ESA Activities

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Today's Topics

- Background
- Draft Biological Evaluation (BE) Summary
- Tool Development
- Path Forward
- Step 3 Activities

Background

- Collaborative effort among the:
  - United States Environmental Protection Agency (EPA)
  - National Marine Fisheries Service (NMFS)
  - United States Fish and Wildlife Service (FWS)
  - United States Department of Agriculture (USDA)
- November 2013 – release of interim scientific methods for implementing NAS recommendations
  - https://www.epa.gov/endangered-species/implementing-nas-report-recommendations-ecological-risk-assessment-endangered-and
- Current interim scientific method developed in 2013 - 2015
  - Four interagency meetings
  - Four stakeholder workshops
  - Numerous presentations at conferences, PPDC, SFIREG

Background

- A subset of the draft BE documents for chlorpyrifos, malathion, and diazinon was posted to an EPA website in Dec. 2015
  - https://www.epa.gov/endangered-species/implementing-nas-report-recommendations-ecological-risk-assessment-endangered-and
- The entire draft BEs (including all associated documents) were posted to the EPA's ESPP website in April 2016
  - https://www.epa.gov/endangered-species/implementing-nas-report-recommendations-ecological-risk-assessment-endangered-and
- Currently seeking public comments on the draft BEs
  - The public comment period closes on June 10, 2016
  - Final Biological Opinions due in December 2017
- Public webinar on May 5, 2016
- Ecological Modeling Public Meeting on May 9, 2016

Draft BE Summary

Scroll down to find the following links:

Scroll down

NAS released its report in April 2013 with its recommendations. Read the NAS report. Exit

Status

Since receiving the NAS report, the agencies have been working together to develop shared scientific approaches that reflect the advice provided by the NAS. Working together, scientists from the requesting agencies have met, analyzed the recommendations and have developed interim approaches they will jointly implement as part of a phased iterative process. They are also identifying future tools, models and approaches that will need to be developed some time over a period of years.

Interim Approaches for Pesticide Endangered Species Act Assessments based on National Academy of Sciences Report Recommendations

EPA, in conjunction with FWS, NMFS, and USDA, has developed draft Biological Evaluations (BEs) in response to the NAS report. In December 2015, OPP released several documents associated with the Biological Evaluations (BEs) for the three pilot chemicals: chlorpyrifos, diazinon and malathion. In April 2016, EPA released the effects determination for each of the three pilot chemicals and open the docket for public comment. The information provided for each chemical will be on a separate page:

- Chlorpyrifos
- Diazinon
- Malathion
- Provisional models

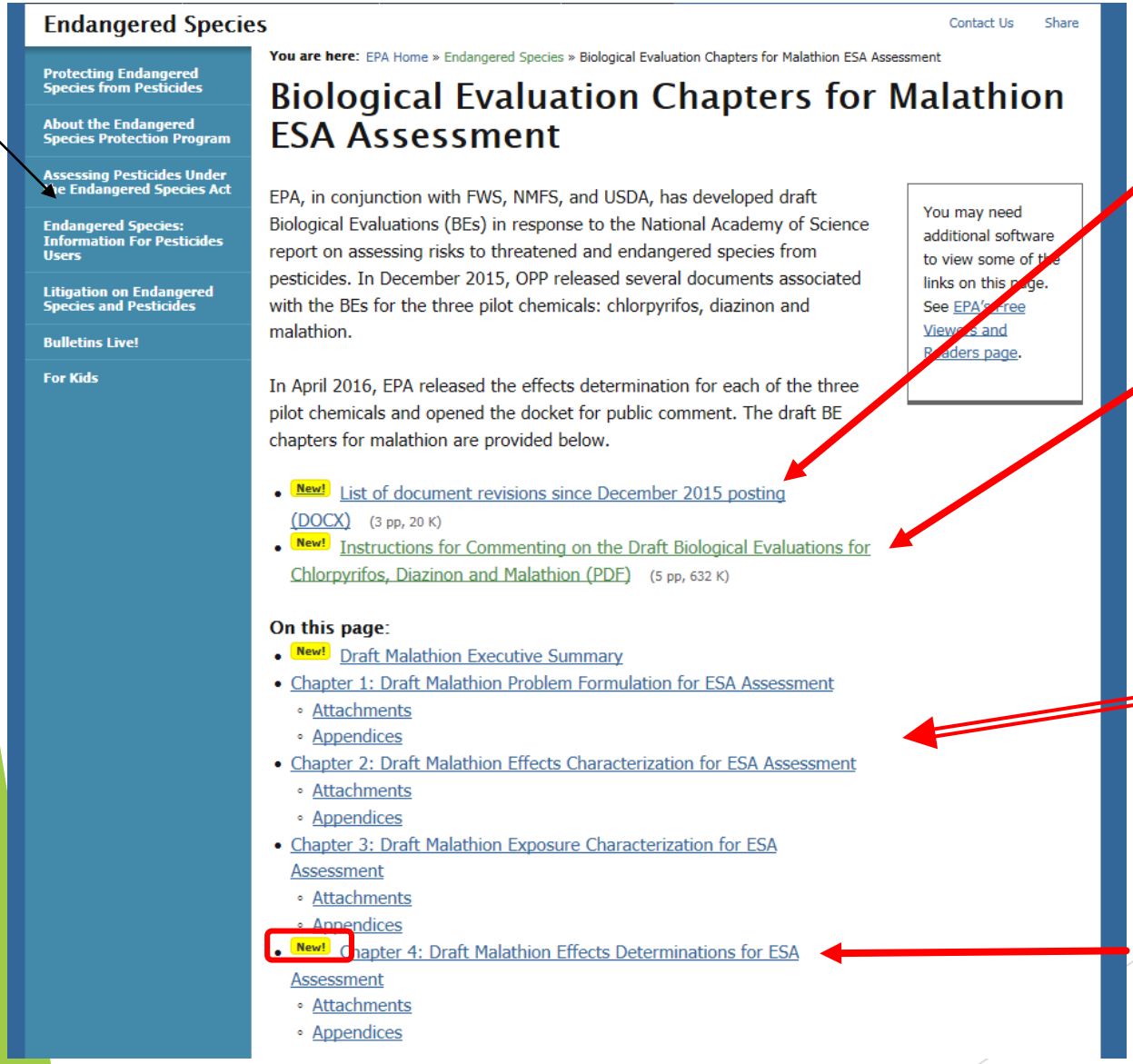
2013 NAS Report

Interim Approaches

Chemical-specific BEs

Provisional Models and Tools

Draft BE Summary



Endangered Species

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You are here: EPA Home » Endangered Species » Biological Evaluation Chapters for Malathion ESA Assessment

Biological Evaluation Chapters for Malathion ESA Assessment

EPA, in conjunction with FWS, NMFS, and USDA, has developed draft Biological Evaluations (BEs) in response to the National Academy of Science report on assessing risks to threatened and endangered species from pesticides. In December 2015, OPP released several documents associated with the BEs for the three pilot chemicals: chlorpyrifos, diazinon and malathion.

In April 2016, EPA released the effects determination for each of the three pilot chemicals and opened the docket for public comment. The draft BE chapters for malathion are provided below.

You may need additional software to view some of the links on this page. See EPA's Free Viewers and Readers page.

- New! List of document revisions since December 2015 posting (DOCX) (3 pp, 20 K)
- New! Instructions for Commenting on the Draft Biological Evaluations for Chlorpyrifos, Diazinon and Malathion (PDF) (5 pp, 632 K)

On this page:

- New! Draft Malathion Executive Summary
- Chapter 1: Draft Malathion Problem Formulation for ESA Assessment
  - Attachments
  - Appendices
- Chapter 2: Draft Malathion Effects Characterization for ESA Assessment
  - Attachments
  - Appendices
- Chapter 3: Draft Malathion Exposure Characterization for ESA Assessment
  - Attachments
  - Appendices
- New! Chapter 4: Draft Malathion Effects Determinations for ESA Assessment
  - Attachments
  - Appendices

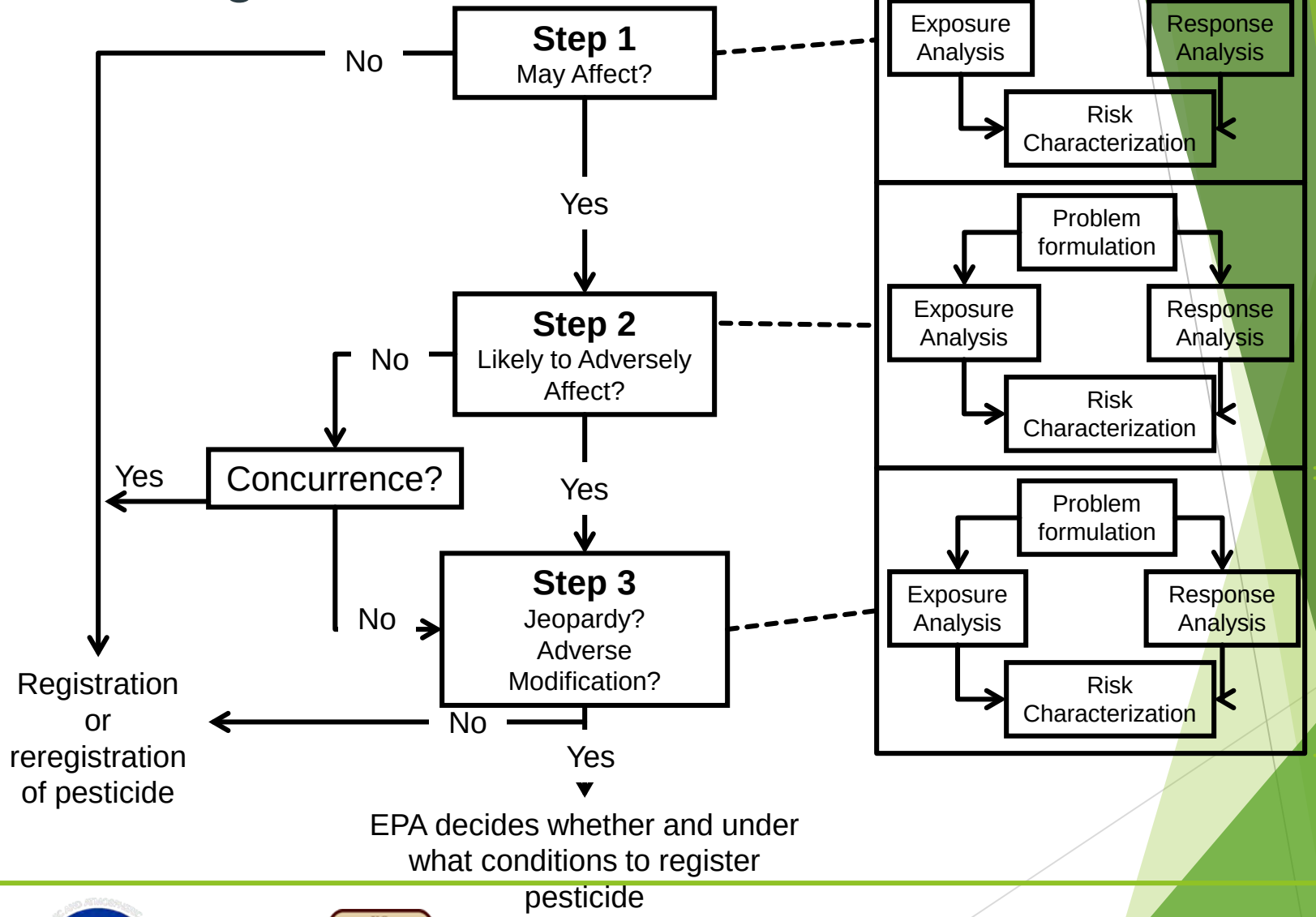
List of document revisions (since the Dec. 2015 posting)

Instructions for commenting on the draft BEs

Hyperlinks to BE chapters and associated documents

New! = a 'new' or 'revised' document (since the Dec. 2015 posting)

3-Step Approach: ESA Consultation and Ecological Risk Assessment



Draft BE Summary

- Step 1
  - Overlap of action area with species range and/or critical habitat
  - Is there potential for direct and/or indirect effects from the action?
  - No Effect / May Affect determination
    - No Effect – no consultation necessary
    - May Affect – move to Step 2

Draft BE Summary

- Step 2
  - Weight-of-Evidence Approach
    - Lines of evidence
    - Estimating exposures (in aquatic and terrestrial habitats)
    - Effects thresholds (direct and indirect effects)
    - Incident data
    - Qualitative discussion of mixtures and abiotic influence on toxicity
  - Is an individual's fitness reduced or are species' essential habitat features affected?
  - LAA / NLAA determination
    - LAA – move to Step 3 (Biological Opinion jeopardy/no jeopardy determination)
    - NLAA – concurrence from Services

Draft BE Summary
Weight-of-Evidence Approach

Lines of Evidence	Weight of evidence (confidence in exposure and effects data)					Risk Estimate (Overlap of exposure and effect)	Overall confidence high, medium, low
	Factors to consider for confidence in data						
	EXPOSURE		EFFECTS				
	Relevance	Robustness	Biological Relevance	Species Surrogacy	Robustness		
Mortality							
Growth							
Reproduction							
Behavioral							
Sensory effects							
Indirect effects							
Mixtures							
Abiotic/Biotic factors (bacterial/viral. pH, temperature)							

Draft BE Summary
Chlorpyrifos and Malathion

Taxa	NE	NLAA	LAA	Total number of species
Amphibians	0	1	39	40
Aquatic Invertebrates	1	1	215	217
Birds	8	8	93	109
Fish	0	4	182	186
Mammals	3	20	87	110
Plants	2	0	946	948
Reptiles	0	0	43	43
Terrestrial Invertebrates	9	0	117	126
Total	**23**	**34**	**1722**	**1779**
Percentage	**1%**	**2%**	**97%**	

Draft BE Summary Diazinon

Taxa	NE	NLAA	LAA	Total number of species
Amphibians	0	1	39	40
Aquatic Invertebrates	6	9	202	217
Birds	10	11	88	109
Fish	1	27	158	186
Mammals	3	23	84	26
Plants	94	127	727	1032
Reptiles	1	0	42	43
Terrestrial Invertebrates	23	10	93	126
Total	**138**	**208**	**1433**	**1779**
Percentage	**8%**	**12%**	**80%**	

Draft BE Summary

- LAA for most listed species
  - Due to overlap of range/critical habitat and potential uses sites
  - Low thresholds (high toxicity), maximum use rates, other assumptions of exposure
  - Weight-of-evidence approach
  - LAA for single individual of a listed species

- Soliciting comments on specific areas

Tool Development

- Aquatic Exposure
  - Pesticide in Water Calculator (PWC)
  - New Scenarios
  - PWC Postprocessor
- Terrestrial Exposure
  - Terrestrial Effects Determination (TED) Tool
  - Terrestrial Investigation Model & Markov Chain Nest model (TIM/MCnest)
- Effects
  - Data Array Builder
  - Species Sensitivity Distribution (SSD) Toolbox
- Effects Determination
  - Weight-of-Evidence Matrix Generator

Path Forward

- Draft BEs for chlorpyrifos, diazinon, and malathion
  - Comment period to close June 10, 2016
- Smaller interagency subgroups to:
  - Develop options to refine interim methods
- ESA Stakeholder Workshop
  - 2-day meeting on June 29-30, 2016
  - Plenary and break-out sessions
  - Steering Committee: representation from government, industry, and non-government organizations
  - Topics for breakouts
    - Aquatic modeling
    - Refinements to Steps 1 and 2
    - Weight-of-Evidence Approach

Path Forward

- Proposed schedule for chlorpyrifos, diazinon, and malathion
  - December 2016: Final BEs
  - April 2017: Draft BiOps
  - December 2017: Final BiOps
- Proposed schedule for carbaryl and methomyl
  - December 2016: Draft BEs
  - December 2018: Final BiOps

Step 3 Activities

The Biological Opinions:

- Completed a current range map for every species
- Status of the Species: 1,640 species
  - Completed = 466 species
  - Need additional work = 242
  - Need to be written = 932
- Status of the Species for Critical Habitat = 687 CH
  - Partially completed = 102

Step 3 Activities

- Project Description
  - In progress, using the BEs
- Baseline = Status of the Species in the Action Area
- Effects of the Action
  - Factors considered, exposure, risk, etc.
  - Species' response = looking at groups and sub-groups with assistance from our Field Offices
- Conclusion
- Incidental Take Statement

Questions?