

Draft Insecticide Strategy

September 5, 2024

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Tips for Participants

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The screenshot shows a web browser window with the URL <https://app.gotowebinar.com/index.html#889888307/6101116743820216835/3028182954814294029>. The main content area displays a photograph of the U.S. Environmental Protection Agency building with a white flag in the foreground that reads 'OFFICE OF PESTICIDE PROGRAMS U.S. ENVIRONMENTAL PROTECTION AGENCY'. Overlaid on the right side is a 'Questions' panel. The panel has a dark blue sidebar with icons for a chat bubble, a microphone (muted), a hand (raised), a speech bubble, and a document. A blue arrow points to the hand icon, a green arrow points to the document icon, a red arrow points to the text 'Ask the staff a question', and a yellow arrow points to the 'Exit' button. The main area of the panel is a light gray text input field. At the bottom of the panel is a blue 'Send' button.

Purpose and Scope of Today's Webinar

- Purpose: To provide an overview of the Draft Insecticide Strategy released on July 25, 2024 for a 60-day public comment period
- Documents available in Docket ID: [EPA-HQ-OPP-2024-0299](#)
 - Framework
 - Case Studies
 - Ecological Mitigation Support Document
 - Includes consideration of stakeholder feedback and information collected during the development of the Herbicide Strategy
- Public Comment Period Closes: September 23, 2024





Presentation Outline

- Introduction to the Draft Insecticide Strategy
- Draft Insecticide Strategy three step process:
 - Evaluate potential population-level impacts assessment
 - Identify mitigations to address impacts
 - Define geographic extent of mitigations
- Implementation and next steps

A close-up photograph of a bee on a yellow cosmos flower. The background is a soft-focus field of many other yellow cosmos flowers and green stems. The lighting is natural, suggesting an outdoor setting.

Draft Insecticide Strategy Introduction

Draft Insecticide Strategy - Goal and Scope

- **Goal**

- Develop a broad approach to reduce potential population-level impacts for over 850 Fish and Wildlife Service (FWS) listed species from conventional insecticides applied for pest control in agricultural fields in the contiguous United States (CONUS)

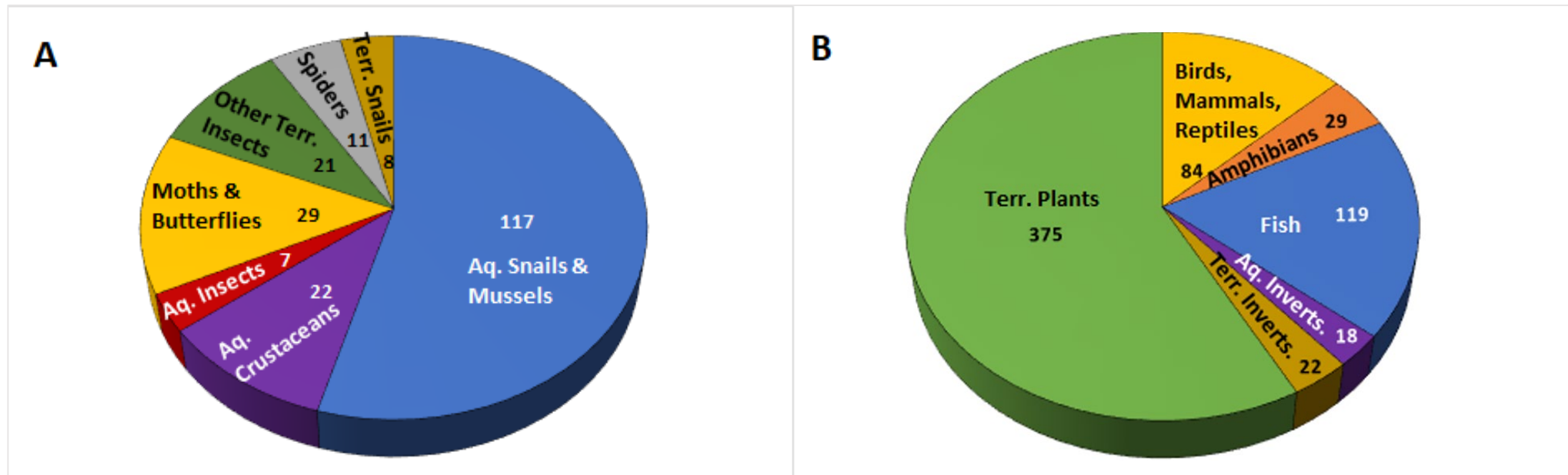
- **Scope**

- Considers exposure to on-field species and off-field spray drift and runoff/erosion exposure routes
- Listed terrestrial and aquatic invertebrates
- Listed generalist or obligate species that depend on invertebrates (as part of their diet or for pollination)

Listed Invertebrates and Other Species that Depend on Invertebrates for Diet or Pollination

A. Direct impacts to listed invertebrates

B. Indirect impacts

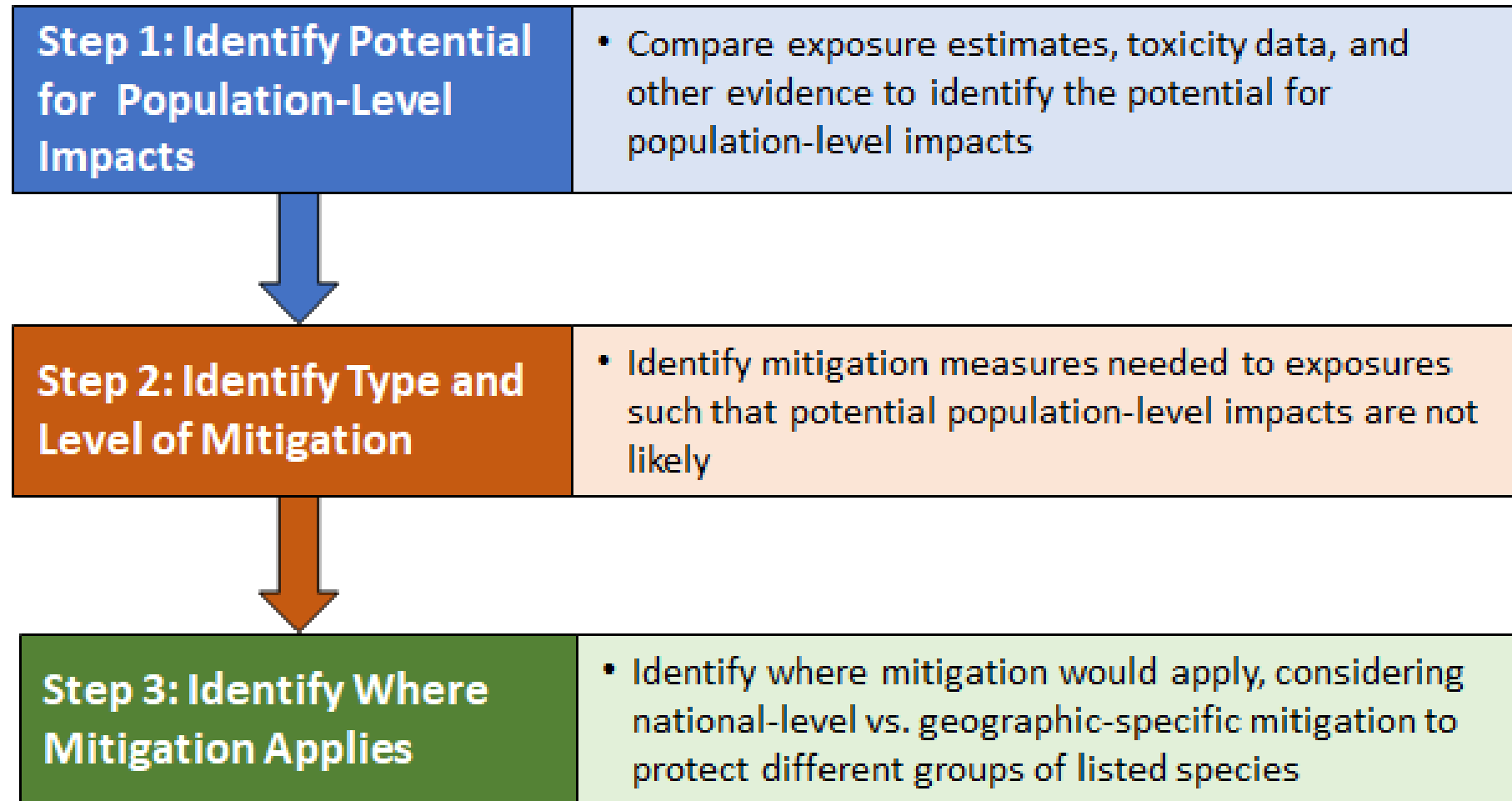


Listed species covered by the draft Insecticide Strategy

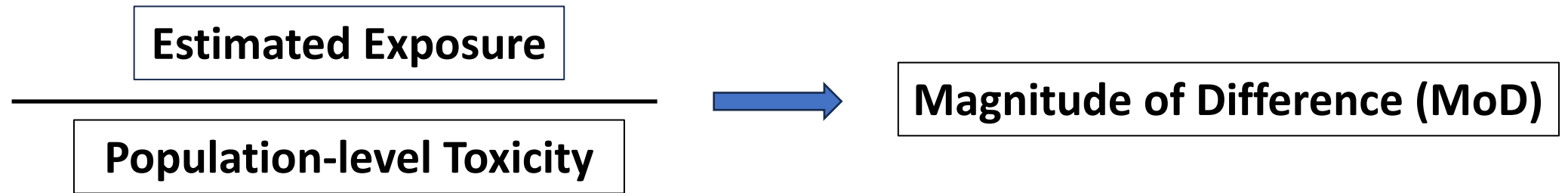
Draft Strategy Process



Insecticide Strategy Framework - 3 Step Process



Step 1: Identify Potential for Population-Level Impacts using Magnitude of Difference



Magnitude of Difference: Estimated Exposure



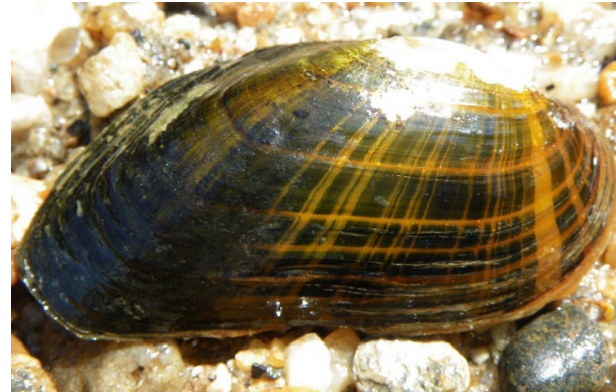
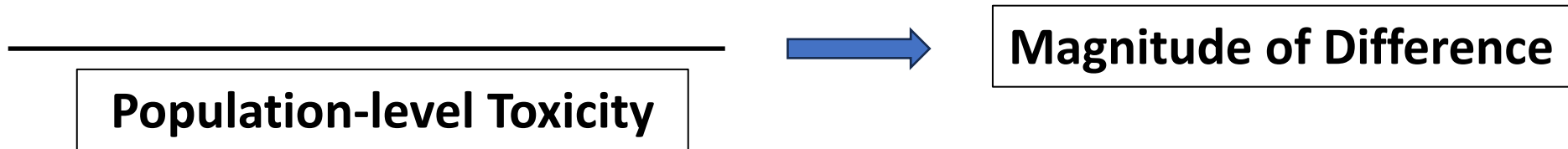
Estimated Exposure



Magnitude of Difference



Magnitude of Difference: Population-Level Toxicity



Step 1: Identifying Potential for Population-Level Impacts

Magnitude of Difference (MoD)	Potential for Population-Level Impacts
<1	Not Likely
1 to <10	Low
10 to <100	Medium
≥100	High

Step 2: Identifying the Level of Mitigation to Prevent Population-Level Impacts

Potential for Population-Level Impacts	Magnitude of Reduction in Exposure to Result in a Not Likely for Population-Level Impact Conclusion	Level of Mitigation Identified
Not Likely	None	None
Low	10x	Low
Medium	100x	Medium
High	1000x	High

Spray Drift Buffers Based on Population-Level Impacts

Potential for Population- Level Impacts (Step 1)	Distance from edge of treated area (in feet)		
	Aerial ¹ Spray	Ground ² Spray	Airblast
Not Likely	None	None	None
Low	50	10	25
Medium	Calculated for specific chemical		
High	320	230	160

¹Based on medium droplet size distribution

²Based on high boom and very fine to fine droplet size distributions

Mitigation Measures to Reduce the Spray Drift Buffer

- Application parameters: reduced rate and proportion of field treated, increased droplet size, boom height, hooded sprayers, adjuvants, etc.
- Field-adjacent habitat: Downwind windbreak, hedgerows, forest habitat, etc.
- Relative humidity $\geq 60\%$

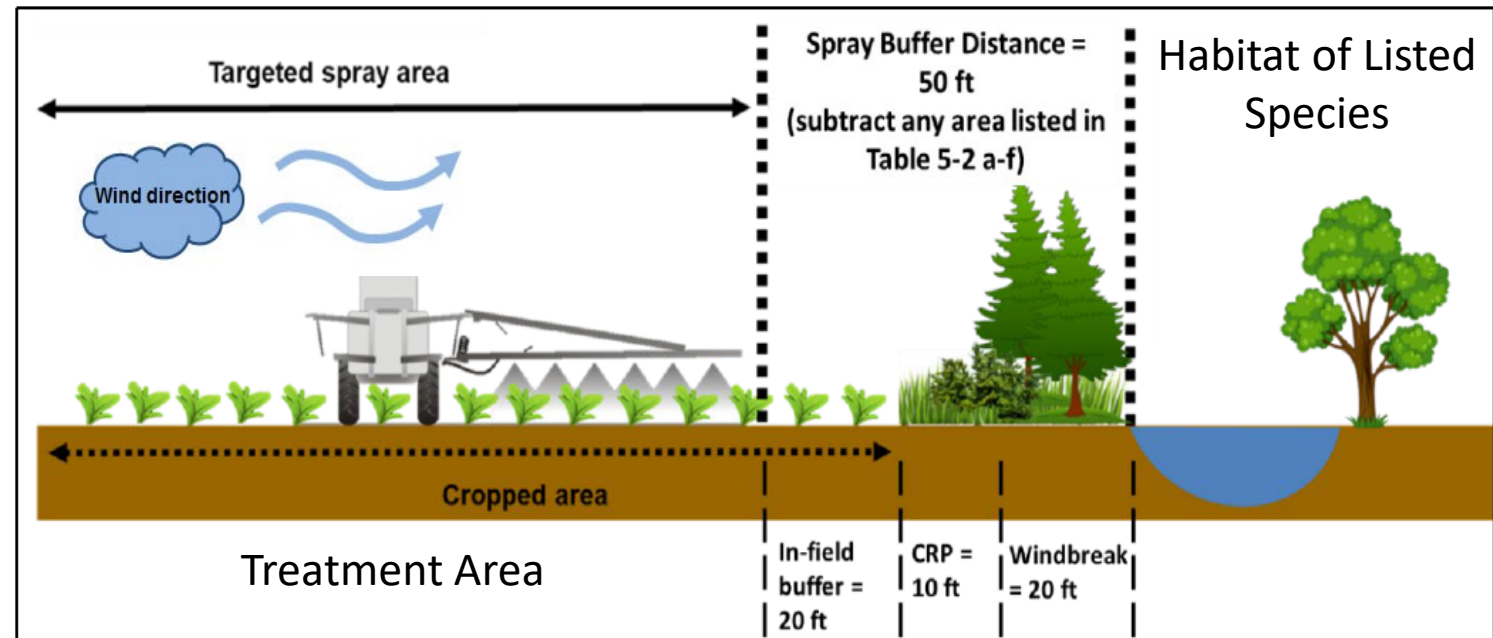


Diagram adapted with permission from the Pest Management Regulatory Agency of Health Canada (2020). Available at: <https://www.canada.ca/en/healthcanada/services/consumer-product-safety/pesticides-pest-management/growers-commercial-users/driftmitigation/protecting-habitats-spray-drift.html>

Managed Areas

- Composition and size of managed areas on the landscape act like a buffer or intercept spray drift and reduce the distance it may travel
- Managed areas downwind and immediately adjacent to the field can be included in the buffer
- Examples include: roads, buildings, agricultural fields, and areas maintained as a mitigation measures for drift control



Photo by U.S. Department of Agriculture

An aerial view of wooded windbreaks surrounding agricultural fields.



Photo by U.S. Department of Agriculture

Constructed wetlands on a farm.

Runoff/Erosion Mitigations Based on Population-Level Impacts

Potential for Population-Level Impacts	Mitigation Points Identified	
	Erosion-Prone Chemicals	Runoff-Prone Chemicals
Not Likely	None	None
Low	2 points	3 points
Medium	4 points	6 points
High	6 points	9 points

Runoff/Erosion Example Mitigation Measures

- Application parameters: reduced rate, proportion of field, soil incorporation
- Field characteristics: level or low slope fields, sandy soils
- In-field: low/no till, contour/terrace, cover crops, in-field vegetative strips, irrigation water management, mulching, erosion barriers
- Field-adjacent: vegetative filter strips, grassed waterway, riparian forest buffer, landscape improvement, carbon amendments
- Systems that capture runoff and control discharge
- Conservation Program and Runoff/Erosion Specialists/Mitigation Tracking

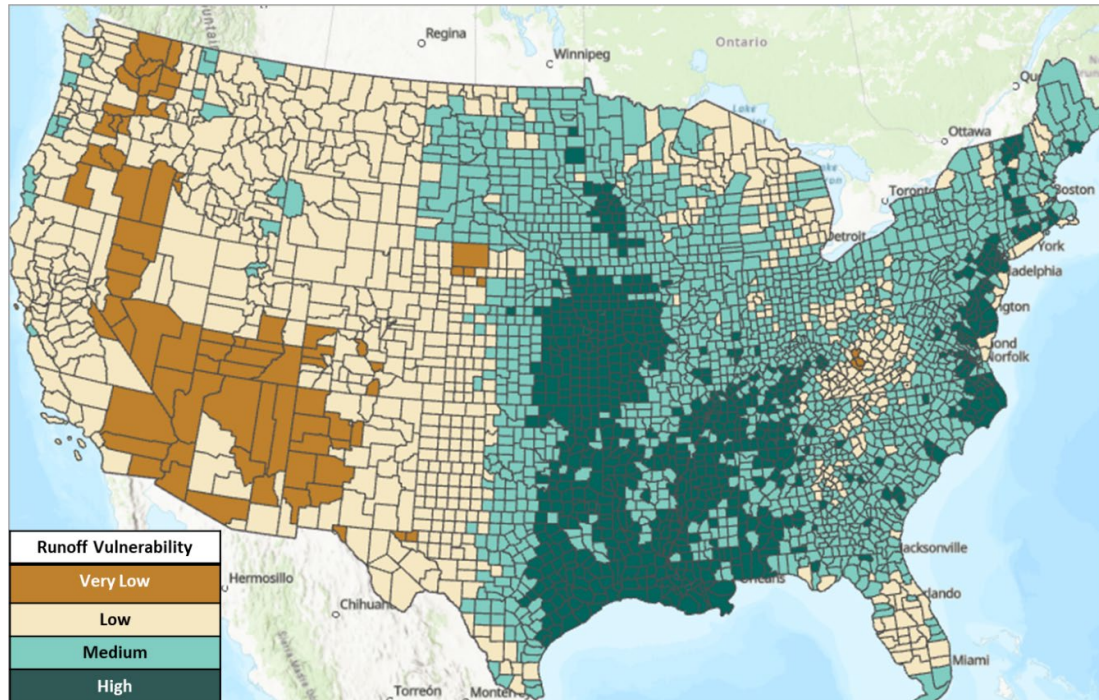


Image Credit: Lynn Betts / U.S. Department of Agriculture, Natural Resources Conservation Service

https://commons.wikimedia.org/wiki/File:Runoff_of_soil_&_fertilizer.jpg

<http://www.epa.gov/pesticides/mitigation-menu>

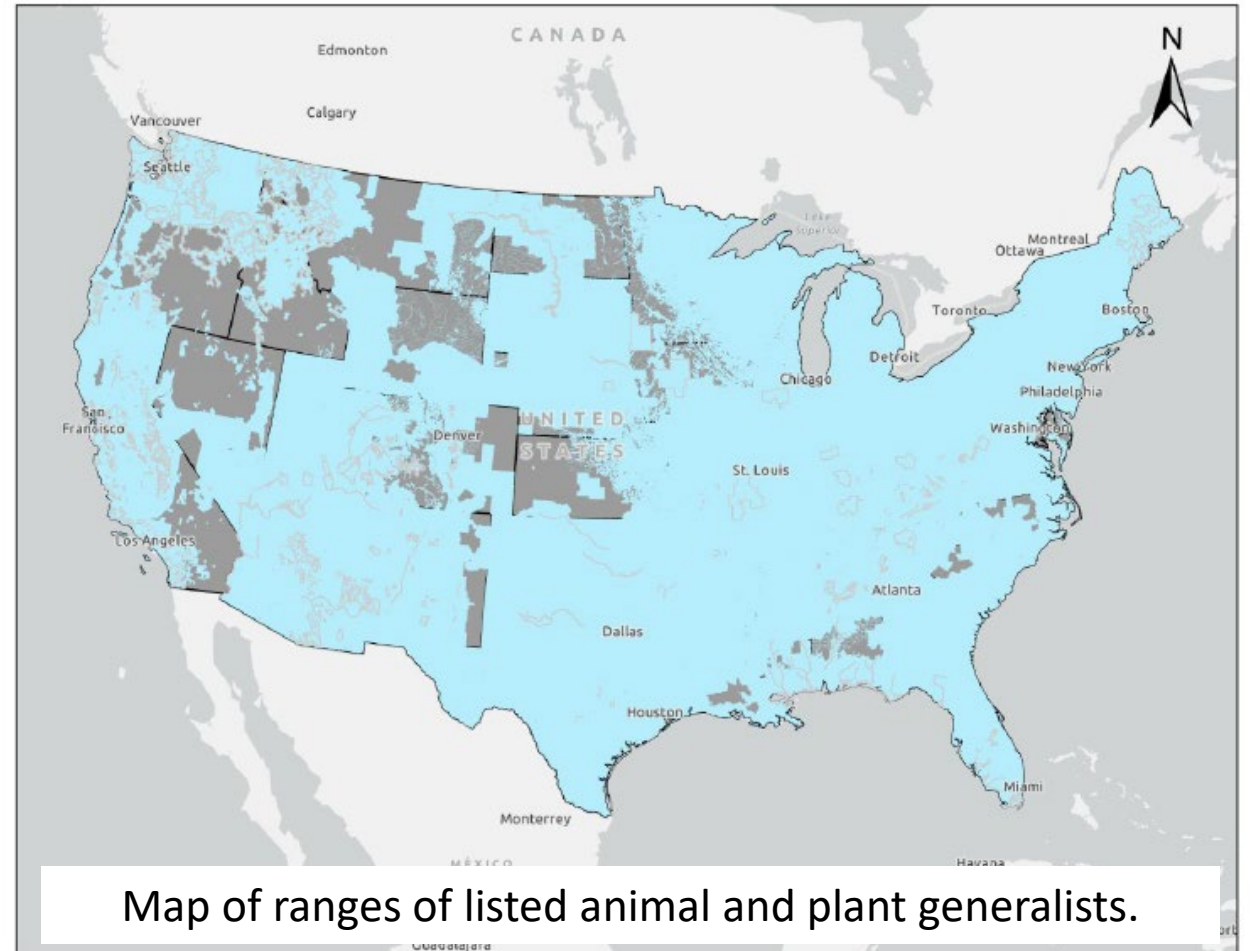
Runoff Vulnerability and Relief Points



Order of Magnitude Lower than Max	Pesticide Runoff Vulnerability	
	Classification	Relief Points
~2	Very low	6
~1	Low	3
Half	Medium	2
Maximum	High	N/A

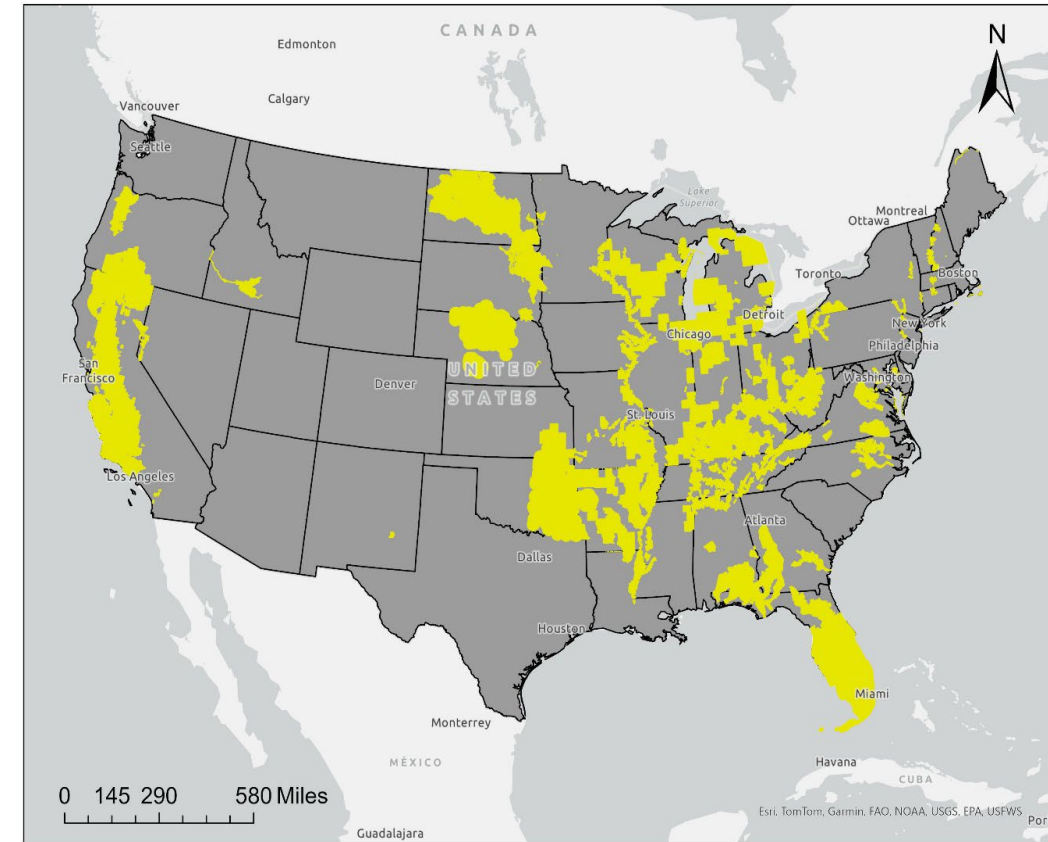
Step 3: Identifying Spatial Extent of Potential Mitigations – Listed Generalists

- Mitigations may be applied to a use site located anywhere in the contiguous US
- Since generalists occur throughout most of the contiguous US, protections for these species are expected to be conveyed on the general label

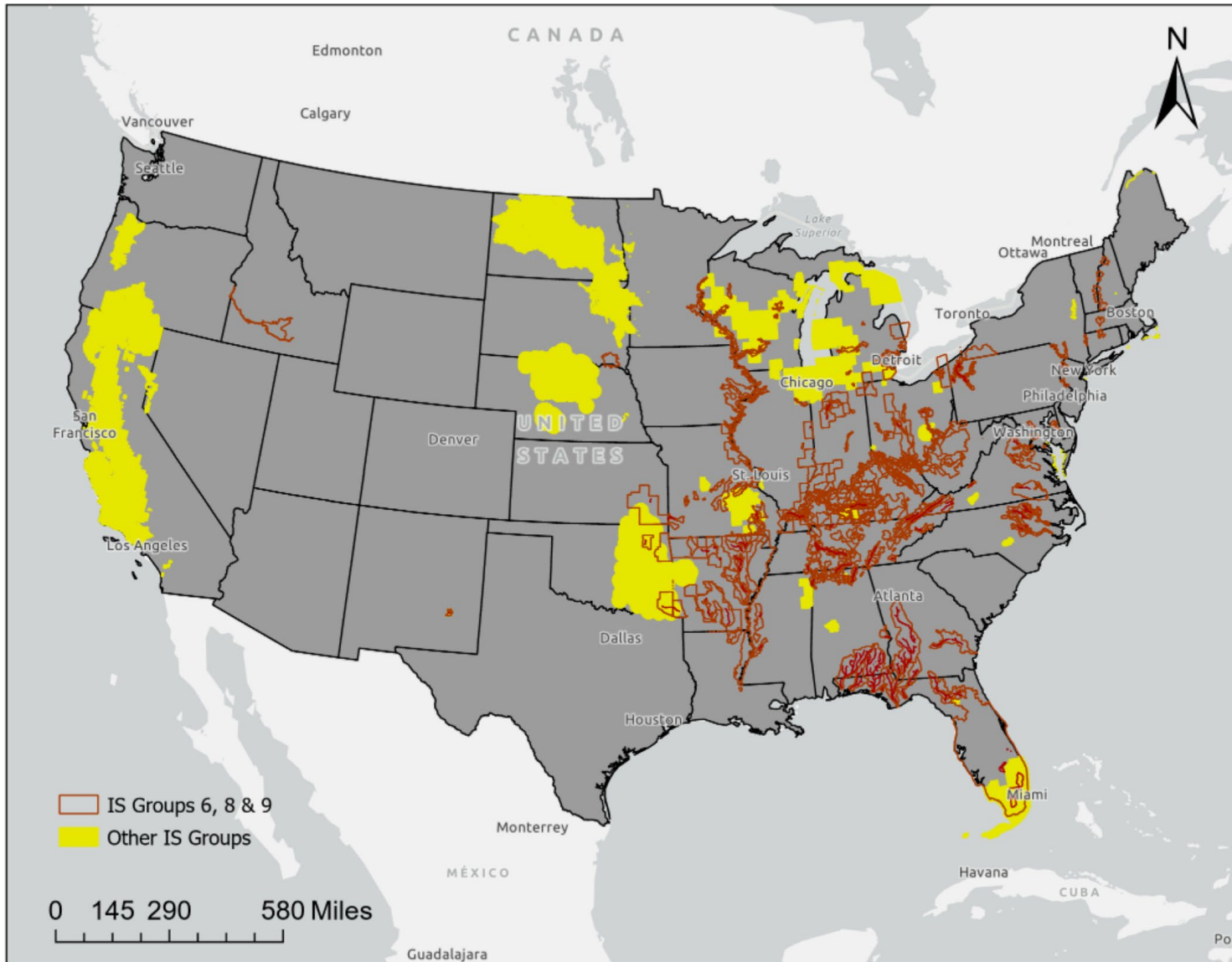


Step 3: Identifying Spatial Extent of Potential Mitigations – Listed Invertebrates

- Map shows **ranges and critical habitats** of listed invertebrate species potentially needing additional mitigations
 - These species ranges have medium or high overlap with known insecticide usage areas
 - This map does not show Pesticide Use Limitation Areas (PULAs), which would be a refined subset of this area.
 - Species occur in habitats where spray drift and/or runoff/erosion exposure has potential to impact the population
- EPA grouped these species by type and level of mitigation
 - There are 10 proposed PULA groups
- **EPA is currently refining the PULAs for these species**



All Draft Insecticide Strategy PULA Species



IS Group (PULA) #	Taxon	Habitat description
1-3	Terrestrial insects	Terrestrial areas near treated fields
4	Crustaceans	Vernal pools
5	Aquatic insect	Wetlands
6	Mussels/snails	Small water bodies and wetlands
7	Crustaceans	Wetlands and ponds
8	Mussels/snails	Low flow waters, ponds
9	Mussels/snails	Medium/large flowing waters, lakes
10	Crustaceans	Karst systems

What We Learned About Mitigations Based on Illustrative Case Studies

- For chemicals with lower toxicity to snails/mussels (greatest # of listed species):
 - Less mitigation identified compared to other listed species
 - Nationwide mitigations may be sufficient to prevent population-level impacts
- The more toxicity data we have for different species, the more targeted the mitigations are
- Greater level of mitigations identified for vernal pool species (small # of listed species)
- Less mitigation identified for listed species in large waterbodies compared to wetlands
- Spray drift is the exposure route likely leading to potential population-level impacts for listed terrestrial invertebrates

Implementation

- Focus on using the strategies to inform new active registrations and registration review. Other actions where the strategies apply will be considered.
- Opportunities for public input on proposed decisions including mitigations that may come from a final strategy
 - Proposed Interim Decisions with proposed mitigations before issuing an Interim Decision for Registration Review
 - Proposed decisions for new A.I.'s before issuing the final decision
- Label language may also include directions to access BLT and the mitigation menu website
- EPA will continue to provide educational materials and support to stakeholders

Coordination Across Pesticide Efforts at EPA

- Internal collaboration to ensure the mitigations in the Strategies are aligned with other EPA efforts
 - Draft Insecticide Strategy, Herbicide Strategy, and Vulnerable Species Pilot
- For example, runoff/erosion mitigation options are consistent across the Strategies and projects so a grower's investment in one mitigation measure is assured to receive credit across pesticides
- Level of mitigation needed across Strategies is likely to vary based on the potential for impacts to listed species and the goals of the projects
- EPA expects to align label language for mitigation measures across Strategies

Next Steps

- Public Comment Period Closes: September 23, 2024
 - Strategy is available in Docket ID: [EPA-HQ-OPP-2024-0299](https://www.regulations.gov/docket/EPA-HQ-OPP-2024-0299)
- Address and incorporate public comments on the draft Strategy
- Final Strategy March 2025



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Pop window on first access –OR–
Scroll to bottom right

Get pesticide updates by email



Stay tuned for updates on the Mitigation Menu Website

The screenshot shows the EPA website's navigation bar with the EPA logo and search bar. Below the navigation bar, the 'Pesticides' section is highlighted. The 'Mitigation Menu' page is displayed, featuring a sidebar with links to 'Pesticides Home', 'A-Z Index', 'Antimicrobial Pesticides', 'Biopesticides', and 'International Activities Related to Pesticides'. The main content area includes the title 'Mitigation Menu', the date 'Date of last update: May 23, 2024', and a list of links under 'On this page:'. A 'Helpful Links' box on the right contains links to 'Bulletins Live!', 'ESA Home', and 'USDA's Web Soil Survey tool to determine soil texture'.

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Mitigation Menu

Date of last update: May 23, 2024

On this page:

- [Purpose](#)
- [Background](#)
- [Runoff Vulnerability Map](#)
- [How do I know if Runoff/Erosion Mitigation is Required?](#)
- [Runoff/Erosion Mitigation Measures](#)

Helpful Links

- [Bulletins Live!](#)
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<https://www.epa.gov/pesticides/mitigation-menu>

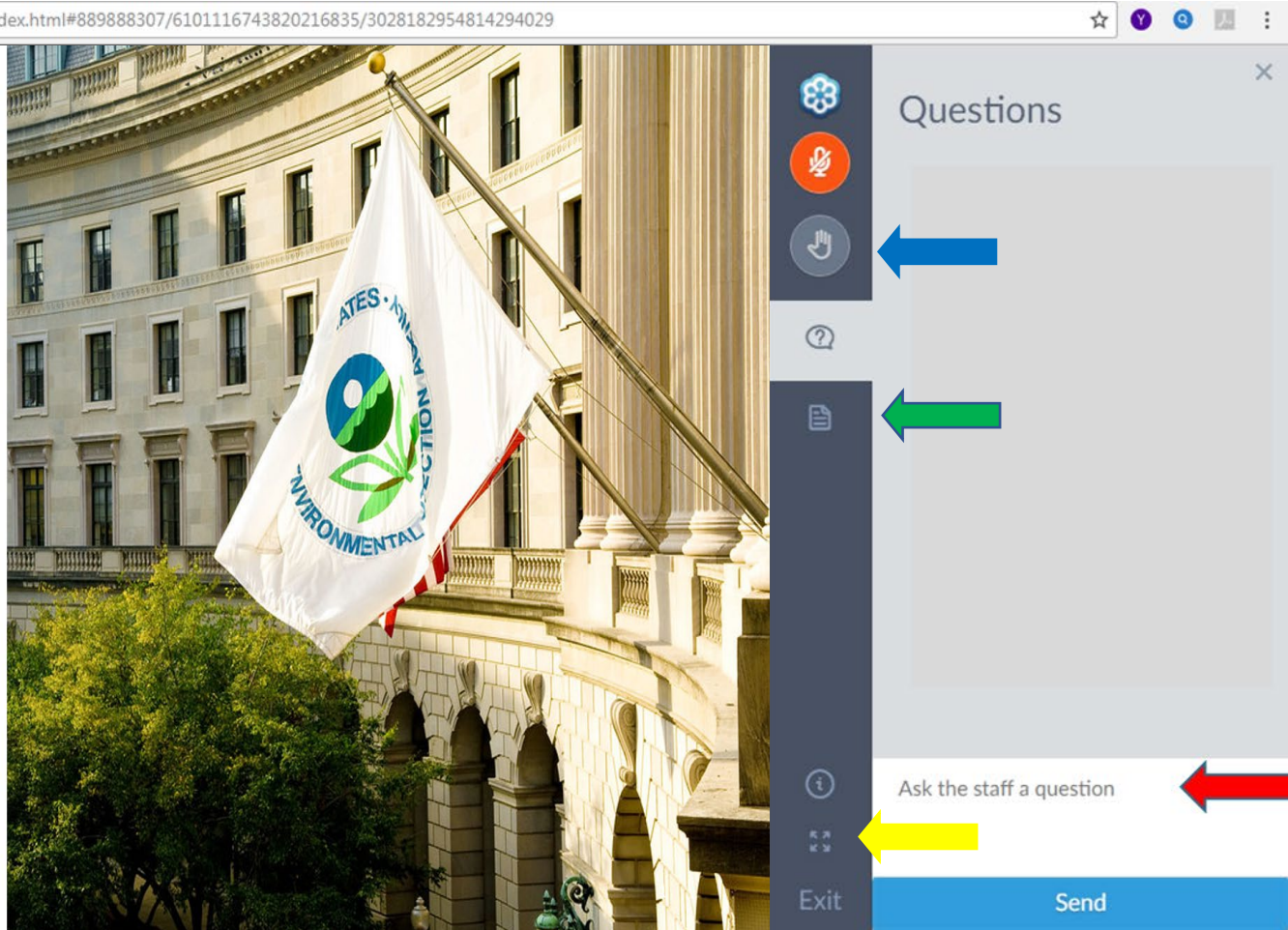
Questions?

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A recording of this webinar will be posted to EPA's ESA webpage along with the slides and transcript

Supplemental Slides

Application Methods for which Spray Drift Mitigation would Not be Identified

- Chemigation methods, including: micro-sprinklers, drip-tape, drip emitters, subsurface or flood, and under non-permeable plastic surfaces
- In-furrow sprays when nozzle height is <8 inches above soil surface
- Tree trunk drench, tree trunk paint, tree injection
- Soil injection
- Solid formulations that are used as a solid (e.g. seed treatments)
- Less than 1/10 acre (<4356 square feet) treated and Spot treatment: <1000 sq ft treated (e.g. when applied with backpack or hand held sprayers).

Mitigation for Overhead and Impact Sprinkler Chemigation Systems

Potential for Population- Level Impacts from Step 1	Mitigation Measures	
	Overhead Chemigation	Non-End Gun Impact Sprinklers
Not Likely	None	None
Low	No end gun	Limit throw distance to edge of field (treated area)
Medium	No end gun and one of the following: reduce pressure (<20 psi); reduce release height (<5 ft); have a windbreak	
High	No end gun and two of the following: reduce pressure (<20 psi); reduce release height (<5 ft); have a downwind windbreak	Limit throw distance to edge of field (treated area) AND have downwind windbreak

Application Methods that Do Not Require Runoff/Erosion Mitigation

- Tree Injection
- Chemigation methods, including: subsurface and under non-permeable plastic surfaces;
- Soil injection
- less than 1/10 acre (<4356 square feet) treated and spot treatment (<1000 sq ft treated)

Runoff/Erosion Mitigation Measures for which No Additional Mitigation Would Be Identified

- Systems with Permanent Berms
- Tailwater Return Systems
- Subsurface Tile-drains, with Controlled Drainage Structures