

# Introduction to Pesticide Registration and the Endangered Species Act



# Pesticide Labels Will Be Changing To Protect Threatened and Endangered (Listed) Species and Their Habitat

## Only a few labels will be changing this year!

**EPA Explains...**

## How to Read a Pesticide Product Label

- ✓ Read the entire label
- ✓ The label is the law
- ✓ Below is an example of information found on a pesticide product label

**Active Ingredients**

- ✓ Main chemical ingredients

**EPA Registration Number**

- ✓ U.S. laws require EPA to register all pesticides

**Directions for Use**

- ✓ Germs the product kills
- ✓ Where and how to properly use the product

**Precautionary Statements**

- ✓ The identified risks of product use
- ✓ Denotes whether personal protective equipment is needed

**First Aid**

- ✓ What to do if you get the product in your eyes or mouth, on your skin, or if you breathe it in

**Storage and Disposal**

- ✓ How to store
- ✓ Instructions on disposal and reuse of container

**ACTIVE INGREDIENTS:**  
Alkyl (60% C14, 30% C16, 5% C12, 5% C18) ..... 10.0%  
Dimethyl Benzyl Ammonium Chloride ..... 90.0%  
**OTHER INGREDIENTS:** ..... 90.0%  
**TOTAL:** ..... 100.0%

**EPA REG NO. 55555-55-55555**

**CAUTION**

**Directions for Use**

**INSTRUCTIONS FOR USE:**  
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**For Disinfection of Healthcare Organisms:**  
*Staphylococcus aureus*,  
*Pseudomonas aeruginosa*.

**To Disinfect Hard, Nonporous Surfaces:**  
Pre-wash surface.  
Mop or wipe with disinfectant solution.  
Allow solution to stay wet on surface for at least 10 minutes.  
Rinse well and air dry.

**PRECAUTIONARY STATEMENTS:**  
Hazardous to humans and domestic animals. Wear gloves and eye protection.

**CAUSES MODERATE EYE IRRITATION.** Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Avoid contact with foods.

**FIRST AID: IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes.

**POISON CONTROL:** Call a Poison Control Center (1-866-366-5048) or doctor for treatment advice.

**STORAGE AND DISPOSAL:** Store this product in a cool, dry area away from direct sunlight and heat. When not in use keep center cap of lid closed to prevent moisture loss. Nonrefillable container. Do not reuse or refill this container.

**EXP MM-DD-YYYY**  
5 55555 55555 5

**epa.gov/pesticides**

# What is the Endangered Species Act (ESA)

- The ESA was first passed in 1973.
  - Requires government agencies to ensure any actions they take will not jeopardize any species that have been federally listed as endangered or threatened or their designated critical habitats
- As listed in the statute the agencies that enforce the ESA are the [U.S. Fish and Wildlife Services](#) and/or the [U.S. National Marine Fisheries](#)
- EPA assesses the risk and consults with "the Services" as needed.
- If there is potential harm, the agency will modify the labels as needed to mitigate risk.

# Government Agency Roles



**EPA**

Regulates pesticides and approves labels



**FWS**

Protects listed terrestrial and freshwater species



**NMFS**

Protects listed marine (saltwater) species



**USDA**

Analyzes impacts of mitigations for agriculture

The "Services"

## Why Now? “Megasuit” settlement was finalized on **Sept 12, 2023**

"...the EPA **may not avoid compliance** with the ESA..."

Migrant Clinicians Network vs EPA. Dec 2023, 9th Circuit

It's déjà vu all over again. EPA comes before this court once more because of **its failure to abide by the law....**EPA cannot flout the will of Congress-of the people-just because it thinks it is too busy or understaffed.

Center for Food Safety v. Regan, Dec. 2022, 9th Circuit

"Before registering a pesticide, EPA must consult with the statutorily specified agencies that have expertise on risks to species' survival. **But for decades EPA routinely skipped that step when it registered pesticides....**"

Center for Biological Diversity v. EPA, Dec. 2022, DC Circuit

EPA has long had a **fraught relationship with the ESA**. It has made a habit of registering pesticides without making the required effects determination.

In re: Center for Biological Diversity and Center for Food Safety, Nov. 2022, DC Circuit

# Timeline: When Could Labels Change?

- Individual labels will have to be changed after notice and comment period
- This has started now and will continue for years to change pesticide labels
- Strategies are coming for all types of conventional pesticides:
  - All strategies should have similar mitigation elements
  - Herbicides finalized (August 2024),
  - Insecticides (2025),
  - Fungicides (2026), and
  - Rodenticides finalized (2024)

Mead's Milkweed  
US FWS



# ESA is Successful: 99% of Listed Species are Still Alive and 291 Species Have Been Delisted (some examples)

Animals	Plants
Bald eagles	Eggert's sunflower
Peregrine falcons	Maguire daisy
Manatees	Mountain golden heather
Sea turtles	Robbins' cinquefoil
Southern sea otter	San Clemente Island bush mallow
Maguire primrose	San Clemente Island lotus
Black-footed ferret	San Clemente Island paintbrush
Gray wolf	sandplain gerardia
	seabeach amaranth
	small whorled pogonia
	Tennessee coneflower
	Texas wild rice
	Virginia round-leaf birch
	Santa Cruz Island Dudleya
	Santa Cruz Island bedstraw



Eggert's sunflower  
CBD



Maguire Daisy  
US FWS

# ESA Protection: People Say this is Too Complicated. But the EPA or Courts Have Three Main Registration Choices

Option 1: Remove pesticide from the U.S. marketplace

- Any pesticide that could impact listed species or critical habitat could have its registration removed

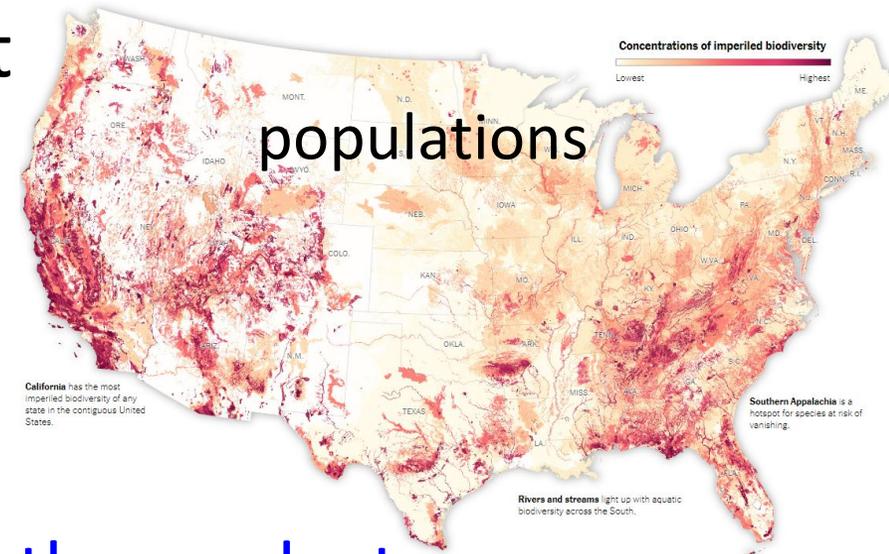
Option 2: Restrict its use to only crops/sites in counties or states without listed species or critical habitat

- Map of listed species, more red shows larger populations (NY Times 2022 Map)

Option 3: Add mitigations to protect species

- Minimizes the number of impacted users, allows use in many crops/ sites and areas

Outlook: Would you prefer to not have access to the product or have access to it with mitigations?



# ESA: Compliance and Will It Go Away

- Compliance with label mitigations.
  - State Lead Agencies will enforce labels.
  - Each state will decide the best way to do that.
- Will it go away?
  - Any modifications would require bipartisan support (e.g., some years Congress can't even pass the Budget).
  - The ESA has been successfully functioning for 50 years, and people want to protect golden eagles, Florida manatees, etc.

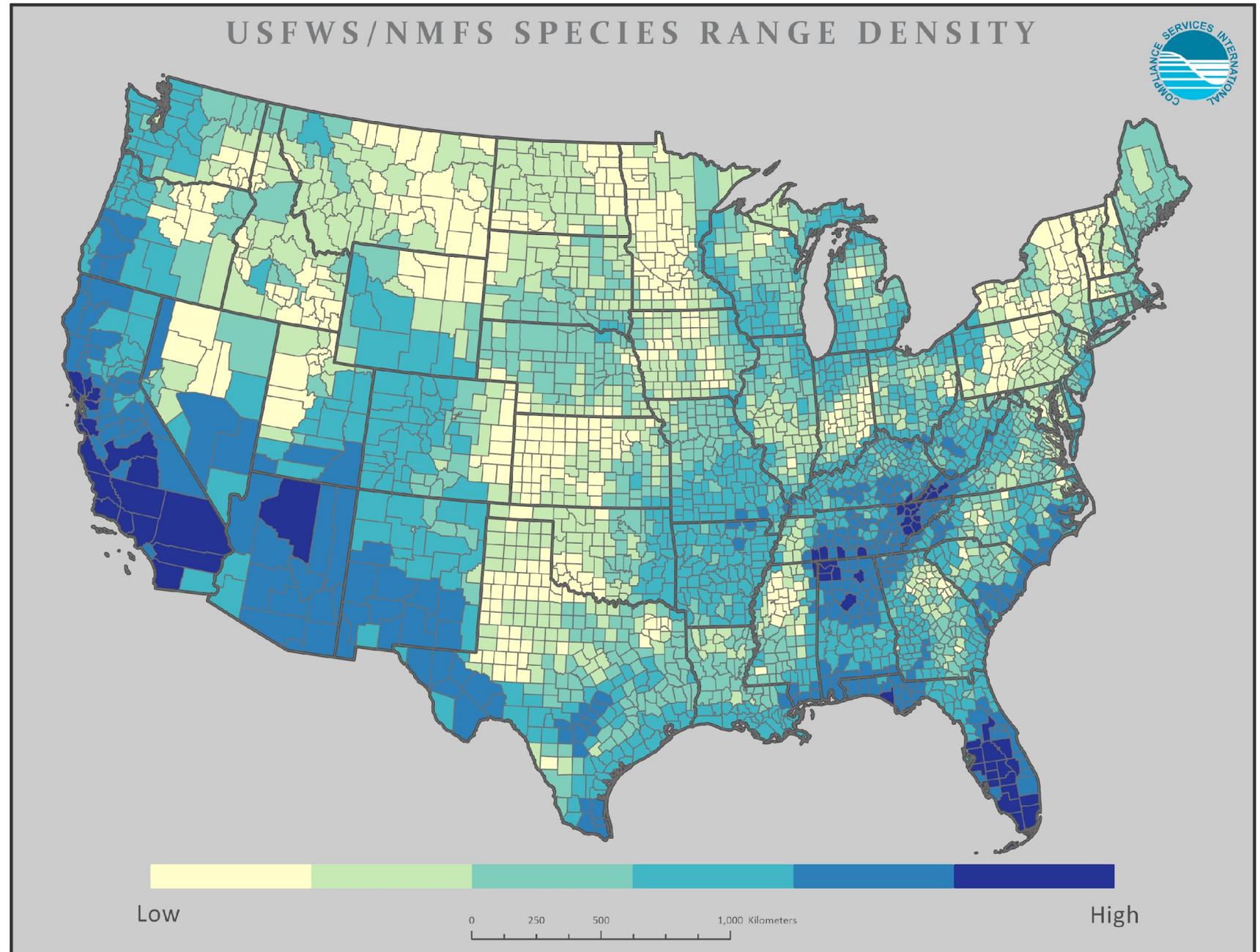


Mead's Milkweed

## A National Situation with Local Implications

Every county in the US has at least one ESA-listed species and impacts are local. These need to be addressed locally by the end user.

Darker the color the greater density of species



# Over 1,700 Species are on the Endangered Species List



U.S. Fish & Wildlife Service 

Over 900 species are potentially impacted by herbicides.

Over 850 species are potentially impacted by insecticides.

# Label Changes to Protect Listed Species and Their Critical Habitat

Herbicide Strategy: First example Liberty<sup>®</sup> Ultra

There are three types of label changes possible, aimed at mitigating the following:

- Spray drift
- Runoff/Erosion
- Impacts to specific geographic locations where listed species or their critical habitat are found, Pesticide Usage Limitation Areas (PULAs)

# Herbicide Strategy: Finding Required

## Mitigations

For conventional agricultural uses, mitigations have to be determined for each field, not an entire farm

Required spray buffer and runoff/erosion mitigation can be different for each herbicide and crop combination.

Mitigations may appear on up to 3 places:

- On the product label
- Label may direct user to Bulletins Live! Two (BLT) webpage  
<https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>
- Label may direct user to Mitigation Menu webpage  
<https://www.epa.gov/pesticides/mitigation-menu>

Additional Information

- Pesticides and Endangered Species Education Resources Toolbox  
<https://www.epa.gov/endangered-species/pesticides-and-endangered-species-educational-resources-toolbox>

# Spray Drift Buffers – Percent Scale

- Buffers are downwind only
- Buffers are to protect “unmanaged areas”
- Managed areas outside of the treated area can be part of the spray drift buffer, such as agricultural field, roads, CRP land, and mowed areas



USDA NIFA

- There are over 15 ways to reduce buffer distances.
- Some applications do NOT need buffers such as spot treatments, tree injections, chemigation.

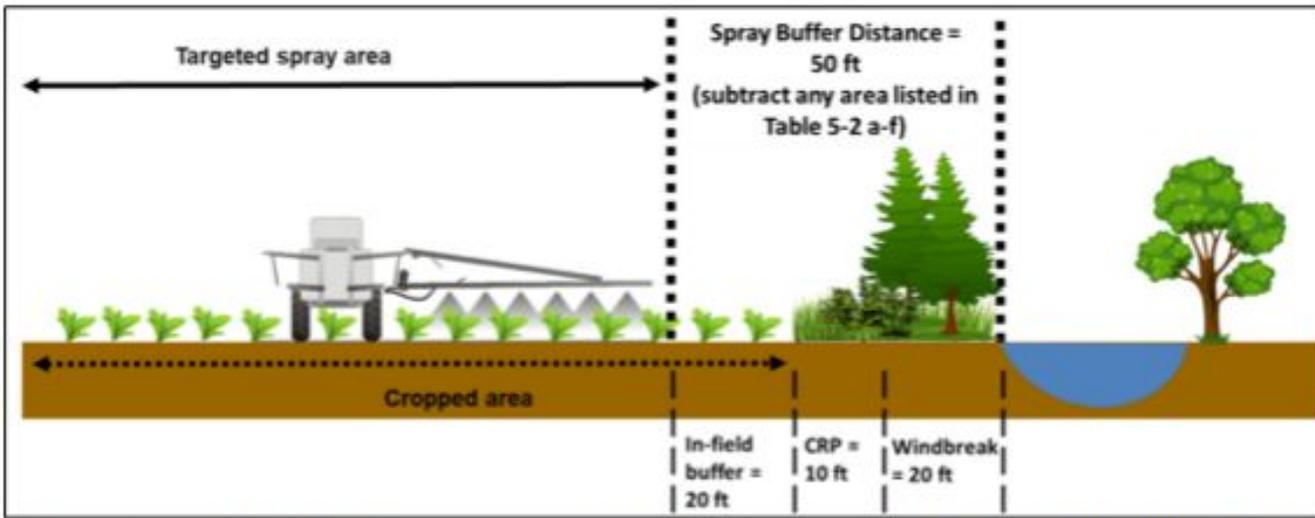


Figure 7. Diagram of the field (cropped area) with a downwind ecological spray drift buffer which includes a portion of the cropped area because the adjacent managed areas are less than the identified spray drift buffer distance.<sup>25</sup>

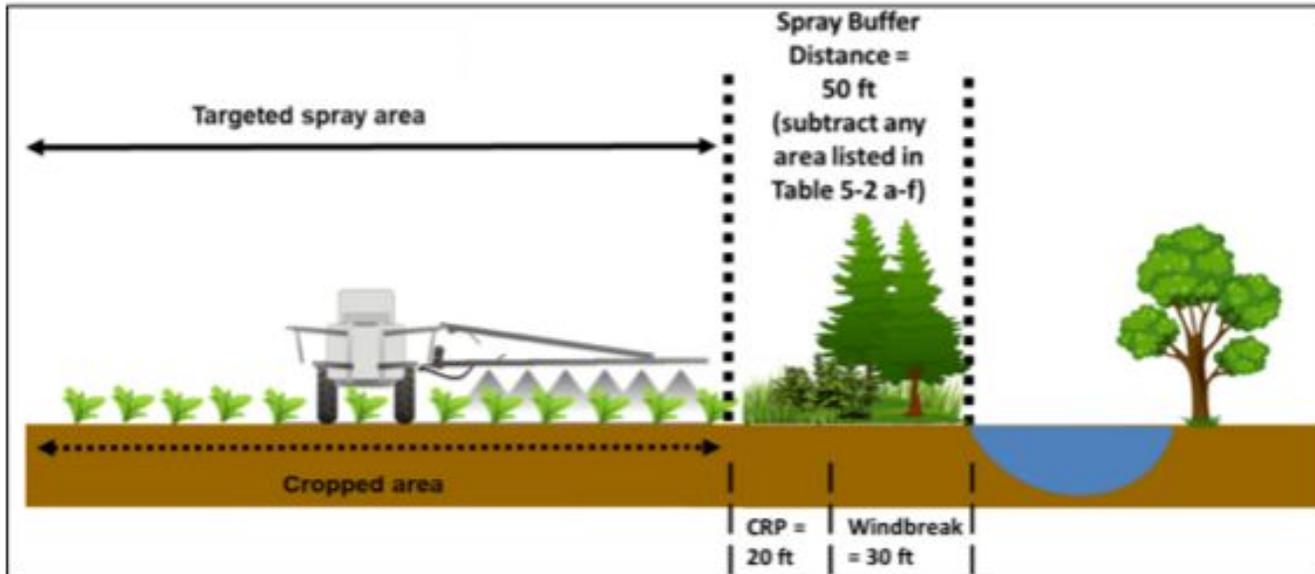


Figure 8. Diagram of the field (cropped area) with no cropped area included in the downwind ecological spray drift buffer because adjacent managed areas are equal to the identified spray drift buffer distance.<sup>25</sup>

## Spray Drift Example: 50 Foot Buffer Requirement

# Mitigation for Runoff/Erosion – Point System



- Designed to protect listed species and critical habitat up to 1,000 feet downslope.
- Some areas outside of treated area can be included in the 1,000 feet, such as ag fields, roads, gravel surfaces, field buffers, conservation reserve land, etc.
- Herbicides will need 0 to 9 mitigation points, which will be listed on label
- There are ~40 ways to reduce runoff/erosion mitigations.
- Some applications do not need buffers, such as spot treatments, tree injections, chemigation, field has permanent berms, or tailwater return systems, etc.

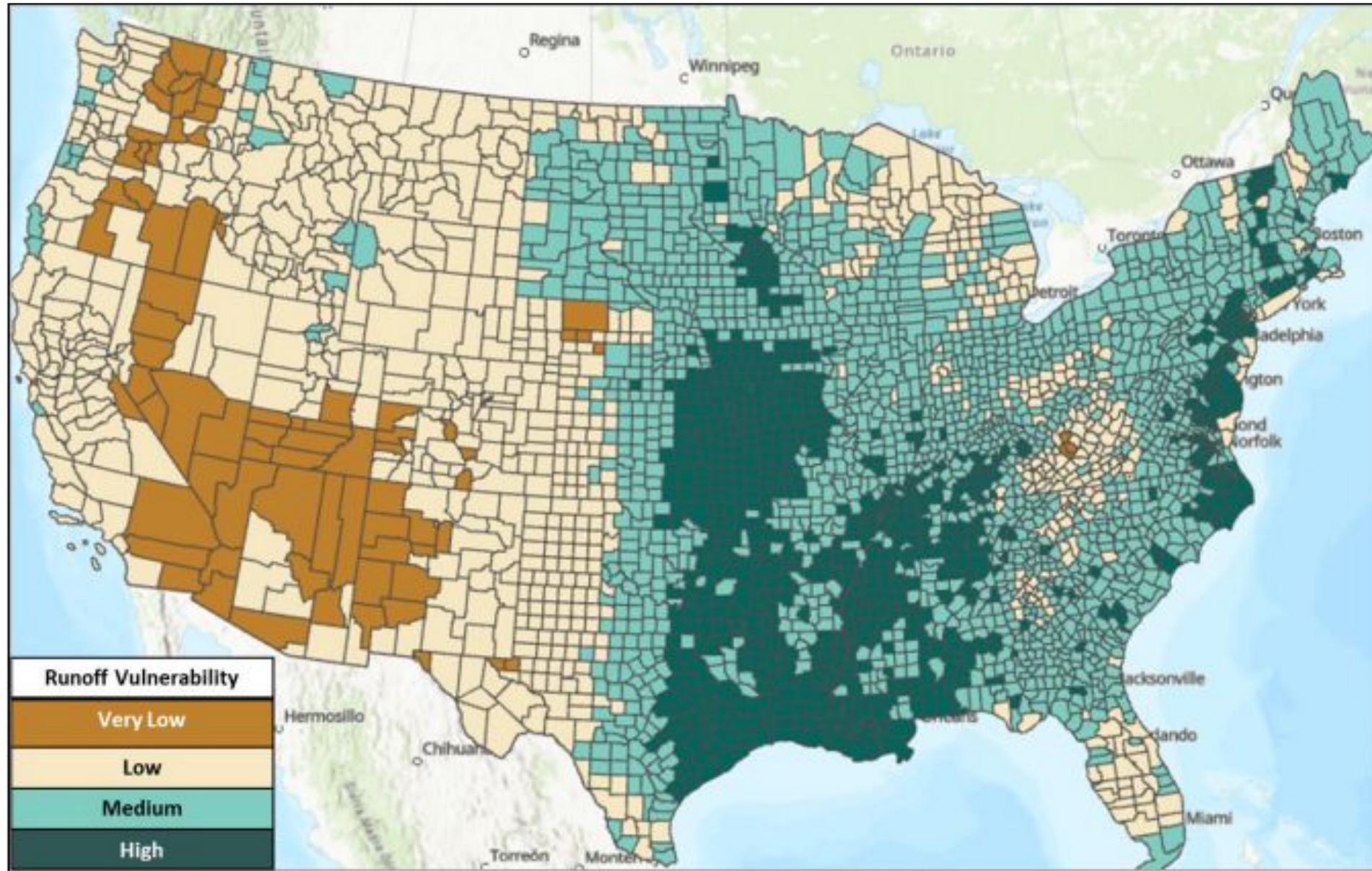
# Runoff/Erosion **DRAFT** Points – each herbicide by crop combination can have different points

Crop	2,4-D	Dicamba	Diuron	Metolachlor	Oxyfluorfen	Paraquat	Pendimethalin	Trifluralin
Alfalfa	NA	NA	9	NA	NA	0	3	5
Citrus	3	NA	9	NA	5	0	3	5
Corn	6	6	6	6	7	0	3	5
Cotton	NA	6	6	6	5	0	3	5
Grapes	3	NA	9	NA	7	0	5	5
Other Orchards	6	NA	9	NA	5	0	3	5
Other Grains	6	3	6	1	NA	0	3	5
Rice	NA	NA	NA	NA	NA	0	NA	NA
Soybeans	6	6	NA	6	5	0	NA	5
Vegetable/ Ground Fruit*	6	6	6	6	5	0	3	5
Wheat	6	6	6	NA	NA	0	NA	5

Metolachlor / s-metolachlor = points range from **1 to 9** depending on PULA area (soybeans, VGF, & aquatic areas are higher ).

NA = not applicable because not registered.

# Pesticide Runoff Vulnerability at County Level



# Pesticide Use Limitation Areas (PULA) and Bulletins Live! Two

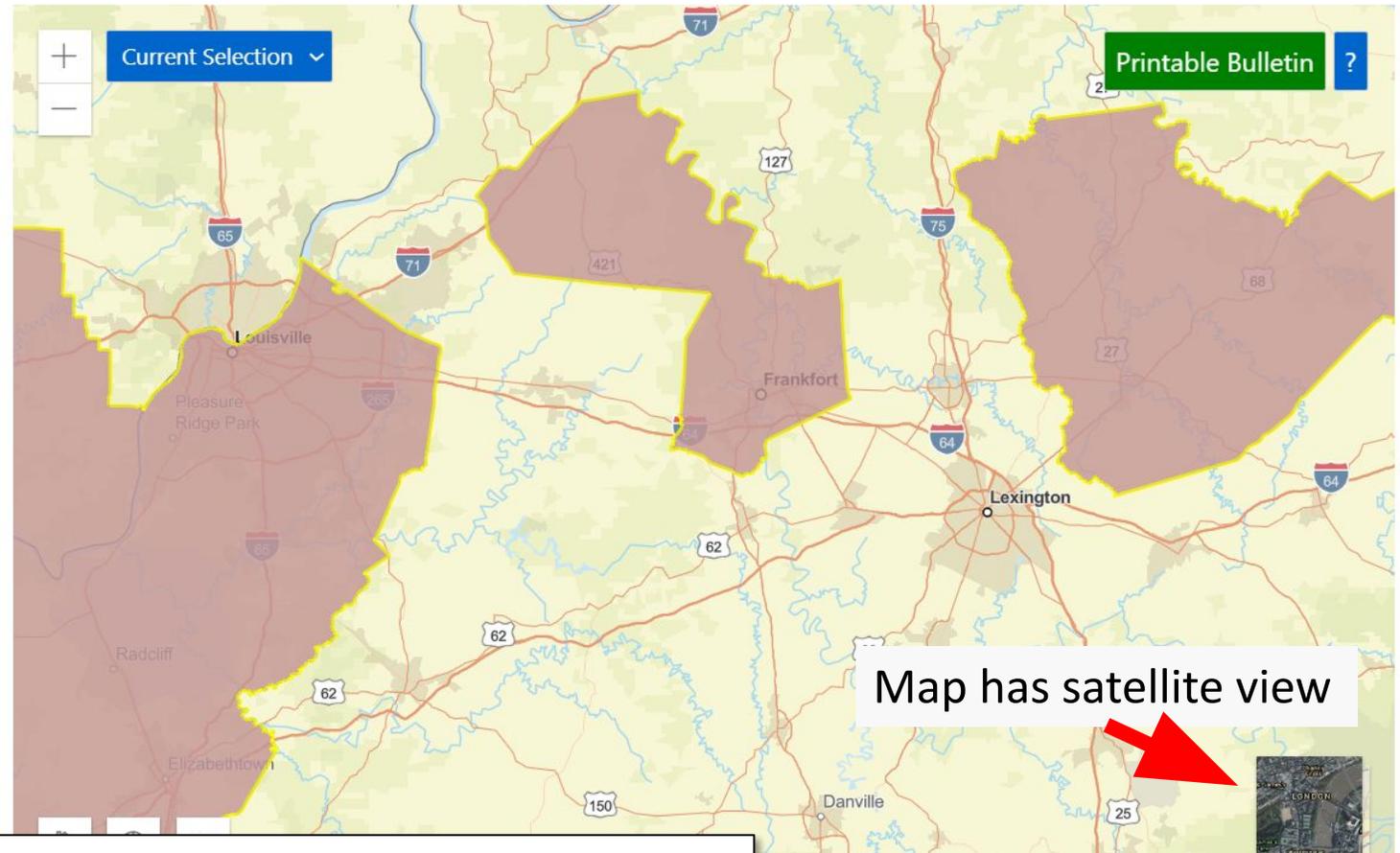
- The label may direct you to a website to see if your pesticide application is within a Pesticide Use Limitation Area (PULA)
  - <https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>
- Bulletins Live! Two lists additional mitigations to protect listed species and critical habitat.
- EPA identifies geographic areas most critical to conserve a listed species and then adds buffers (1,000 feet or less) to account for potential offsite transport from a treated field.
- If Bulletins Live! Two shows your field is outside of a PULA, it is in your best interest to document that there are no limitations within the month of your pesticide application.
  - You can check Bulletins Live! Two up to 6 months before the application

# Example ESA Bulletins Live! Two: Pesticide Use Limitation Area (PULA) Dicamba – Aug 2024 application, Lexington KY

Areas in pink are to protect listed species, 310 foot in-field wind-directional spray drift buffer and a 57-foot omnidirectional in-field buffer. Website has a lot more details.

You can use state, city or longitude then latitude of field application site and see if it is part of a PULA

Limitations for Selected Area	
<b>Pula ID:</b> 52	
<b>Event Name:</b> Dicamba - 2020	
<b>Application Month:</b> August 2024	
Product	Count
A21472 PLUS VAPORGRIP TECHNOLOGY (100-1623) <i>Alternate Names:</i> TAVIUM PLUS VAPORGRIP TECHNOLOGY	1
ENGENIA HERBICIDE (7969-472)	1
FEXAPAN PLUS VAPORGRIP TECHNOLOGY (352-938)	1
TAVIUM PLUS VAPORGRIP TECHNOLOGY (100-1623) <i>Alternate Names:</i> TAVIUM PLUS VAPORGRIP TECHNOLOGY	1



Make sure to in zoom enough so you can see the application area – especially if it is on the edge of a PULA.



**Application Month:** July 2023  
**Product:** All products with limitations

**1** Areas where pesticide use must be limited are identified on the map located beside the map to help pinpoint these locations.



**2** Look below at the Pesticide Use Limitation Summary Table. Select the Active Ingredient(s) (AIs) or Product(s) with pesticide use limitations printed on the map. Locate the Active Ingredient (AI) or Product you intend to use in the table and identify the code in the last column. This code indicates the limitation associated with that AI or Product. A limitation description can be found below in the Codes and Limitations Table. If multiple Pesticide Use Limitation Areas (PULAs) are visible on the map, these tables provide the highlighted PULA.

If you are applying a pesticide that contains more than one Active Ingredient, then multiple codes may apply. Follow the limitations when using this pesticide.

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## Endangered Species Protection

### Pesticide Use Limitation Summary Table

Product	AI	Use	Method
A21472 PLUS VAPORGRIP TECHNOLOGY (100-1623) Alternate: TAVIUM PLUS VAPORGRIP TECHNOLOGY	Dicamba, diglycolamine salt	Dicamba-Tolerant Cotton	Ground spray
A21472 PLUS VAPORGRIP TECHNOLOGY (100-1623) Alternate: TAVIUM PLUS VAPORGRIP TECHNOLOGY	Dicamba, diglycolamine salt	Dicamba-Tolerant Soybean	Ground spray
ENGENIA HERBICIDE (7969-472)	Dicamba	Dicamba-Tolerant Cotton	Ground spray
ENGENIA HERBICIDE (7969-472)	Dicamba	Dicamba-Tolerant Soybean	Ground spray
FEXAPAN PLUS VAPORGRIP TECHNOLOGY (352-938)	Dicamba, diglycolamine salt	Dicamba-Tolerant Cotton	Ground spray
FEXAPAN PLUS VAPORGRIP TECHNOLOGY (352-938)	Dicamba, diglycolamine salt	Dicamba-Tolerant Soybean	Ground spray
TAVIUM PLUS VAPORGRIP TECHNOLOGY (100-1623) Alternate: TAVIUM PLUS VAPORGRIP TECHNOLOGY	Dicamba, diglycolamine salt	Dicamba-Tolerant Cotton	Ground spray

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TAVIUM PLUS VAPORGRIP TECHNOLOGY (100-1623) Alternate: TAVIUM PLUS VAPORGRIP TECHNOLOGY	Dicamba, diglycolamine salt	Dicamba-Tolerant Soybean	Ground spray	Liquid	D120
XTENDIMAX WITH VAPORGRIP TECHNOLOGY (264-1210) Alternate: M1768 Herbicide	Dicamba, diglycolamine salt	Dicamba-Tolerant Soybean	Ground spray	Liquid	D120
XTENDIMAX WITH VAPORGRIP TECHNOLOGY (264-1210) Alternate: M1768 Herbicide	Dicamba, diglycolamine salt	Dicamba-Tolerant Cotton	Ground spray	Liquid	D120

### Codes and Limitations Table

Code	Limitation
D120	To protect federally listed threatened and endangered species, both a 310-foot in-field wind-directional spray drift buffer and a 57-foot omnidirectional in-field buffer are required. If applying to dicamba-tolerant soybeans with a qualified hooded sprayer, both a 240-foot in-field wind-directional spray drift buffer and a 57-foot omnidirectional in-field buffer are required to protect federally listed threatened and endangered species. Please see the label for a link to the website(s) with your product's qualified hooded sprayers. The following areas may be included in the buffer distance composition when directly adjacent to the treated field edges: 1. Roads, paved or gravel surfaces, mowed grassy areas adjacent to field, and areas of bare ground from recent plowing or grading that are contiguous with the treated field. 2. Planted agricultural fields containing dicamba-resistant plantings of cotton and soybeans. 3. Areas covered by the footprint of a building, silo, or other man-made structure with walls and/or roof.

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# ESA Resources

Rusty patch bumblebee



## EPA Endangered Species Main Page

- <https://www.epa.gov/endangered-species>

## Pesticides and Endangered Species Educational Resources Toolbox

- <https://www.epa.gov/endangered-species/pesticides-and-endangered-species-educational-resources-toolbox>

## EPA Bulletin Live! Two (BLT)

- <https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>

## EPA Mitigation Menu

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

## Weed Science Society of America webpage – definitions, handouts, and presentations

- <https://wssa.net/endangered-species/>

## Mitigation Strategy Tool from by CropLife America and Compliance Services International

- <https://mitigationstrategytool.org/>

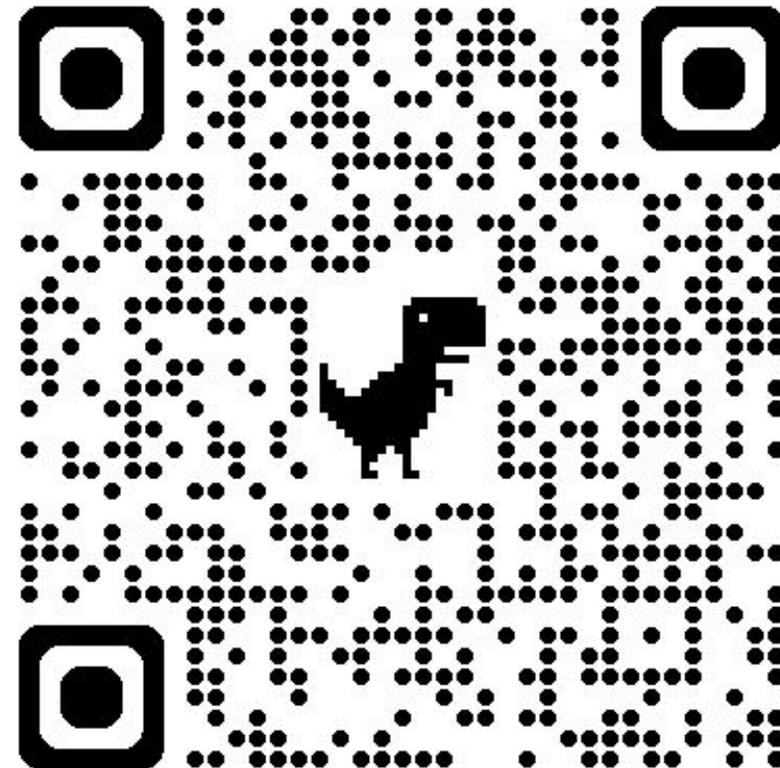
## Pesticide Environmental Stewardship Website from the Center for Integrated Pest Mgmt

- <https://pesticidestewardship.org/>

## Protecting Endangered Species from Pesticides



# EPA Endangered Species Main Page



### About

- [About the endangered species program](#)
- [Assessing pesticides under the ESA](#)
- [Litigation and associated pesticide limitations](#)
- [Implementing NAS Report Recommendations on Ecological Risk Assessment for Endangered and Threatened Species](#)
- [Conventional Pesticide Registration](#)

### Endangered Species Act Workplan

- [EPA's workplan and progress toward better protections for endangered species](#)
- [Implementing EPA's Workplan to Protect Endangered and Threatened Species from Pesticides: Pilot Projects](#)
- [Assessing effects of new pesticides on listed species](#)

### Biological Evaluations (BEs)

- Final BE Chapters for [Chlorpyrifos](#), [Malathion](#), [Diazinon](#), [Carbaryl](#), [Methomyl](#), [Atrazine](#), [Simazine](#), [Glyphosate](#), [Clothianidin](#) (updated), [Imidacloprid](#) (updated), [Thiamethoxam](#) (updated), [Sulfoxaflor](#) [Elist](#) [Inpyrfluxam](#) [Cyantraniliprole](#) [Fluazaindolizine](#) [Pyraclozil](#) [Dinotefuran](#) [Acetamiprid](#) [Rodenticide BE and Mitigation Strategy](#) [Draft BE Chapters for Propazine](#), [Bicyclopyrone](#) [Benzovindiflupyr](#) [Provisional Models and Tools Used in EPA's Pesticide Endangered Species Biological Evaluations](#)
- [Models and Tools for National Level Listed Species Biological Evaluations of Neonicotinoid Insecticides](#)

### Protections for Endangered Species

- [Effects determinations](#)
- [Pesticide restrictions](#)
- [Bulletins Live! Two](#)
- [Information for pesticide users](#)
- [Publicly available geospatial data](#)

### Recent Highlights

- [Proposed Guidance to registrants on Endangered Species Act considerations for antimicrobial pesticides](#)
- [Pesticides and Endangered Species Educational Resources Toolbox](#)
- [Draft methomyl biological opinion from FWS available for public comment](#)
- [Memorandum of Understanding Between EPA and USDA to Help Protect Endangered Species and Support Sustainable Agriculture](#)
- [Final guidance to registrants for pesticide submissions for new outdoor uses that require Endangered Species Act reviews](#)
- [Final guidance to registrants for new active ingredients and registration review](#)
- [EPA's workplan and progress toward better protections for endangered species](#)
- [Reports to Congress on Improving Consultation Process Under Endangered Species Act Section 7 for Pesticide Registration & Registration Review](#)
- [EPA's Vulnerable Species Pilot Project](#)
- [Vulnerable Species Pilot Webinar](#)
- [EPA's Final Herbicide Strategy](#)

# Conclusion & Space For State Information

- Work collaboratively
- The ESA assessment process is very new and still evolving
- Growers will have to look at drift, runoff/erosion, and PULAs on a field-by-field basis
- ESA changes will happen gradually over several years
- Any other state specific information?
- Is there a state contact person?

Lakeside daisy

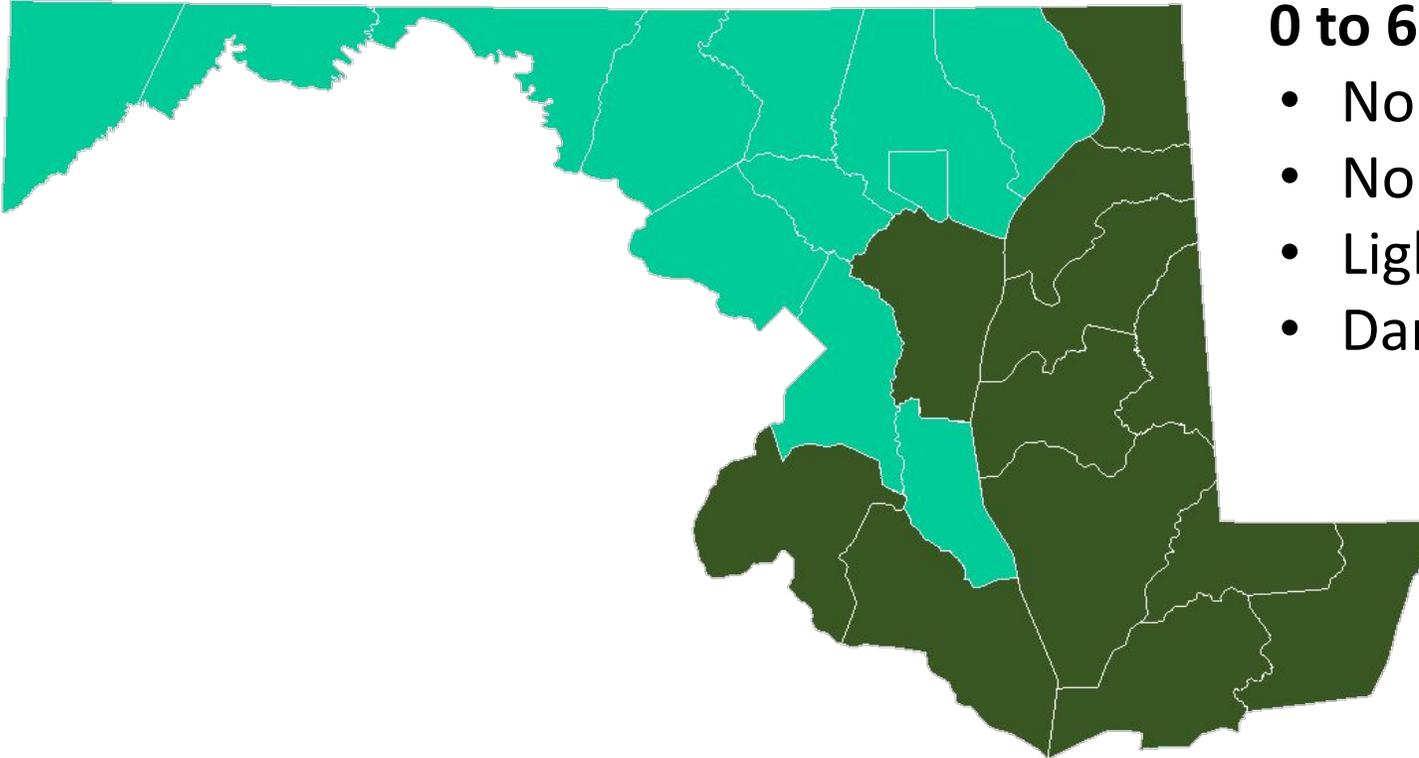


# Collaborative Effort – December 2024

- Weed Science Society of America, Endangered Species Act Committee
  - Bill Chism, Chair
- American Association of Pesticide Safety Educators
  - Niranjana Krishnan, University of Maryland
  - Kim Brown, University of Tennessee
- U.S. Department of Agriculture, Office of Pest Management Policy
  - Cameron Douglass
  - Elyssa Arnold
- Support from U.S. Environmental Protection Agency
  - *Any mention of trade names, manufacturers or products does not imply an endorsement by the US Government of the United States Environmental Protection Agency. EPA and its employees do not endorse any commercial products, services, or enterprises.*

## Back Pocket Slide

# Maryland Mitigation Relief Points for Conservation Practices



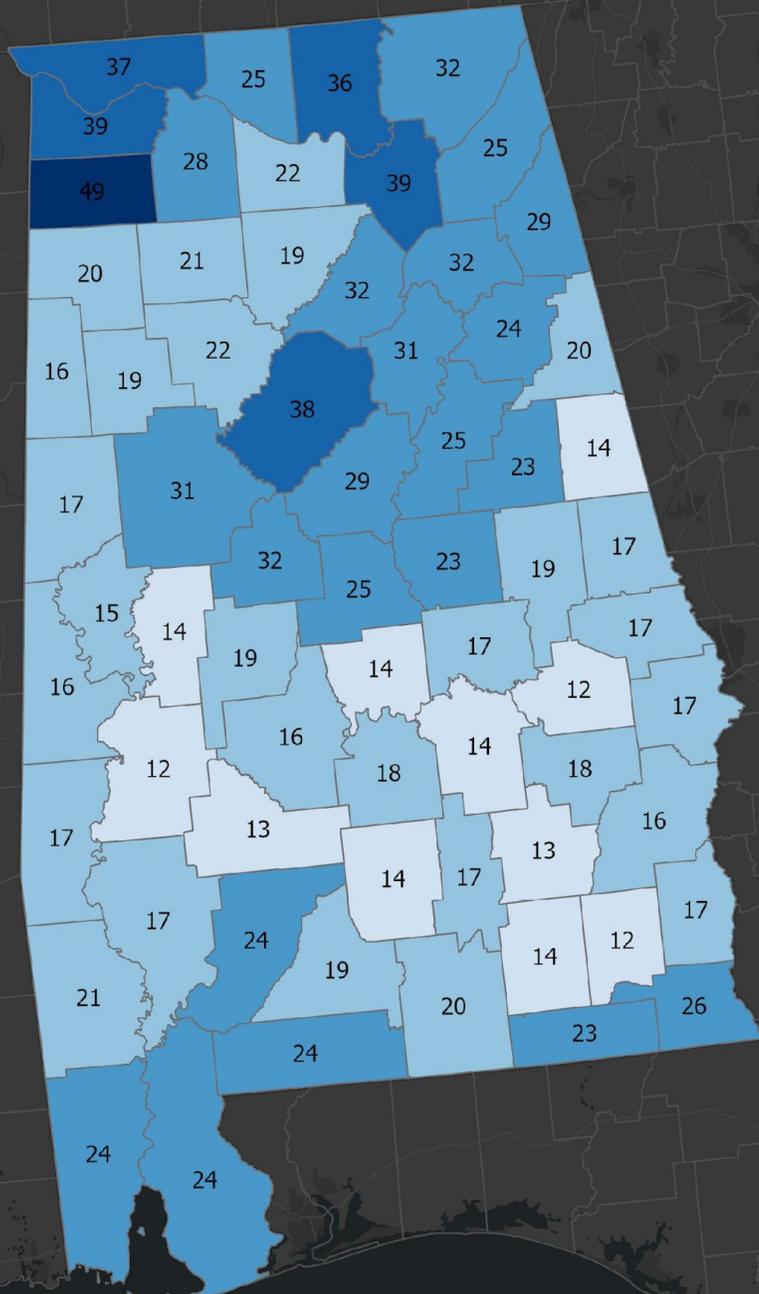
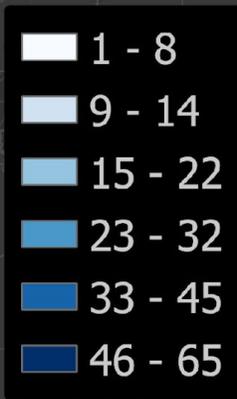
### 0 to 6 Relief Points Possible

- No counties with 6 points
- No counties with 3 points
- Light green = 2 points in 12 counties
- Dark green = 0 points in 12 counties

From: <https://www.epa.gov/pesticides/mitigation-menu#map>

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© GeoNames, TomTom

# Back Pocket Slide



## Count of ESA-Listed Species in Alabama Counties (October 2024)

Species counts are based on unique "Entity ID" records in spatial data representing current range downloaded from the US Fish & Wildlife ECOS website, accessed October 1, 2024. Entities include species with the following listing statuses under the Endangered Species Act (ESA): Candidate, Endangered, Proposed Endangered, Threatened, Proposed Threatened, Similarity of Appearance (Endangered), Similarity of Appearance (Threatened), and Experimental Population, Non-Essential.

This product is for informational purposes only. Users of this product should review or consult its primary data sources to assess the usability of the information.