ESA Update

Anita Pease, Associate Director
Environmental Fate and Effects Division
Office of Pesticide Programs, US EPA
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Today’s Topics

• Interagency Process Agreements

• Draft Biological Evaluation (BE) Summary and Tools

• Draft BE Comments

• Path Forward
Interagency Process Agreements

• Shared interagency approach
• All agencies open to changing methodology
• Development of interim methods
  – Data, tool, and models used in Steps 1 and 2 inform Step 3
  – Consider stakeholder input
• Revise interim method based on lessons learned and application of scientific approaches
• Once vetted, day-forward approach and iterative
Draft BE Summary

• Draft BEs for chlorpyrifos, diazinon, and malathion released on April 6, 2016
  – Instructions for commenting
  – 60-day public comment period

• Scale and Scope
  – First nation-wide ESA BEs using interim methods
  – Steps 1 and 2 are at the individual level
  – Is the pesticide “likely to adversely affect” (LAA) or “not likely to adversely affect” (NLAA) an individual of a listed species?
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 (jeopardy determination)
    • NLAA – concurrence from Services
# Draft BE Summary

## Weight-of-Evidence Approach

<table>
<thead>
<tr>
<th>Lines of Evidence</th>
<th>Weight of evidence (confidence in exposure and effects data)</th>
<th>Risk Estimate (Overlap of exposure and effect)</th>
<th>Overall confidence</th>
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<tbody>
<tr>
<td></td>
<td>Factors to consider for confidence in data</td>
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<td>high, medium, low</td>
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<tr>
<td>EXPOSURE</td>
<td>Relevance</td>
<td>Robustness</td>
<td>Biological Relevance</td>
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<td>Mortality</td>
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<td>Behavioral</td>
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<td>Sensory effects</td>
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<td>Indirect effects</td>
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<td>Mixtures</td>
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<td>Abiotic/Biotic factors (bacterial/viral, pH, temperature)</td>
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New Tools

• New tools developed to improve efficiency, manage large volume of data, and ensure consistency and transparency

• Exposure
  – Pesticide Water Calculator (PWC) Automation Tool and PWC post processor
    • New ESA scenarios developed
  – Terrestrial Effects Determination (TED) Tool
New Tools

• **Effects**
  – Data Array Builder
  – Species Sensitivity Distribution (SSD) Toolbox

• **Risk**
  – Weight-of-Evidence Matrix Generators
  – Refined risk models for birds (TIM and MCnest)
Species Sensitivity Distribution
Draft BE Summary

- LAA for most listed species
  - 97% for chlorpyrifos and malathion
  - 80% for diazinon
  - 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
  - Higher degree of confidence in LAA calls for some taxa (e.g., invertebrates, birds)
  - LAA for **single individual** of a listed species
Draft BE Comments

• Public comments
  – >78,000 comments; 120 substantive

• 2-day ESA Stakeholder Workshop in June 2016
  – Aquatic Modeling
  – Spatial and non-spatial refinements to Steps 1 and 2
  – Weight-of-evidence analysis for animals and plants
  – [link](https://www.epa.gov/endangered-species/5th-esa-workshop-joint-interim-approaches-nas-recommendations)
Path Forward

• Final BEs for chlorpyrifos, diazinon, and malathion and Response to Public Comments (including consideration of recommendations from ESA Stakeholder workshop):
  – December 2016
• Continued work on draft BEs for carbaryl and methomyl:
  – Spring 2017
• Continued work on Step 3 (BiOp) interim method:
  – 3-day interagency workshop in September 2017
  – Draft BiOps for chlorpyrifos, diazinon, and malathion in May 2017
• Final BiOp dates:
  – December 2017: chlorpyrifos, diazinon, and malathion
  – December 2018: carbaryl and methomyl
• Next 4: atrazine, simazine, propazine, and glyphosate (2020-2022)
Questions?