu/catalog.php?record_id=18344

¹³ <https://www.epa.gov/sites/production/files/2015-09/documents/nas-rollout.pdf>

¹⁴ <https://www.epa.gov/endangered-species/endangered-species-case-northwest-center-alternatives-pesticides-v-epa>

¹⁵ <https://www.regulations.gov/docket?D=EPA-HQ-OPP-2014-0233>

¹⁶ <https://www.regulations.gov/docket?D=EPA-HQ-OPP-2008-0850>

¹⁷ <https://www3.epa.gov/pesticides/nas/final/response-to-comments.pdf>

¹⁸ file:///C:/Users/malamud-roam/Downloads/EPA-HQ-OPP-2008-0850-0933.pdf

¹⁹ <https://www.fisheries.noaa.gov/resource/document/biological-opinion-pesticides-chlorpyrifos-diazinon-and-malathion>

²⁰ <https://www.epa.gov/newsreleases/epa-administrator-scott-pruitt-signs-endangered-species-act-memorandum-state>

²¹ <https://www.epa.gov/pesticides/epa-opens-comment-period-nmfss-assessment-chlorpyrifos-diazinon-and-malathion>