

# ENDANGERED SPECIES ACT (ESA) POTENTIAL LABEL CHANGES

Piping  
plover



Special thanks to:

Mark VanGessel, Extension Weed Specialist  
University of Delaware

Dr. Bill Chism, EPA, OPP retired, Chair, WSSA  
Endangered Species Act Committee

# Over 1,700 Species on the Endangered Species List



U.S. Fish & Wildlife Service

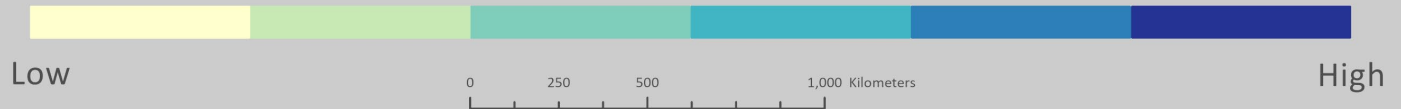
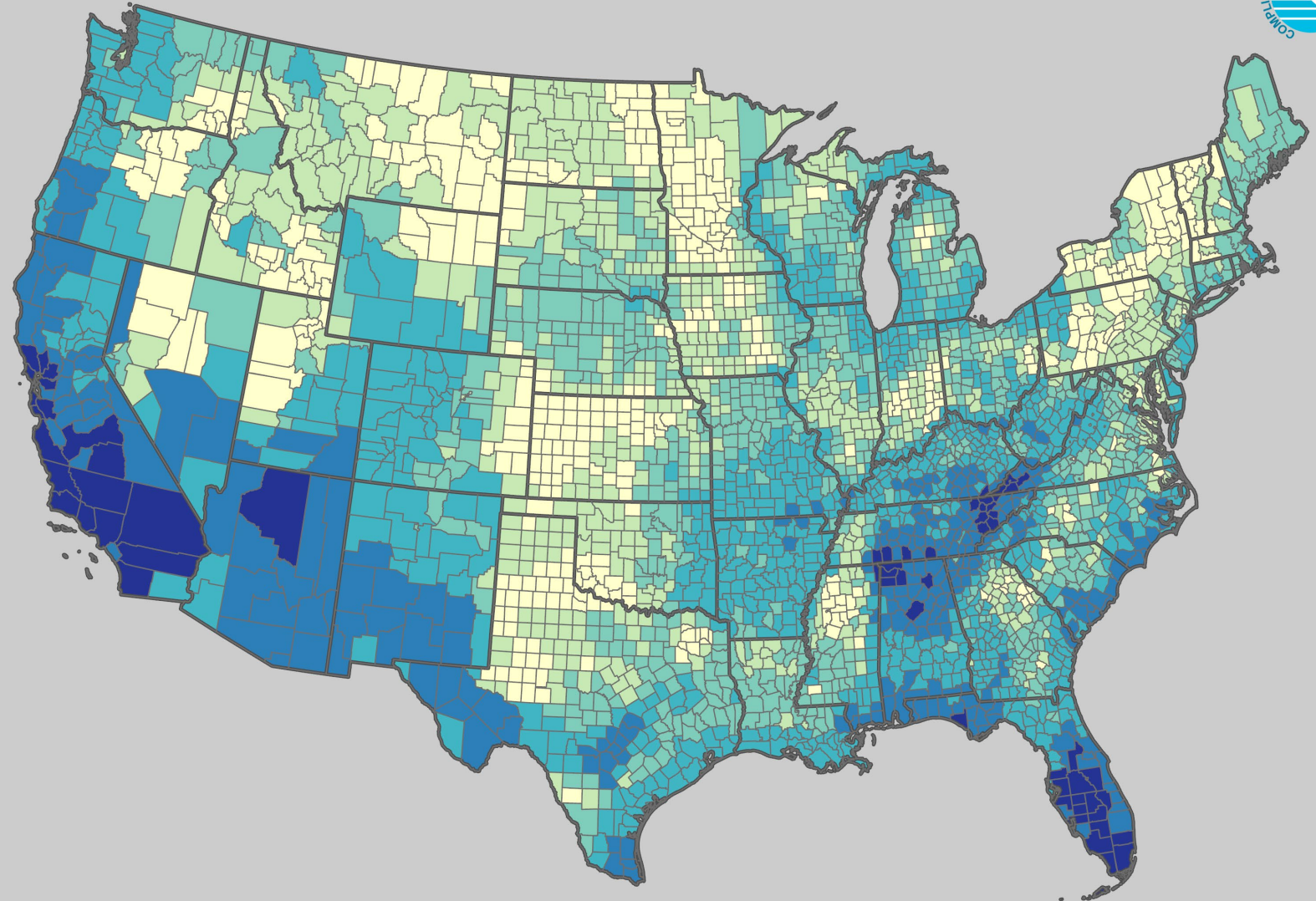
NMFS

# A NATIONAL SITUATION WITH LOCAL IMPLICATIONS

Every county in the US has at least one ESA-listed species

Darker the color the greater density of species

## USFWS/NMFS SPECIES RANGE DENSITY



# SOME THREATENED AND ENDANGERED SPECIES IN NY

12 Threatened  
15 Endangered



# PROTECTING ENDANGERED SPECIES – IT'S MOSTLY CONSTRUCTION PROJECTS, RIGHT?



**NO...**

**HOW DOES MY WEED CONTROL PROGRAM  
AFFECT ENDANGERED SPECIES?**

**AND HOW DO ENDANGERED SPECIES  
INFLUENCE MY WEED CONTROL PROGRAM?**

## **BACKGROUND ON ENDANGERED SPECIES ACT (ESA)**

- Federal law was designed to protect threatened and endangered (T & E) species from becoming extinct
- Signed into law in 1973
- All Federal agencies must ensure that any of their actions do not jeopardize threatened and endangered species or adversely modify their designated critical habitat

- **Jeopardy** (to a species)
- **Adverse Modification** (to habitat)
- On field risk because T & E species is found on the field
- Offsite movement due to drift or volatility
- Runoff from soil surface due to water and soil erosion





## **BACKGROUND ON ENDANGERED SPECIES ACT (ESA)**

- Every time a pesticide is registered, a label is changed, or a pesticide is reregistered by the EPA, a federal regulation must be written to authorize that registration action
- **Therefore, the ESA impacts must be considered**
- However, the EPA has not been actively assessing impacts to T&E species on pesticide registrations
- Courts have indicated that non-compliance will not be tolerated (EPA is in “**ongoing legal vulnerability**”)

**WHO DOES THE ASSESSMENTS?**

# THE PLAYERS

- Environmental Protection Agency (EPA)
- Office of Pesticide Programs (OPP)
  - Works with the Services (next slide) to ensure that pesticide registrations do not jeopardize T & E species or adversely modify their designated critical habitat
  - Implement measures on pesticide labels to protect T & E species
  - Modifies labels and/or terms of registration to avoid impacts to T & E species or its habitat



# THE PLAYERS

- Fish and Wildlife Service (FWS)
- Department of Interior
  - Listing of T & E terrestrial species, designating critical habitat, developing protective regulations for T & E species, developing and implementing recovery plans, monitoring and evaluating the status of listed species, etc...
- National Marine Fisheries Service (NMFS)
- Department of Commerce
  - Listing of T & E marine species, developing and implementing recovery plans, developing cooperative agreements and providing grants to states for species observation, authorizing research, etc...



# ESA ASSESSMENTS

- *EPA conducts a Biological Evaluation*
  - No Effect
  - Not Likely to Adversely Affect – additional work may be needed
  - Likely to Adversely Affect– **these species and habitats will be further assessed by the Services (FWS and NMFS)**
    - FWS and NMFS then issue subsequent *Biological Opinions (population level impacts)* about jeopardy or adverse modification
    - Process can be slow because of the limited manpower available for assessment

# **THE EPA'S WORKPLAN AND DRAFT HERBICIDE STRATEGY**

# The EPA and the Endangered Species Act (ESA)

- In 2021, prompted by the escalating legal challenges of fulfilling its ESA obligations for pesticide decisions, EPA began developing a comprehensive, long-term approach to meeting those requirements
- The outcome is a workplan, *Balancing Wildlife Protection and Responsible Pesticide Use*, which reflects on EPA's experiences, assesses its future ESA workload, and describes administrative and other improvements that EPA will pursue or consider pursuing
- The workplan reflects the Agency's most comprehensive thinking to date on how to create a sustainable ESA-FIFRA program

# The EPA and the Endangered Species Act (ESA)

- The **Herbicide Strategy** is one part of the larger workplan
- Eight documents, total **~ 1,000 pages**
- Protections for more than 900 species and designated critical habitat at risk from **conventional agricultural pesticides**
- At a later time, EPA will address aquatics, non-crop land uses, etc.



# The EPA and the Endangered Species Act (ESA)

- The **Draft Herbicide Strategy** is an attempt by the EPA to speed up the review process
- 1) Identify plant species (and animals) likely to be affected by herbicide use,
- 2) Identify mitigation strategies to reduce drift and runoff/erosion,
- 3) Determine where mitigation measures (**method to meet ESA obligations**) would be applied
- Where mitigation measures are required across the **ENTIRE US**, the measures would be listed on the product label.
- In instances where **only PART of the US is required to implement mitigation measures**, the measures for locations affected would be available through the **EPA's Bulletins Live!** **Two** system (**Pesticide Use Limitation Areas (PULAs)**) ...THE LABEL WILL DIRECT YOU HERE



## ■ **Examples of Some Mitigation Practices**

- Farming west of I35 and east of Rte. 395
- Drift reducing nozzles
- Hooded sprayers
- Windbreaks and vegetative buffer strips
- Cover cropping
- Field slope <math><2\%</math>
- No-till, reduced till





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## Endangered Species

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[Assessing Pesticides Under the Endangered Species Act](#)

[Endangered Species: Information For Pesticides Users](#)

[Litigation on Endangered Species and Pesticides](#)

**[Bulletins Live!](#)**

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# Endangered Species Protection Bulletins

Endangered Species Protection Bulletins are a part of EPA's Endangered Species Protection Program. Bulletins set forth geographically specific pesticide use limitations for the protection of threatened and endangered (listed) species and their designated critical habitat.

- [Obtain Bulletins using EPA's Bulletins Live! Two application.](#)
- [Read the tutorial Bulletins Live! Two.](#)
- [Go to the quick start guide.](#)
- [View the November 2023 webinar for Bulletins Live! Two.](#)
- [Learn How to locate the EPA Registration number to search for product in Bulletins Live! Two.](#)

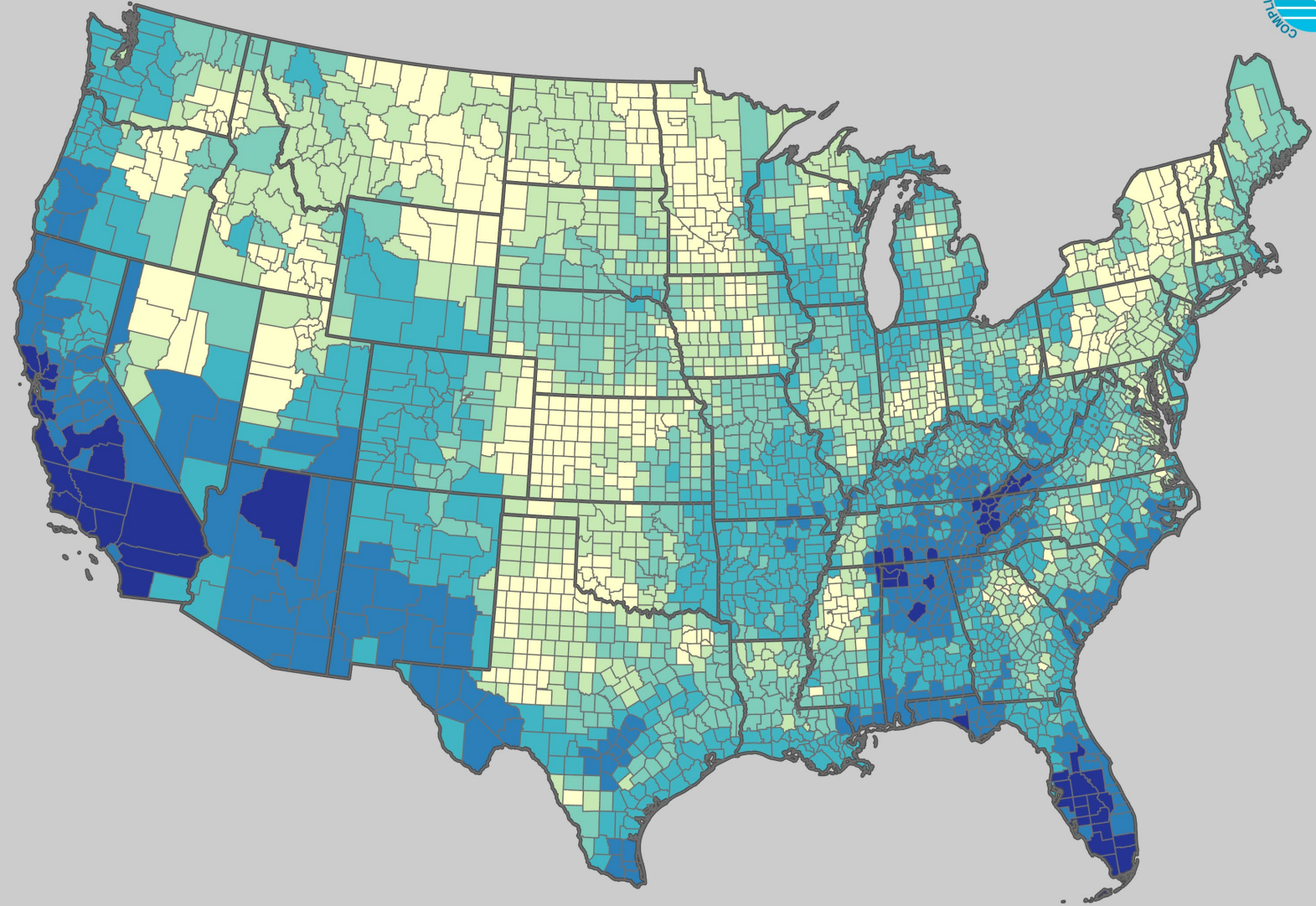
If your pesticide label directs you to this website, you are required to follow the pesticide use limitation(s) found on your label and in the Bulletins Live! Two system for your intended application area, pesticide product, and application month. You may not see any geographically specific use limitations for the product you are applying even if your label directed you to this

# A NATIONAL SITUATION WITH LOCAL IMPLICATIONS

Every county in the US has at least one ESA-listed species

Darker the color the greater density of species

## USFWS/NMFS SPECIES RANGE DENSITY



Low

0 250 500 1,000 Kilometers

High

# OVERALL IMPACT OF PESTICIDE USE LIMITATION AREA

<b>CROP/Use Data Layer</b>	<b>Acres in PULA</b>	<b>% US Total</b>
Corn	88,484,977	44%
Alfalfa and Grasses	152,589,205	30%
Soybeans	84,149,362	43%
Wheat	20,766,784	18%
Vegetables, Ground Fruit	6,678,385	30%

*Proposed mitigation measures to be implemented by  
growers and identified to applicators*

**WHEN DOES THIS START TO AFFECT ME?**

# When will we see label changes?

- Rodenticide Pilot to protect Endangered Species
  - *Released November 2022*
- Herbicide Strategy
  - *Final version should be released May 2024*
- Insecticide Strategy
  - *Final version should be released January 2025*
- Fungicide Strategy
  - *Final version should be released late 2025 or 2026*
- It may take 15 years to change all pesticide labels

# DESPITE THIS, THERE IS NO NEED TO PANIC

- To date, no herbicide has ever been fully removed from the market based solely on endangered species risks, and that remains an unlikely scenario in the future, as well.
- Getting pesticide registrations into compliance will take time, and may require label changes, but it will not end pesticide use in agriculture.
- Only 12 out of >300 herbicides have a mitigation number assigned – **again, it could take 15 years to do this for all herbicides**



Northern wild monkshood  
Ohio DNR

Northeastern Iowa, Buttercup Family



# 2022 CROP ROBOTICS LANDSCAPE



## AUTONOMOUS MOVEMENT      CROP MANAGEMENT      HARVEST

<b>ROW CROP</b>  <b>SPECIALTY FIELD</b>  <b>ORCHARD-VINEYARD</b>  <b>INDOOR</b>	<b>Navigation/Autonomy</b> AgriRobot COGNITIVE PILOT Trimble SABANTO CHCNAV FJDynamics ASI STEYR Cerea GEX Solutions BV TOPCON Ag Leader BLUE WHITE ROBOTICS Agtonomy GOtrack BRAUNTY Rosao Tech SingularXYZ	<b>Small Tractor/Platform</b> SAUNIBOT Kubota DONKEY AI.LAND The FarmLand Tractor™ ELATEC Z STRATOR farm-ng SABI AGRI Korechi GOTTENMILCH FUTURE ACRES MONARCH exobotic AGREENCULTURE BURRO VENERGY ANTAGI XAG EXACT ROBOTICS digital workbench Indoor Platform Seasony	<b>Large Tractor</b> NEXT JOHN DEERE COMBUSTION POWER AGXCEED RAVEN AGROINTELLI autoagri BEAR FLAG IOX AMCS TARRA SITA oxin VITIBOT	<b>Scouting</b> EARTHSENSE ECROBOTS MEROPY SOLINFTEC AR Small sentera CENSYS AgEagle QUANTUM dragonFLY DELAIR ATMOS wingtra BERBOTS EVENT microdrones Robotic solutions placed in other task/product categories on this landscape may have scouting capabilities in addition to their primary function.	<b>Preparation &amp; Planting</b> FENDT HORSCH ROWBOT TERRACI FAR	<b>Drone Application</b> ZAVISION AKRAY precision.ai GUARDIAN THANDS HERANIC ROBOTICS 天途 TTA FLATION JOYANCE M-DRONE PYKA* LAHAX DRONE VOIS Drone4 Agro MARUT TIDAN hylilo Fly Dragon X-brano leadingEdge BROUAV ASIA hse AERO41 Garuda aerospace	<b>Application</b> CASE IH Carbon Bee VRESSON BOSCH AUGMENTA DAT DAMMANN Bilberry AMAZONE BLUE RIVER Plantium Autonomous Pivot Greeneye ecorobotix VERDANT ROBOTICS SAGA ROBOTICS TRIC XMACHINES YANMAR Kilter GUSS ackle jacto MIDNIGHT ROBOTICS INESCTEC FARM GREEN DARTER	<b>Weeding &amp; Thinning</b> rootwave HONGSKILDE HayBeeSee Steketee FARMING REVOLUTION NUCROP FARMDRUID STOUT CARRE Dahlia Robotics odthot CARBON ROBOTICS FARMHAND F POLSEN ENGINEERING nqio FarmWise WEEDBOT EKOBOT garford nexus // Feldklasse TENGOFIELD AgriBotX AIDEN Jullimanna PIXELFARMINGROBOTICS	<b>Specialty Field Harvesting</b> WOODMACHINES LAPALME AGTECH COM HARVEST DRON KOPPERT MACHINES advanced.farm MiFood Robot AVL Fildwerk ADEE AUTOMATION INC.	<b>Orchard-Vineyard Weeding &amp; Pruning</b> VITROVER Walle-48 AIGRO INSIGHTTRAC BEAGLE ELEOS LADYBUG ROBOTICS aigritec	<b>Orchard-Vineyard Harvesting</b> TEVEL OMC Ride Robotics RoboticsPlus UBot FINE FIELD	<b>Indoor Scouting</b> GEARBOX ecotillon FUNU CORVUS HortiKey	<b>Indoor Drone Protection</b> DATS	<b>Indoor Application</b> polybee AIS Hubbedt.com Microthon FTEK BERG HADA arugga	<b>Indoor Deleafing</b> POLARIS SAIA COOCTIVA Lenzel	<b>Indoor Harvesting</b> AUREA Tortuga AgTech TOLK GREENERS rana OUTBACK ROBOTICS DENSO AGROBOT certhon CRUX KMT NELPEK Dogtooth ORGANIFARMS MYCONICS ((xihelm))
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Companies appear only once, though some may offer multiple or multi-use robots; they are placed according to primary function. Some segments span multiple crop systems as solutions may be applicable across crops. Logo positions are not necessarily indicative of crop system applicability.

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Home → Ted

# Ted

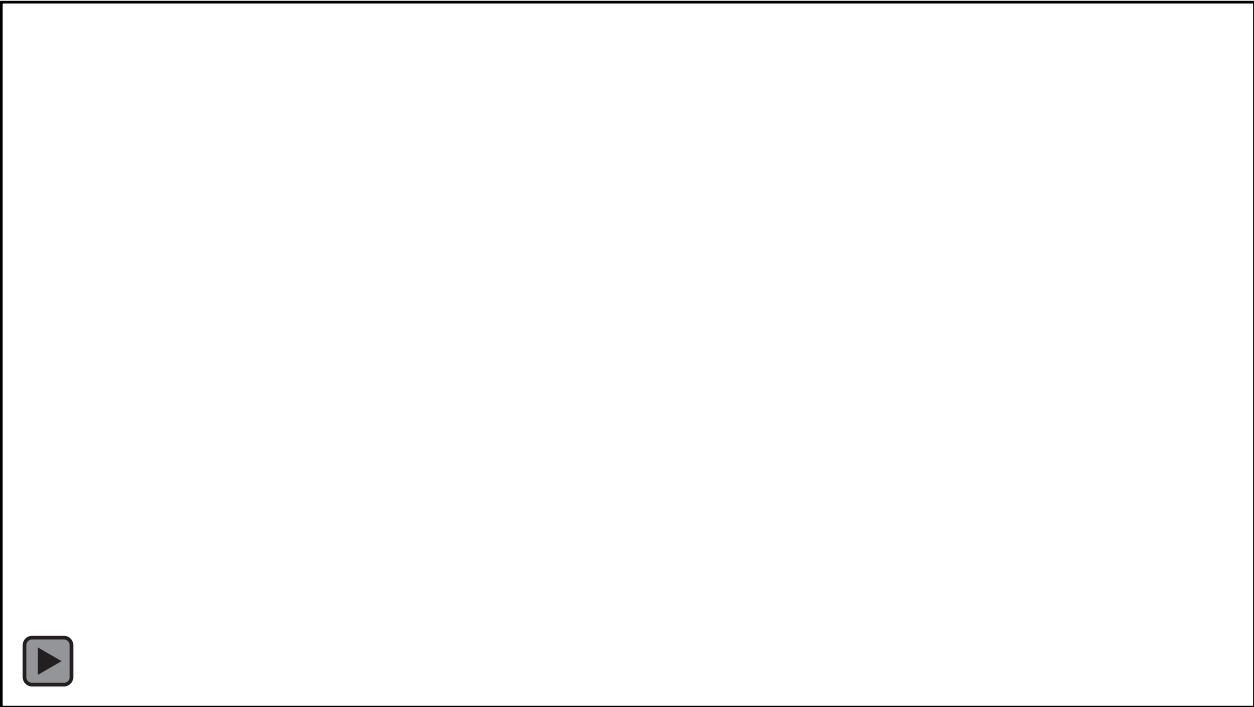
Discover the first robot dedicated to vineyards, an alternative to the use of herbicides that respects your soils and improves your working conditions.

INTERESTED IN TED →



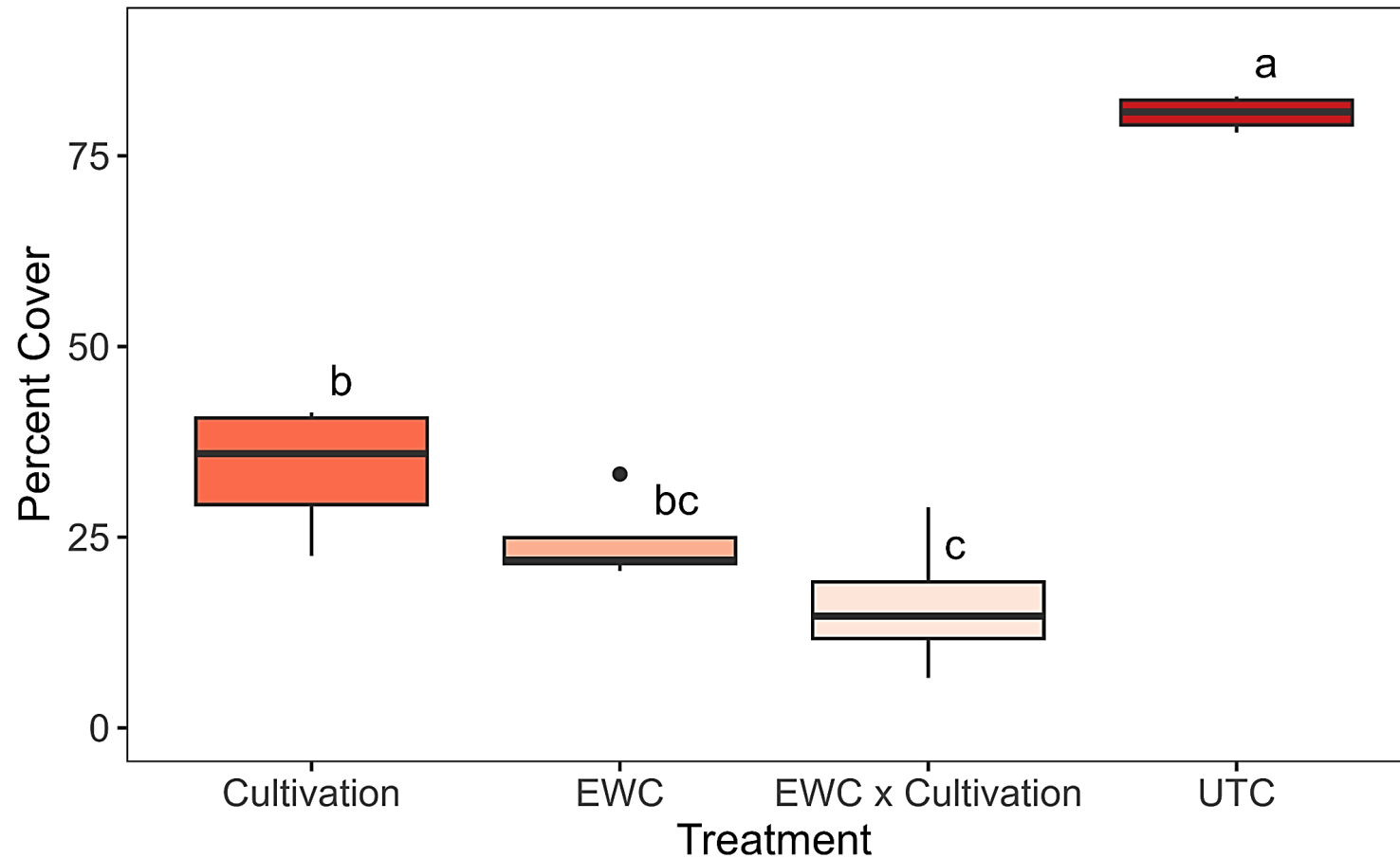
**Electrical Weeding in  
Perennial Crops  
using a Zasso  
Electroherb Weeder**

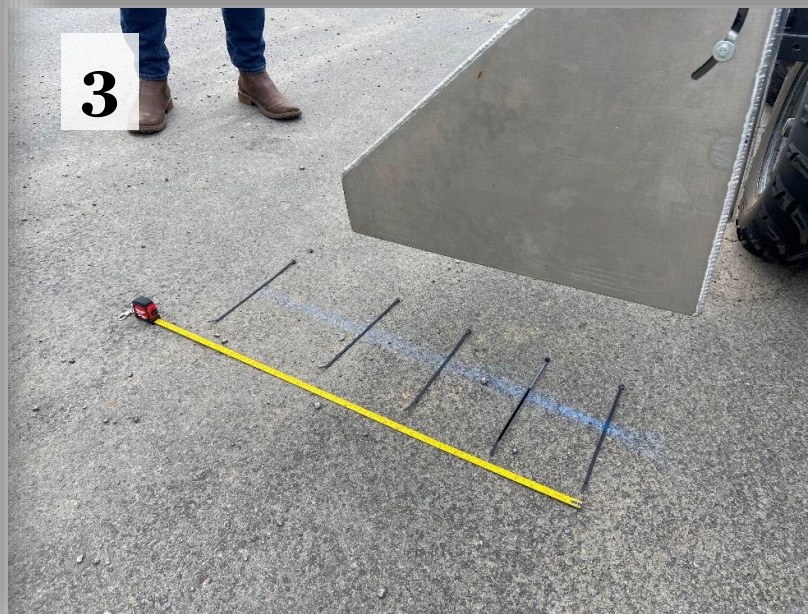




# Electrical Weeding Reduced Weed Cover

Percent Weed Cover 23 DAT

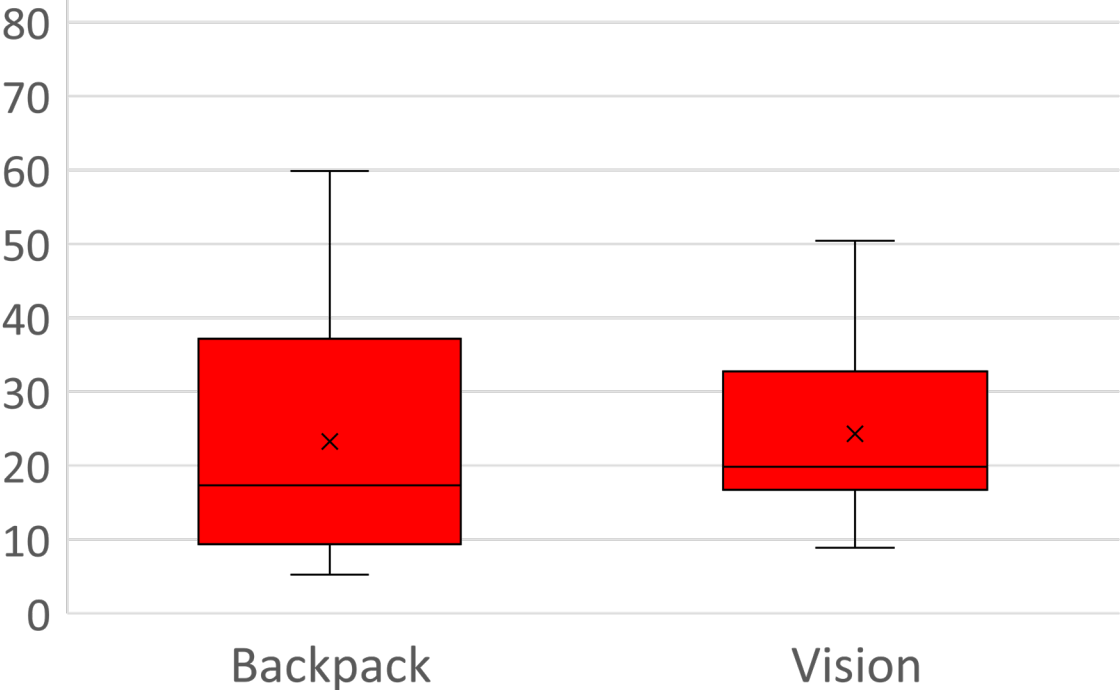
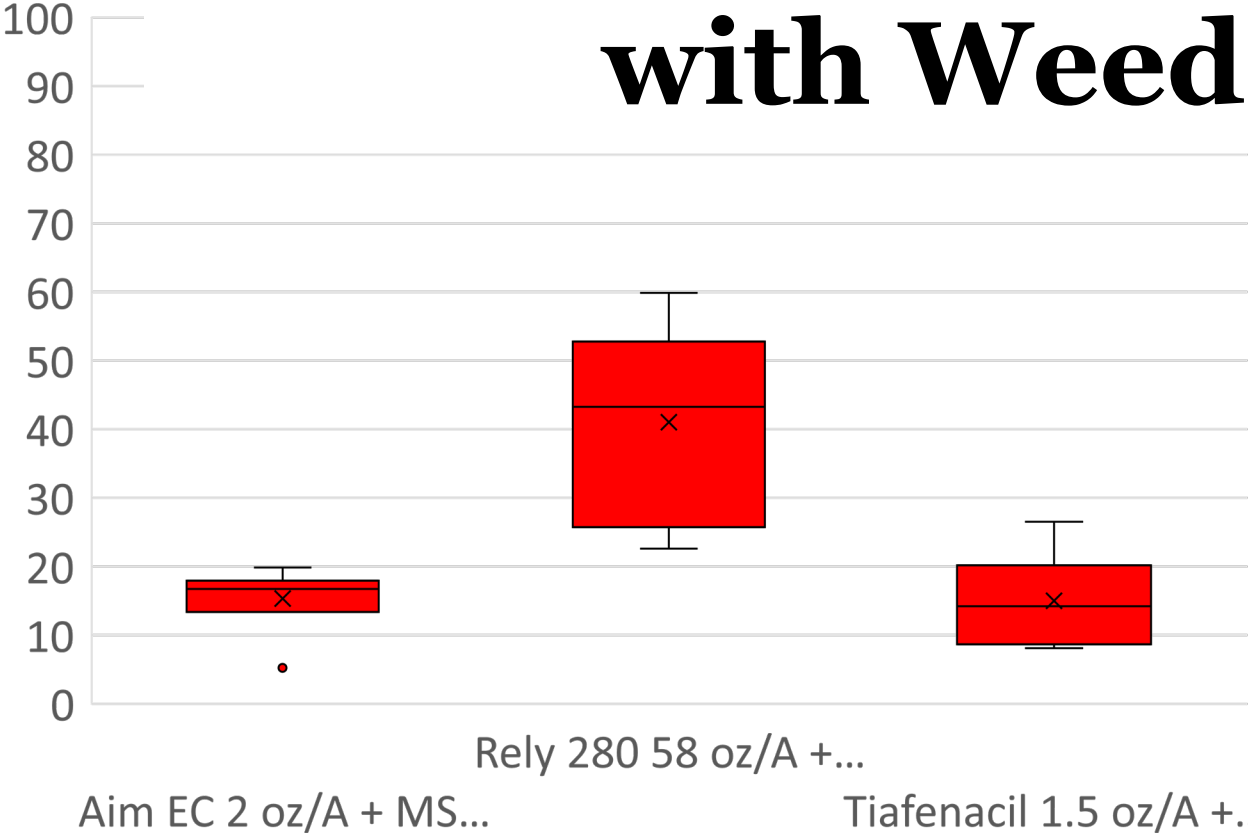




*Interested in this system in perennial crops because of spatial separation and speed*

Sucker Biomass as Percent of Untreated Check (at 28 DAT) WAS Affected by HERBICIDE but WAS NOT Affected by APPLICATION TECHNOLOGY

# Herbicide use was reduced >40% with Weed-It system





# HOW CAN WE DE-RISK THE PROCESS?

**Rutgers**

**Oregon State**

**2024 USDA-SCRI SRS**



**UC Davis**

**Arkansas**

**Describe current landscape of novel weed control technology in perennial crops**

**Identify grower interest and needs AND understand the drivers and barriers to grower adoption**

**Prepare full SCRI proposal for 2026 submission to acquire systems, evaluate performance and sustainability in different US regions**



The ESA Herbicide Strategy is still evolving and this is the best time to work collaboratively

The EPA and the services have been willing to listen and adapt, the WSSA is working with them

Cornell and NYS IPM preparing a webinar in March/April with WSSA ESA lead, Bill Chism

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