

2024 Row Crop Shortcourse

Weed Control
John Byrd





I. PERSONAL BACKGROUND

Biographical Sketch

INTERNSHIP IN AGRICULTURAL PEST MANAGEMENT

My name is Angus Catchot. I was born in Biloxi, MS and lived there until I was in the

Department of Entomology and Plant Pathology

Department of Plant and Soil Science

Mississippi State University

My father Angus Catchot. We had a small hog farm where we raised about 600 hogs annually. In addition to

the hog farm we had about 200 acres of corn and soybeans. We managed to hold on to the farm

until I was in the eighth grade. My father then decided to go into the electrical business. I

worked with him part-time as an electrician from then on. When I graduated high school I

attended Gulf Coast Community College on a football scholarship and I received a certificate of

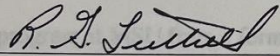
completion in Industrial Electricity. Soon after graduation of junior college I married my

Angus Catchot
B.S. Agricultural Pest Management

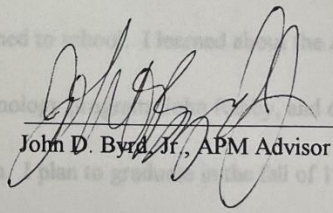
Graduation Date: December 1995

wife through school. My wife received her Bachelor Of Social Work degree from the University

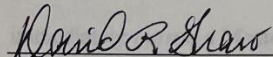
Approved:



R. G. Luttrell, APM Advisor



John D. Byrd, Jr., APM Advisor



David R. Shaw

APM Steering Committee

Dr. Byrd

10/17

Objectives:

- 1) Evaluate the effectiveness of the present computer herbicide recommendations program (HERB) recommending weed control programs at various locations in Mississippi.
- 2) Use the SOYHERB, a program which allows user modification of HERB, to adjust recommendations and efficiency factors.
- 3) Determine validity of revised recommendations generated by HERB with respect to

Refinement of Computer Recommendations for Weed

Control in Mississippi

... evaluation herbicide programs and developing understanding for Mississippi soybean production. This is due to a variety of factors, including the array of herbicides and mixtures of herbicides available, the need to assess the efficacy of these herbicides and combinations, and the work associated with these various herbicide treatments. Profoundly are associated with production efficiency; however, heightened emphasis has been placed on the environmental impact of pesticide use.

Alfred Rankins, Jr.

Graduate Research Assistant

Department of Plant and Soil Sciences

Mississippi State University

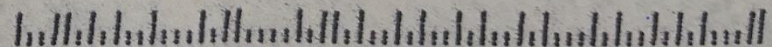
Computer-driven decision-making systems have been developed which may improve weed control efficiency information, such as SOYHERB from Michigan State University. However, these weed expert systems have been developed in the southern region which integrate weed production, weather, water flow, crop yield, control cost, and herbicide efficacy. The most popular of these are HERB, from North Carolina State University (Cobb, 1982, and 1983), and the University of Arkansas (Giblin et al., 1989). The science of weed control

6/16/04

To whom it may concern,

Does the U.S. government grow marijuana on your campus?
If so, Can you please mail me information on this?

Mississippi State University
Mississippi State, Ms.
39762







Tractor Wars Behind the Scenes: Producer Interview

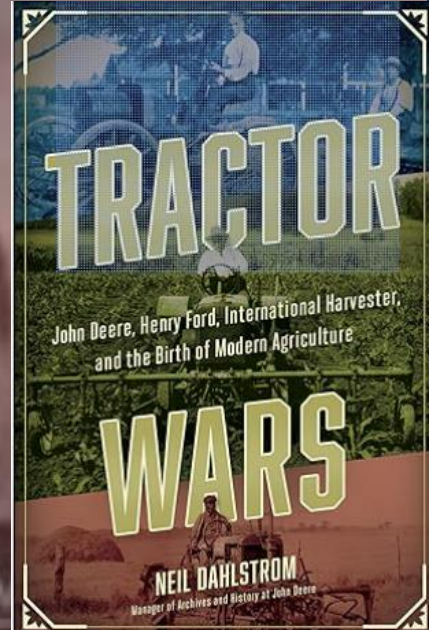


Watch later



Share

TRACTOR WARS



0:30 / 7:41



YouTube





1920 is the first time
that more people live in
the city than on the farm.



Panthers win Stanley Cup Julian Assange Israel-Hama:

Hawaii settles lawsuit from youths over climate change. Here's what to know about the historic deal



1 of 3 | FILE - A beachgoer walks down Waikiki Beach, Thursday, Oct. 15, 2020, in Honolulu. About two years after 13 children and teen Read More

BY JENNIFER SINCO KELLEHER
9:11 PM CDT, June 21, 2024



Panthers win Stanley Cup Julian Assange Israel-Hama:

HONOLULU (AP) — About two years after 13 children and teens sued Hawaii over the threat posed by [climate change](#), both sides reached [a settlement](#) that includes an ambitious requirement to decarbonize the state's transportation system over the next 21 years.

It's another example of a younger generation channeling their frustration with the government's response to the climate crisis into a legal battle.

Navahine v. Hawaii Department of Transportation is the world's first youth-led constitutional climate case addressing climate pollution from the transportation sector, according to statements from both sides.

[The lawsuit](#) said one plaintiff, a 14-year-old Native Hawaiian, was from a family that farmed taro for more than 10 generations. However, extreme droughts and heavy rains caused by climate change have reduced crop yields and threatened her ability to continue the cultural practice.



Panthers win Stanley Cup Julian Assange Israel-Hama:

The complaint said rising sea levels also threaten to put their lands underwater.

Another plaintiff lost her home twice, due to climate change-induced events, according to Our Children's Trust, a public interest law firm that is representing the plaintiffs: flooding from a hurricane in 2018 and last year's [deadly wildfire that ravaged Lahaina](#), on the island of Maui.

Here are some things to know about the historic settlement:

What happened with the lawsuit this week?

Circuit Court Judge of the First Circuit John M. Tonaki signed a settlement agreement Thursday between the plaintiffs, who are also represented by another law firm, Earthjustice, and the state of Hawaii and its Department of Transportation.

The [lawsuit argued](#) that Hawaii was violating the state constitution by operating a transportation system that harms the climate and infringes upon

't to a clean and healthy environment. It accused the Department of Transportation of consistently prioritizing building highways over other



CULTURE, ENVIRONMENT, NATURE

Ecologies of love: Writer Heather Swan on new book, 'Where the Grass Still Sings'

Insects are hard, Swan tells 'To The Best Of Our Knowledge,' but worth getting to know

BY ANNE STRAINCHAMPS • JULY 26, 2024



Heather Swan beekeeping. Shannon Henry Kleiber/TTBOOK

When Heather Swan was a little girl, she spent



To The Best Of Our ...
WPR News

ALL
STREAMS

NPR interview

July 28, 2024



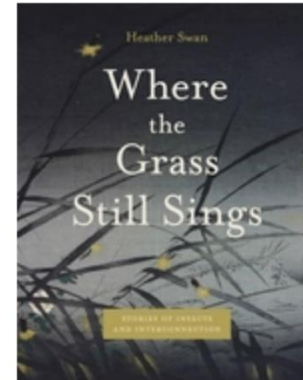
JSTOR

Register

Log in

Workspace

Search journals, books, images, and primary s



Where the Grass Still Sings: Stories of Insects and Interconnection

Heather Swan

Series: [Animalibus: Of Animals and Cultures](#)

Copyright Date: 2024

Published by: [Penn State University Press](#)

<https://doi.org/10.5325/jj.11102863>

<https://www.jstor.org/stable/10.5325/jj.11102863>

[Search for reviews of this book](#)



Heather Swan

Senior Lecturer

hsrosenthal@wisc.edu

6115 Helen C. White

Interests

Ecocriticism, environmental humanities, environmental justice, narratives of resilience, interdisciplinary collaboration, nonfiction writing, poetry, and insects, especially honeybees

Selected Publications:

- "Dead Owls and Blue Bottle Flies" *The Learned Pig*
- "The Sorrow of Bees" *Aeon*
- "A Painful Lesson in Zen and the Art of Honeybee Reverence" *Aeon*
- "Can Agriculture Save Pollinators?" *Belt Magazine*
- "Slow Seeing" *Minding Nature* 11.3
- "Millions of Insects and a Curator at Work" *Edge Effects*

HS: I woke up one morning to the sound of an airplane coming really close to the homes around us — flying out and turning around and coming back again.

9/11 was still in my mind and I thought, is this someone suicidal? Do they want to hurt someone? And I thought, weirdly, "I need to get out of the house!" So I grabbed my daughter, who was quite small at the time, and ran outside — just at the moment when the plane was coming down right over the treetops and we were sprayed.

I could feel it all over my body, on my skin and in my eyes, and I ran back inside and washed us off. But within two weeks, my daughter had a lymph gland the size of a mango on her body, and she was very sick.

And luckily, she healed from that, but my father died from Parkinson's and I just read a study — it came out in March — naming more pesticides that contribute to Parkinson's

F disease. So that was a moment where I thought, "I have to speak up," because there are so many beautiful, vulnerable species out there — including us — being damaged by the way we destroy and control things.

AS: You say at the beginning of this book that one of the animating questions you asked yourself was, is it possible to still have hope for this planet? And then you tell a story about one of your students, who said in class one day that she doesn't want to have children because of climate change.

HS: We were reading a poem and she said, "This poem gives me hope." I said "Oh, tell me more about that." And she said, "Well, most of the time I don't feel any hope at all, and I don't want to bring a child into this world. But that poem makes me feel like maybe I could."

And I said, "Oh my goodness. How many other people in the room feel that way?" And all of them raised their hands. I'm not interested in pushing people to have children, but in that moment, I realized that they were not seeing a

Suicide/terrorist (9/11)

Pesticide drift

Pesticides linked to Parkinson's disease

Vulnerable species

Climate change



To The Best Of Our ...
WPR News





^
ALL
STREAMS



To The Best Of Our ...
WPR News

^
ALL
STREAMS

A pesticide and iPSC dopaminergic neuron screen identifies and classifies Parkinson-relevant pesticides

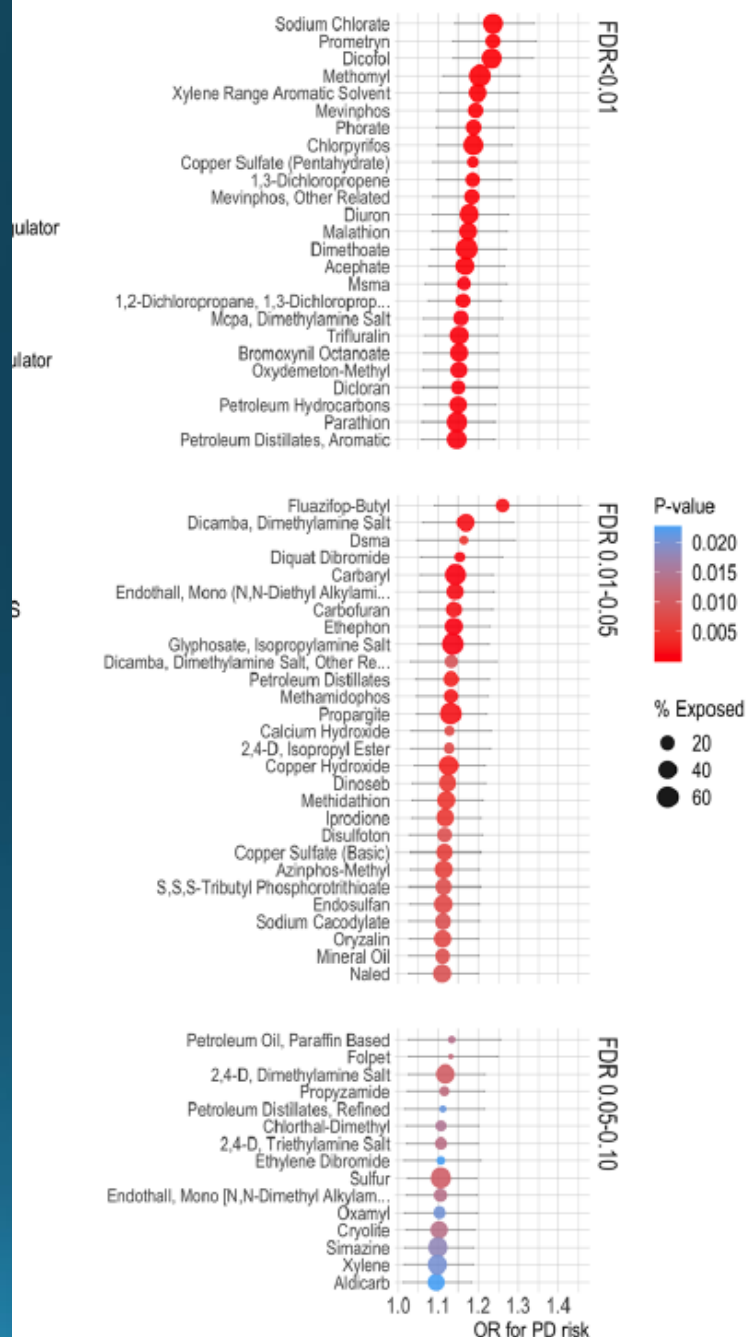
Kimberly C. Paul , Richard C. Krolewski, Edinson Lucumi Moreno, Jack Blank, Kristina M. Holton, Tim Ahfeldt, Melissa Furlong, Yu Yu, Myles Cockburn, Laura K. Thompson, Alexander Kreymerman, Elisabeth M. Ricci-Blair, Yu Jun Li, Heer B. Patel, Richard T. Lee, Jeff Bronstein, Lee L. Rubin , Vikram Khurana  & Beate Ritz 

Nature Communications **14**, Article number: 2803 (2023) | [Cite this article](#)

16k Ac Regulatory and toxicity information for the implicated pesticides is shown in Supplementary

Data 4. Eighteen of the 25 most strongly PD-associated pesticides (FDR ≤ 0.01) are actively registered with the US EPA (43 of 68 pesticides at FDR < 0.10 , Fig. [1d](#)), while only 2 are allowed for use in the EU at time of publication. Of these 25 pesticides, 21 are considered 'bad actors' by the Pesticide Action Network (PAN)¹⁹ as 9 have been deemed carcinogens (7 more as possible carcinogens), 6 developmental or reproductive toxins, 10 cholinesterase inhibitors, 3 known groundwater contaminants (13 more as possible groundwater contaminants), and 8 have high acute toxicity. In fact, of the 53 pesticides with an FDR ≤ 0.05 , 43 have been designated 'bad actors'.

b PWAS: PD and Pesticide Meta Associations

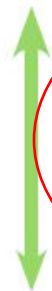


Pesticides and Climate Change: A Vicious Cycle

Winter 2022–2023



Executive Summary



Climate change is one of the greatest challenges facing humanity today. Scientific evidence indicates that pesticides contribute significantly to greenhouse gas emissions, making our agricultural systems more vulnerable to the effects of climate change than the reduction of synthetic pesticide use has been omitted from climate change solutions, and synthetic pesticide use is even presented as a climate change mitigation strategy by industrial agriculture interests.

Pesticides contribute to climate change throughout their lifecycle via manufacturing, packaging, transportation, application, and even through environmental degradation and disposal. Importantly, 99% of all synthetic chemicals — including pesticides — are derived from fossil fuels, and several oil and gas companies play major roles in developing pesticide ingredients.¹ Other chemical inputs in agriculture, such as nitrogen fertilizer, have

not received the same attention. It has been shown that the production of one kilogram of nitrogen fertilizer requires, on average, one kilogram of nitrogen fertilizer.^{2,3} Like nitrogen fertilizers, pesticides can also release greenhouse gas emissions after their application, with fumigant pesticides shown to increase nitrous oxide production in soils seven to

Climate change is one of the greatest challenges facing humanity today. Scientific evidence indicates that pesticides contribute significantly to greenhouse gas emissions while also making our agricultural systems more vulnerable to the effects of climate change. However, the reduction of synthetic pesticide use has been omitted from climate change solutions, and synthetic pesticide use is even presented as a climate change mitigation strategy by industrial agriculture interests.

Pesticide Update

EPA's Office of Chemical Safety and Pollution Prevention

10/02/2024

EPA Finalizes Rule to Protect Farmworkers, Families and Communities from Pesticide Exposures

Today, Oct. 2, the U.S. Environmental Protection Agency is announcing a final rule to restore the pesticide Application Exclusion Zone (AEZ) requirements under the 2015 Agricultural Worker Protection Standard (WPS). The AEZ is an area surrounding outdoor pesticide application equipment where people are prohibited while pesticides are applied. This rule finalizes the agency's [2023 proposed rule](#) without change and advances the Biden-Harris Administration's commitment to environmental justice, protecting farmworkers, pesticide handlers, their families and agricultural communities. It reinstates AEZ protections, extends protections for neighboring communities, makes requirements easier to understand, and provides flexibilities for family farms without compromising protections.

"Farmworkers help to provide the food we feed our families every day and it's EPA's job to keep them safe from pesticides," **said Assistant Administrator for the Office of Chemical Safety and Pollution Prevention Michal Freedhoff.** "No one should be at risk from pesticide related illness because of their job or where they live. Today's

Application Exclusion Zone provisions

Through its review, EPA has determined that the provisions in the 2020 AEZ Rule that weakened protections for farmworkers and nearby communities from pesticide exposure should be rescinded to protect the health of farmworkers, their families, and nearby communities.

Proposed Changes and Flexibilities

With today's action, the Agency is proposing to reinstate several provisions from the 2015 WPS to strengthen protections for farmworkers and bystanders including:

- Applying the AEZ
 - beyond an establishment's boundaries; and
 - when individuals are within easements (such as easement for utility workers to access telephone lines).
- Establishing AEZ distances for ground-based spray applications of
 - 25 feet for medium or larger sprays when sprayed from a height greater than 12 inches from the soil surface or planting medium; and
 - 100 feet for fine sprays.

Additionally, EPA is proposing to retain two provisions in the 2020 AEZ Rule that the Agency believes are consistent with the intent of the 2015 WPS AEZ requirements and are supported by information available to the Agency to provide more clarity and flexibility for farming families. EPA proposes to retain:

- a clarification that suspended pesticide applications can resume after people leave the AEZ; and,
- an "immediate family exemption" that allows only farm owners and the farm owners' immediate family to remain inside enclosed structures or homes while pesticide applications are made, providing family members flexibility to decide whether to stay on-site during pesticide applications, rather than compelling them to leave even when they feel safe remaining in their own homes.

The proposed changes are a critical part of EPA's efforts to protect the health of farmworkers and support the Agency's priority to

EPA/FWS/NOAA/USDA Endangered Species Hybrid Meeting



- KS Kristina Sin...
- BA Anderson, ...
- AB Blankinship...
- MR Ranville, Mi...
- CD Douglass, ...
- GP Paluch, Gre...
- SC Stanley Cul...
- ES Schilling, Er...
- KH Kevin S. He...
- LB Lori Ann B...
- LL Lauren Lur...
- BF Bill Fra...
- CM Chip Murra...
- PB Kelly Bills, P...
- LS Layla Sober...
- CM Myers, Clay...
- LP Paul, Leslie ...
- ... View all



Herbicide Strategy
to Reduce Exposure of Federally Listed Endangered and Threatened Species and
Designated Critical Habitats
from the Use of Conventional Agricultural Herbicides

August 2024

Office of Pesticide Programs
Office of Chemical Safety and Pollution Prevention
U.S. Environmental Protection Agency
Washington, DC



**Herbicide Strategy to Reduce
Exposure of Federally Listed
Endangered and Threatened
Species and Designated
Critical Habitats from the Use of
Conventional Agricultural
Herbicides**

August 2024

**Action Plan to Reduce Exposure of Vulnerable
Federally Listed Endangered and Threatened Species
from the Use of Conventional Pesticides**



September 2024

Office of Pesticide Programs
Office of Chemical Safety and Pollution Prevention
U.S. Environmental Protection Agency
Washington, DC

Action Plan to Reduce Exposure Of Vulnerable Federally Listed Endangered and Threatened Species from the Use of Conventional Pesticides

September 2024

VSAP = Vulnerable Species Action Plan

Table 1. Species Currently Included in the VSAP

Species	Taxon
Attwater's prairie chicken	Bird
Buena Vista Lake Ornate Shrew	Mammal
Avon Park harebells*	Plant
Carter's mustard*	Plant
Florida ziziphus*	Plant
Garrett's mint*	Plant
Highlands scrub hypericum*	Plant
Lewton's polygala*	Plant
Sandlace*	Plant
Scrub blazingstar*	Plant
Scrub mint*	Plant
Short leaved rosemary*	Plant
Snakeroot*	Plant
Wireweed*	Plant
Leedy's roseroot	Plant
Madison cave isopod	Aquatic Invertebrate
Mead's milkweed	Plant
Ozark Cavefish	Fish
Palmate-bracted bird's beak	Plant
Poweshiek skipperling	Terrestrial Invertebrate
Rusty patched bumble bee	Terrestrial Invertebrate
Scaleshell mussel	Aquatic Invertebrate
Spring creek bladderpod	Plant
White Bluffs Bladderpod	Plant
Whorled Sunflower	Plant
Winged Mapleleaf	Aquatic Invertebrate
Wyoming toad	Amphibian

*Located on the Lake Wales Ridge in Florida

TX
CA
FL



FL
MN, SD, NY
MD, VA
MN, SD, NY
AR, MO, OK
CA
MI
MN, WI, IL, WV
AR, NE, OK, SD
TN
WA
AR, GA, MS, TN
AR, OK
WY

Whorled sunflower

FWS describes the Whorled sunflower as having a low resiliency, a low redundancy, and a low representation indicating that the species has low population numbers that are in decline (USFWS, 2023c). As described in the 2023 FWS status of the species assessment, the range is reduced to only eight natural populations, and extant populations vary in size, but tend to be relatively small and isolated, making it more difficult for the species to withstand and recover from stochastic or catastrophic events. Further, the species is likely suffering genetic isolation and reduced adaptive capacity. These conditions result in low viability for the species. In FWS's recent biological opinion for Enlist, additional mitigations were needed for this species to avoid adverse modification of its critical habitat. In the draft methomyl biological opinion, FWS determined that jeopardy and adverse modification are likely without mitigations (USFWS 2023b and 2024a). The 2023 Status of the species assessment describes that the species is found on roadsides, railroads, and agricultural fields which indicates the species and its pollinators are on or near multiple pesticide use sites and could be directly exposed to pesticides.

Photos
Darrell
Brandon



Whorled
sunflower

*Helianthus
verticillatus*





Photo
Darrell
Brandon

A genus of about 50 species, herbs, of North America. References: SE1; Heiser et al (1969); Kelley (2003) in FNA4 (2003b); Schilling (2006c) in FNA21 (2006c); Schilling et al (1998).

Key based in part on Schilling (2006c).

Unkeyed taxa: *Helianthus praecox* ssp. *hirtus*, *Helianthus* species 1, *Helianthus* species 2

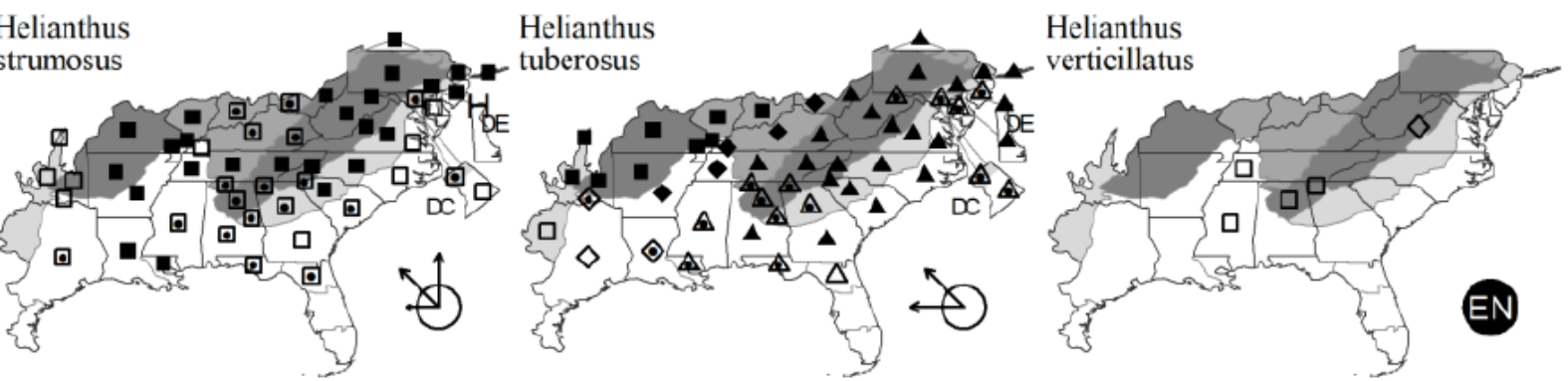
Unkeyed waifs: *Helianthus nuttallii* ssp. *nuttallii*

- 1 Leaves basally disposed, the plants scapose to subscapose, the stem leaves relatively few (with 2-8 nodes below the inflorescence), those on the upper stem opposite or alternate, strongly reduced upward in size as compared to the persistent basal leaves; [section *Atrorubentes*]..... **Key A**
- 1 Leaves cauline, plants leafy the length of the stem, the stem leaves many (with 10 or more nodes below the inflorescence), basal leaves lacking (at least at anthesis).
 - 2 Plant a tap-rooted annual (rarely surviving a second year)..... **Key B**
 - 2 Plant a perennial from crown buds or rhizomes, the roots sometimes tuberous-thickened; [section *Atrorubentes*].
 - 3 Disk flowers red or purple (at least in part)..... **Key C**
 - 3 Disk flowers yellow..... **Key D**

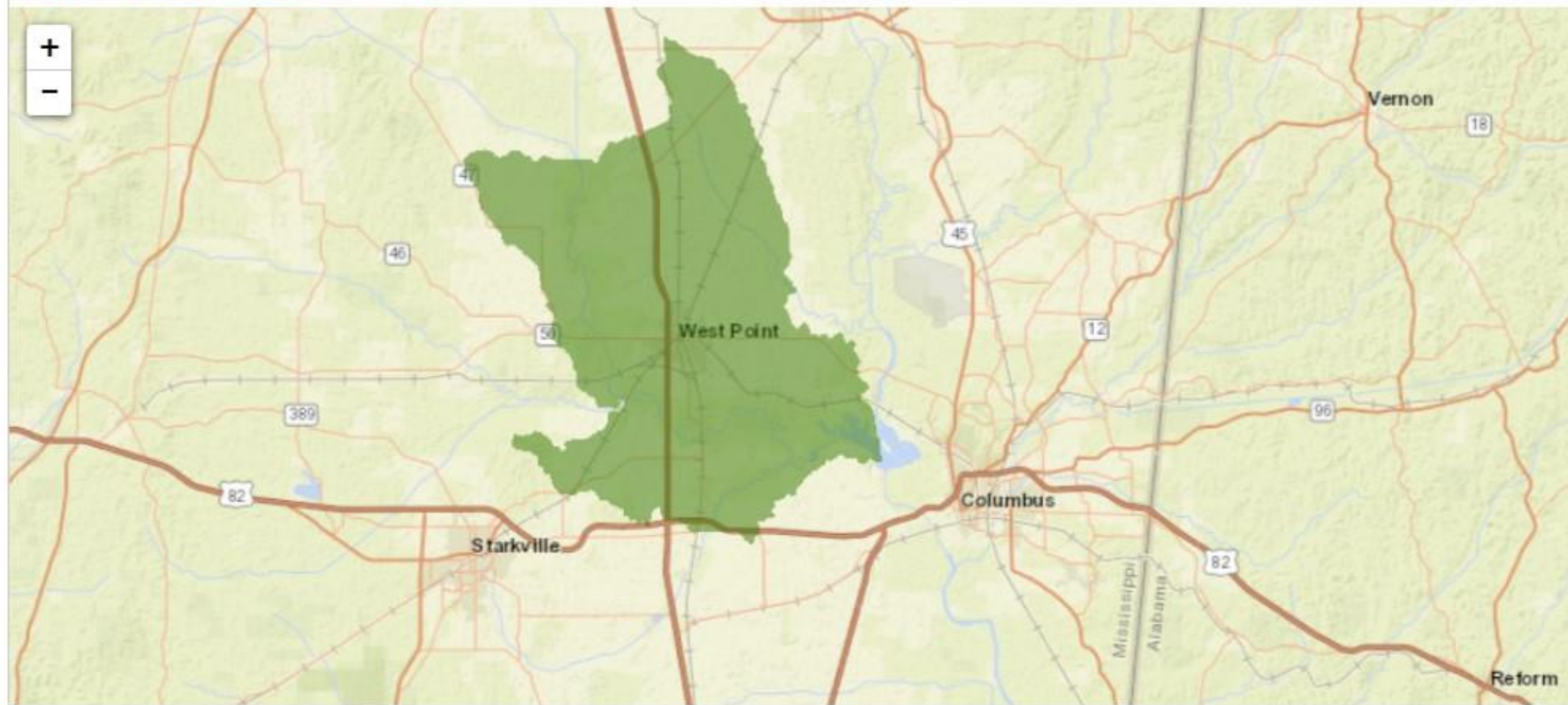
Key D - perennial sunflowers with leafy stems and yellow disk flowers

- 1 Stems below the capitulescence glabrous or nearly so, sometimes glaucous.
 - 2 Leaves whorled at principal nodes, either alternate or opposite at other nodes..... ***Helianthus verticillatus***
 - 2 Leaves either alternate or opposite (or both), never whorled.

Helianthus verticillatus Small. WHORLED SUNFLOWER. **Hab:** Seasonally wet to moist calcareous prairies. **Dist:** Nw. GA, ne. AL, w. TN, and n. MS; disjunct in sw. VA (where uncertainly native; Virginia Botanical Associates 2023). **The species has become a bit popular (niche market) as an ornamental and may be expected to be encountered outside its (admittedly poorly understood) native range.** **Phen:** Aug-Oct. **Tax:** This taxon is a species, not a hybrid; its morphological characteristics alone (with its unique whorled leaves) make the hybrid status suggested by Cronquist (1980) ("a hybrid of *H. angustifolius* with either *H. eggertii* or *H. grosseserratus*") implausible. See Matthews et al. (2002) for additional information. Moore, Siniscalchi, & Mandel (2021) analyzed the genetic diversity of the species. **Wetl:** OBL. **Helio:** 9. **GRank:** G1 (Critically Imperiled). **USES:** Endangered. **Syn:** = FNA21, K3, K4, S, Tn; = *Helianthus* ×*verticillatus* E.Watson (pro sp.) – C, K1, SE1; = n/a – F.

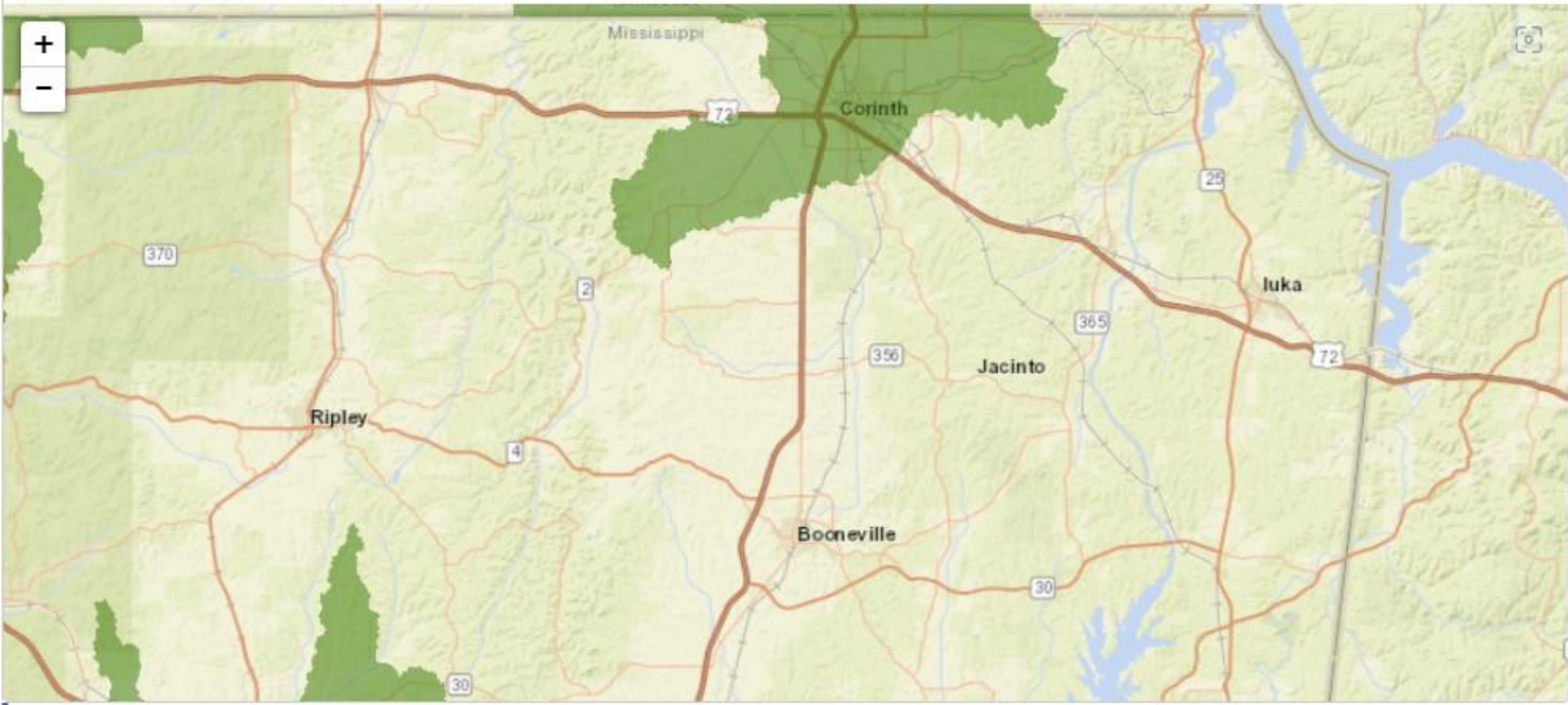


Current range maps are only shown within the jurisdictional boundaries of the United States of America. The species may also occur outside this region.



- Listing status: **Endangered**
 - **States/US Territories** in which this population is known to or is believed to occur: Alabama, Georgia, Mississippi, Tennessee
 - **US Counties** in which this population is known to or is believed to occur: [View All](#)

Current range maps are only shown within the jurisdictional boundaries of the United States of America. The species may also occur outside this region.

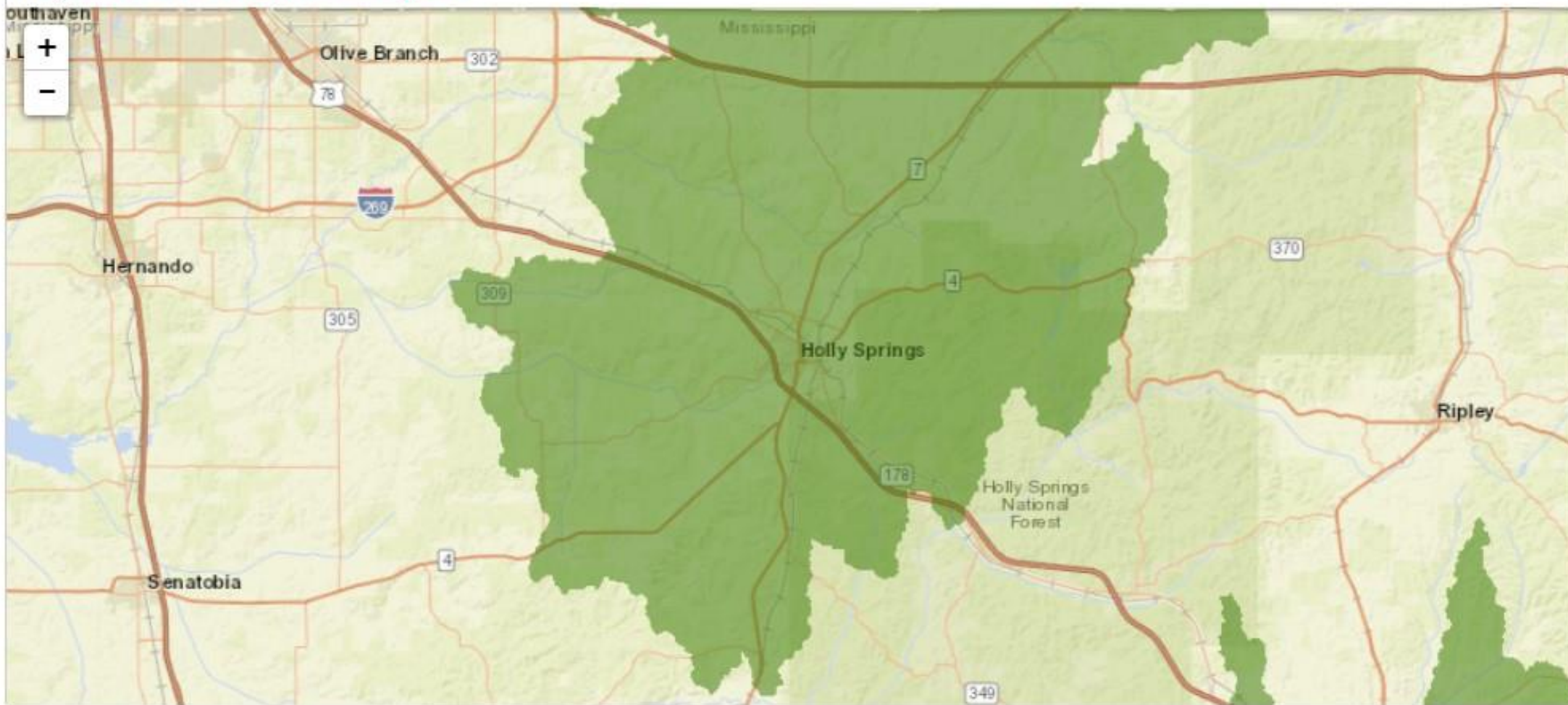


Current range maps are only shown within the jurisdictional boundaries of the United States of America. The species may also occur outside this region.



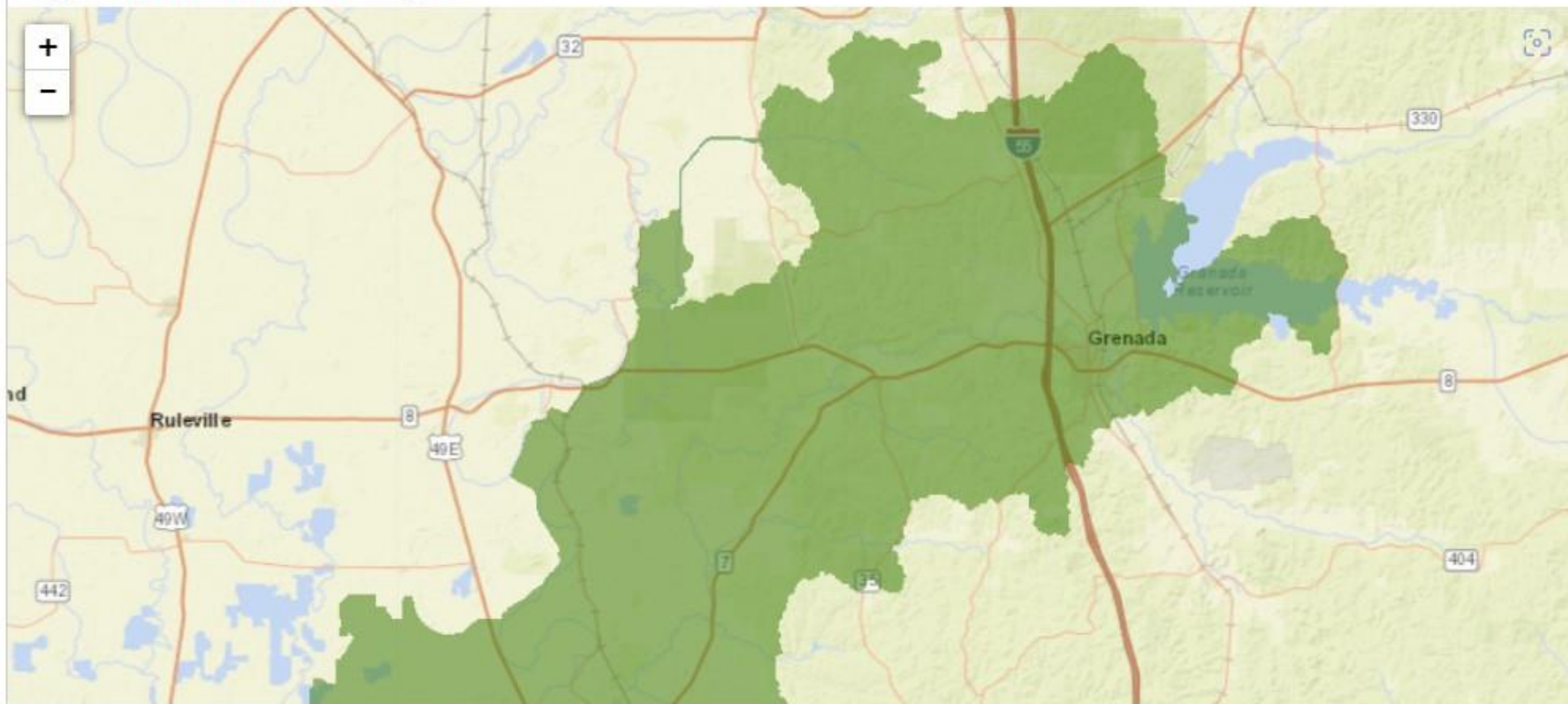
- Listing status: **Endangered**
 - **States/US Territories** in which this population is known to or is believed to occur: Alabama, Georgia, Mississippi, Tennessee
 - **US Counties** in which this population is known to or is believed to occur: [View All](#)

Current range maps are only shown within the jurisdictional boundaries of the United States of America. The species may also occur outside this region.



- Listing status: **Endangered**
 - **States/US Territories** in which this population is known to or is believed to occur: Alabama, Georgia, Mississippi, Tennessee
 - **US Counties** in which this population is known to or is believed to occur: [View All](#)

Current range maps are only shown within the jurisdictional boundaries of the United States of America. The species may also occur outside this region.



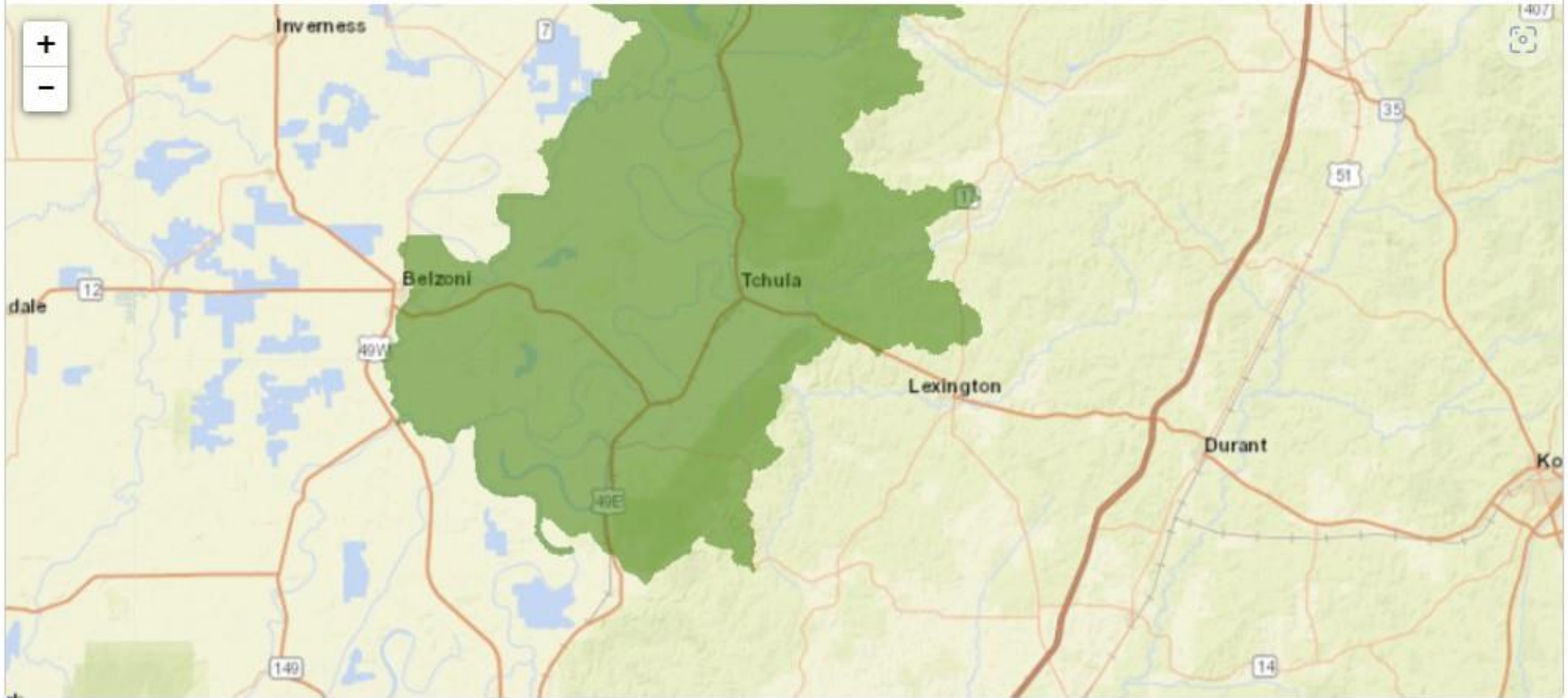
- **Listing status:** **Endangered**
 - **States/US Territories** in which this population is known to or is believed to occur: Alabama, Georgia, Mississippi, Tennessee
 - **US Counties** in which this population is known to or is believed to occur: [View All](#)

Current range maps are only shown within the jurisdictional boundaries of the United States of America. The species may also occur outside this region.



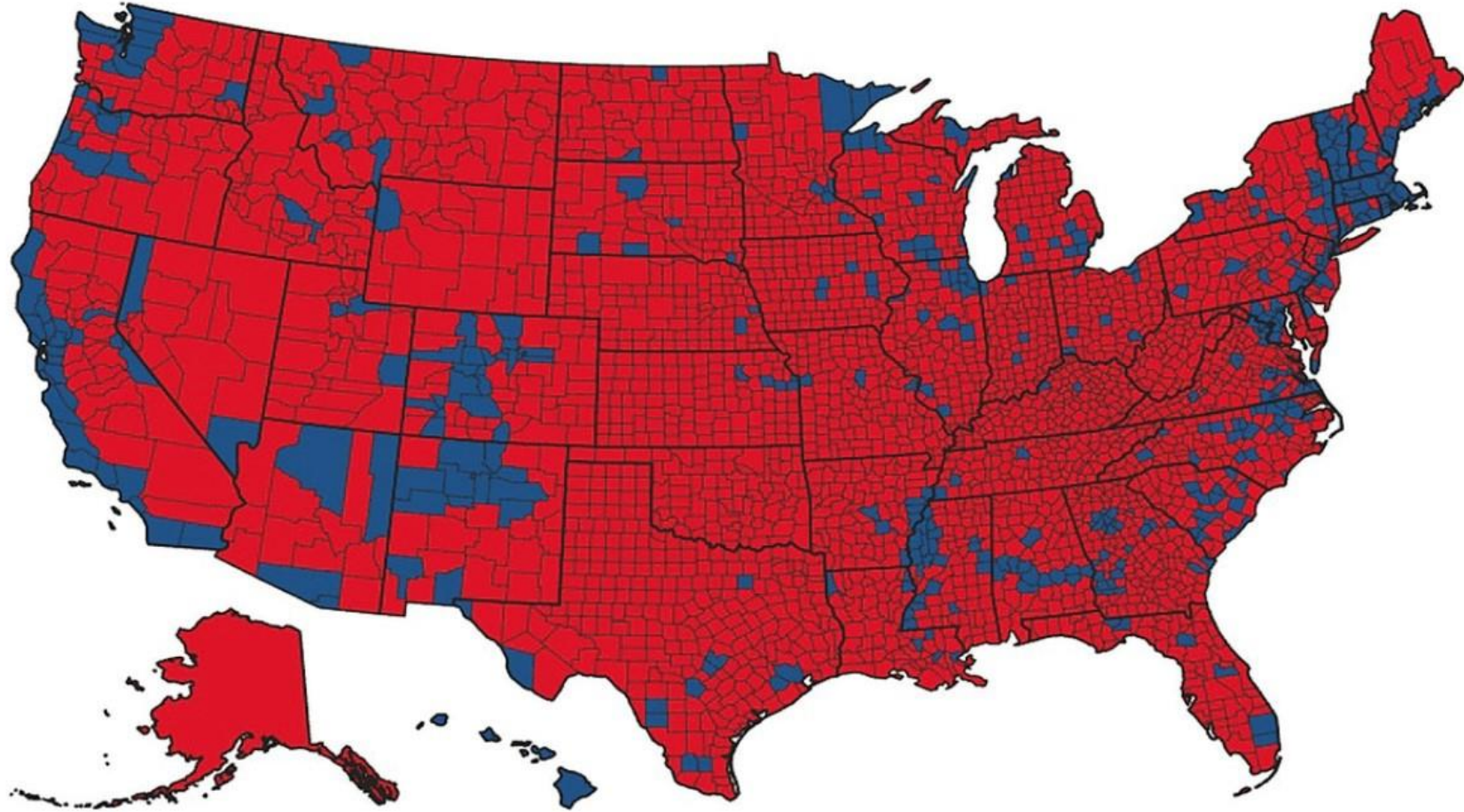
- Listing status: **Endangered**
 - **States/US Territories** in which this population is known to or is believed to occur: Alabama, Georgia, Mississippi, Tennessee
 - **US Counties** in which this population is known to or is believed to occur: [View All](#)

Current range maps are only shown within the jurisdictional boundaries of the United States of America. The species may also occur outside this region.



• Listing status: **Endangered**

- **States/US Territories** in which this population is known to or is believed to occur: Alabama, Georgia, Mississippi, Tennessee
- **US Counties** in which this population is known to or is believed to occur: [View All](#)



DEMOCRACY '24: Here's how your neighborhood voted in the 2024 election

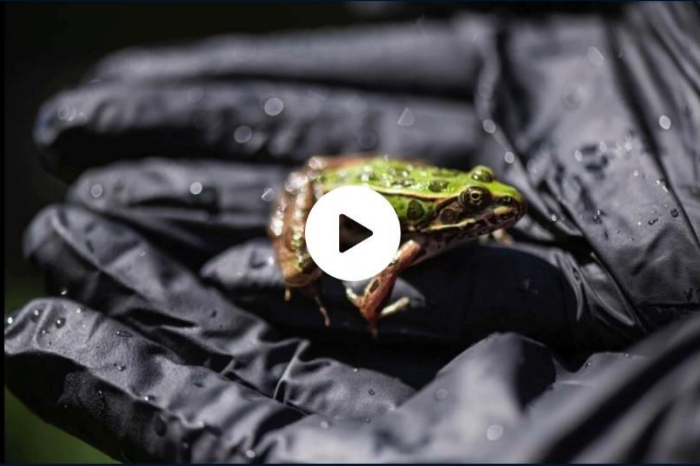
Morning Glory: Trump can unleash a housing boom by ending the 'endangered species' scam

The country needs new houses and apartments but federal bureaucrats hate them.



OPINION

By Hugh Hewitt | Fox News



Nearly 400 endangered leopard frogs released into the wild in Washington

Wild conservation staff in Washington released nearly 400 endangered leopard frogs into the wild with the hopes of "establishing a new population" by setting them free in Columbia National Wildlife Refuge.

More than 1,300 [species are listed as either endangered](#) or threatened in the United States under the federal Endangered Species Act ("ESA"). The 51-year old statute has been administered (and abused) by the United States Fish & Wildlife Service (USFWS), an agency within the Department of the Interior, and the

The civil penalties for "taking" an endangered species begin at \$25,000 per individual of the species "taken," and a person or company that "knowingly" harms, harasses etc. a listed species is looking at a \$50,000 fine and/or a year in jail for every taking.

Government issues hefty fine to individual found guilty of disturbing habitat of at-risk species — here's why it matters

\$25,000 fine
Eastern foxsnake

Story by Demitri Fierro • 1d • 🕒 2 min read

Ontario, Canada





BBC NEWS

Follow

Donkey rides cancelled at New Brighton over animal welfare

AUGUST 18, 2022 · 1 MIN READ

Planned donkey rides for August Bank Holiday have been cancelled at a beach after objections over animal welfare.

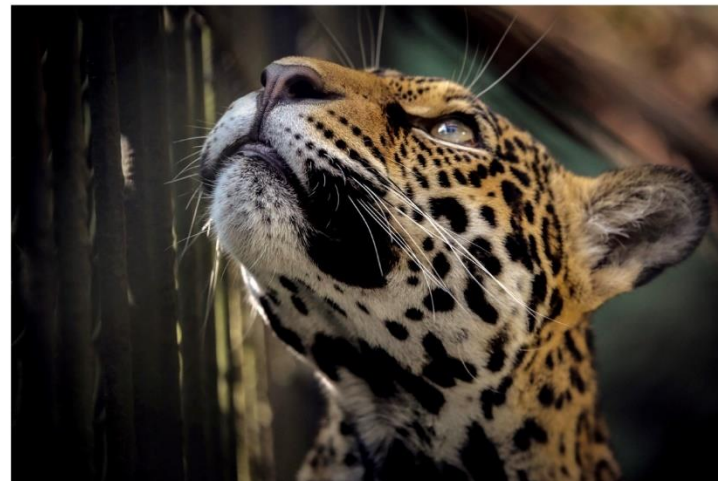
Wirral Council cancelled the plans for New Brighton, Merseyside, over concerns about how the animals would cope in the predicted hot weather.

New Brighton Coastal Community Team, who had protested against the rides, said "common sense has prevailed".

Jaguars, Macaws and Tropical Dry Forest Have a Right To Exist, a Colombian Court Is Told

The "rights of nature" lawsuit follows at least eight Colombian court rulings that have recognized the rights of ecosystems, including the country's portion of the Amazon rainforest. But enforcement of those decisions has been lagging, and some activists face retaliation.

By Katie Surma / July 14, 2024



Why You Should Care About All Animals, Not Just Your Pets
© Provided by Slate

OUR KINDRED CREATURES
How AMERICANS CAME TO FEEL the WAY THEY DO ABOUT ANIMALS
BILL WASIK & MONICA MURPHY

The Harvard Gazette

Findings | Campus & Community | Health | Science & Tech | Nation & World | Arts & Culture | Menu

NATION & WORLD

Raising the profile of animal law to match the stakes

Harvard program aims to protect more than wildlife

Colleen Walsh | Harvard Staff Writer
November 5, 2016 · 6 min read

According to Harvard Law School lecturer **Jonathan Lovvorn**, saving the planet and its inhabitants from climate catastrophe begins with the world's most vulnerable population: animals.

"We have populations everywhere around the world in environmental distress, in economic distress, in political distress," said Lovvorn, who is senior vice president and chief counsel for the Humane Society of the



Illustration by Katie Edwards

NATION & WORLD

Raising the profile of animal law to match the stakes

Harvard program aims to protect more than wildlife

Colleen Walsh | Harvard Staff Writer

November 5, 2018 • 6 min read

According to Harvard Law School lecturer **Jonathan Lovvorn**, saving the planet and its inhabitants from climate catastrophe begins with the world's most vulnerable population: animals.

“We have populations everywhere around the world in environmental distress, in economic distress, in political distress,” said Lovvorn, who is senior vice president and chief counsel for the Humane Society of the



Vegan FTA

16h · 🌐

A new study suggests insects feel pain similarly to humans do. They also have a "descending control of nociception" to adjust their behaviour in different contexts t... See more



veganfta.com

A New Study Suggests Insects Feel Pain Similarly to Humans Do

Is It Time to Care About Insect Welfare?



By Moira O'Donovan
Oct 18, 2024



The New York Declaration on Animal Consciousness

April 19, 2024 | New York University

The New York Declaration on Animal Consciousness

Which animals have the capacity for conscious experience? While much uncertainty remains, some points of wide agreement have emerged.

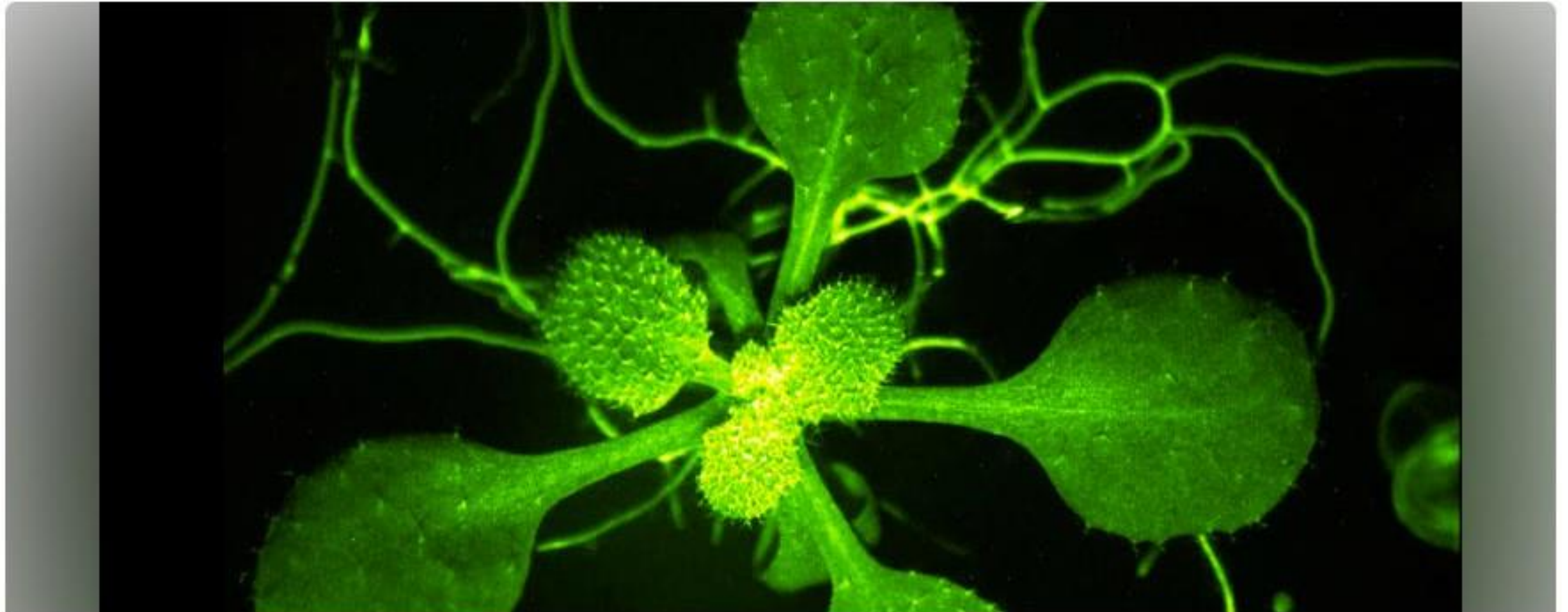
First, there is strong scientific support for attributions of conscious experience to other mammals and to birds.

Second, the empirical evidence indicates at least a realistic possibility of conscious experience in all vertebrates (including reptiles, amphibians, and fishes) and many invertebrates (including, at minimum, cephalopod mollusks, decapod crustaceans, and insects).

Third, when there is a realistic possibility of conscious experience in an animal, it is irresponsible to ignore that possibility in decisions affecting that animal. We should consider welfare risks and use the evidence to inform our responses to these risks.

Plants can talk to each other and scientists say it should make us rethink how we treat them

Story by insider@insider.com (Maiya Focht) • 4mo • ⌚ 3 min read



LIVE

THE WALL STREET JOURNAL

"CRUNCHY MOMS" FOUND A HERO IN RFK JR

Sara Ashley O'Brien/Monday

FOX NEWS
3:44 MT

Fox & Friends First December 4, 2024 • 4:13 • Clip

What's a 'crunchy mom?' Mothers behind the hot topic on social media set record straight



CBS NEWS



Kennedy has described the food in the U.S. as "just poison," citing his own anecdotal experience with his son struggling with eczema while eating pasta in the U.S.

"When he ate any kind of pasta in this country, he would get these terrible, terrible outbreaks, you know, really agonizing. And he moved to Italy and he lived off of pasta for a year and a half and he never got a case," Kennedy said on Sept. 19.

Kennedy suspects that was caused by glyphosate, used in Roundup brand weed-killers, which Italy moved to start restricting in 2016. Italy's decision was over worries that it could pose a cancer risk, and some advocacy groups in the U.S. have also voiced similar concerns.

Agricultural trade associations have defended glyphosate as "one of the safest, most effective" tools farmers have to manage weeds and support "important conservation practices."

Kennedy's plea to crack down on food



Diana Atieh, another "crunchy mom" from Texas, is also thrilled by the idea of RFK Jr. becoming a part of Trump's Cabinet.

"I'm really hoping that he'll change the course of health for children as a whole. Some key things that I would love for him to do would be taking out artificial food dyes, **taking out all these chemicals and preservatives that we have in our country that other countries don't have,** and I think making and holding vaccine manufacturers liable again... I think that just these changes would really impact the health of our children, which is something that's very important," she told host Todd Piro.

"It's so nice to see someone finally in the political arena standing up for our children for once."

Desserts - lots of choices, but none are time-consuming
Page 18

Lee Academy honors athletes in all sports, Pages 6 & 7A

Thompson may put office in Greenwood, 5A

Kids are major influence in food industry
Page 29

The Clarksdale Press Register

128th Year - Number 119 Clarksdale, Mississippi, WEDNESDAY, May 15, 1983 38 Pages in Six Sections 35 Cents

Espy wins runoff by 2-1 margin

Mayor faces challenge from JOHN Mayo June 8

By RAY WOSBY
Managing Editor

Incumbent Mayor Henry Espy easily captured the Democratic nomination for the city's chief administrative position, defeating his challenger by a 2-1 margin in Tuesday's mayoral runoff.

Espy defeated his former business partner Mayo Wilson, 2,150 votes to 1,090 votes in a runoff polling that while light, was still greater than some had expected with no other races on the ballot.

According to unofficial, but decisive totals, Espy captured 67 percent of the 3,240 votes cast.

About 18 percent of the city's eligible voters participated Tuesday.

Having now captured the Democratic nomination, the 58-year-old Espy will now face an independent challenge from former Clarksdale mayor John Mayo in the June 8 municipal general election.

Espy defeated the then incumbent Mayo, now a staffer at Coahoma Community College, in a similar matchup four years ago.

Voters in every city ward supported Espy's re-election

bid, although it was the tremendous boost given him by Ward 1 voters that resulted in the comfortable margin and a relaxed vote-count for Espy and his family, gathered at the Auditorium.

After the votes were counted, Espy telephoned Wilson, thanking him for a "good race."

In what some observers saw as the key to the election, Espy's Ward 1 supporters returned to the polls for the runoff. The mayor received 752 Ward 1 votes yesterday, only 34 less than he received there in the two-week-ago primary. Of the 944 votes cast in Ward 1, Wilson received only 192.

Ward 2 voters also contributed to Espy's easy win, giving him 70 percent of the votes cast at the Auditorium.

By Ward, the unofficial totals in Tuesday's runoff are as follows:

Ward 1-Espy, 752; Wilson, 192

Ward 2-Espy, 485; Wilson, 209

Ward 3-Espy 574; Wilson, 202

Ward 4-Espy 579; Wilson, 434.

The city's Democratic Executive Committee will meet today to certify the additional 49 absentee ballots and 98 affidavit ballots recorded Tuesday, although officials say that will affect the outcome only slightly by increasing the turnout total.



A loss of pigmentation in plant life and vegetation in the Moon Lake area is being blamed on the improper application of a herbicide called Command.

-Photo by Hollis

Herbicide blamed for plant damage

By KERISA HOLLIS
Staff Writer

MOON LAKE -- Discolorated leaves are the tell-tale sign of problems here -- problems apparently caused by improper application of a herbicide called Command.

The number and magnitude of the problems still remain unknown.

Some residents report property and yards of at least twenty different people have been damaged.

Damage to vegetation includes plants in vegetable gardens, pecan trees, rose bushes, and other ornamental plants, trees, and shrubs.

"Mulberry trees, rose bushes, and pecan trees -- they seem to be the hardest hit," says Moon

or purple.

lake resident Fred Lane.

Carolyn Mullins said almost all the newly formed plants on her plum tree have fallen to the ground.

Lane says he noticed the discoloration of leaves in the area last week.

After several residents' reports, the Bureau of Plant Industry folks put two and two together and called the Environmental Protection Agency.

Mike Foreman, a representative of the Bureau of Plant Industry, came to Moon Lake last week and looked at vegetation in the area.

Foreman determined that greenerly was being affected by Command herbicide.

See Herbicide on 2A

Experts can't agree on toxicity of chemical

By KERISA HOLLIS
Staff Writer

MOON LAKE -- In an attempt to answer questions, soothe angry feelings, and calm fears, Joseph Redditt of PMC Inc. and farmer David Griffin met with approximately 50 residents at Kataray's restaurant last night.

PMC is the agricultural chemical company that makes Command herbicide.

Redditt answered many questions from residents, but some of his responses to questions "problems" differ vastly from those of other agricultural specialists.

The biggest area of concern is that of toxicity of the chemical to plants in vegetable gardens and pecan trees.

Redditt last night read a letter written to residents concerning the exposure of the chemical to vegetation.

In relation to gardens being exposed to Command, the letter states that PMC has conducted studies that simulated "unintentional exposure of the chemical to edible crops."

The letter states: "These studies demonstrated that, no residues of Command 4 EC were detectable in or on the edible portions of such crops as tomatoes at the normal time of harvest. Therefore, we are not aware of any danger involved in eating fruits or vegetables which show no discoloration, even if non-edible leaves on the same plant may be discolored."

But the company letter recommends not eating exposed fruits and vegetables.

"To err on the side of caution, we recommend that you not eat home-grown fruits and vegetables, such as lettuce and green, etc., whose edible portions show discoloration suspected of being attributable to Command 4 EC herbicide," the letter states.

"Good common sense would tell you not to eat any foliage that's discolored," says weed specialist John Byrd.

Byrd works with the Mississippi Cooperative Extension Service in Starkville.

"I would not eat discolored vegetation or any plant part that has been discolored and is exhibiting the symptoms," Byrd adds.

Byrd does point out that Command is approved for use on such vegetables as sweet potatoes and English peas.

According to Redditt, "Pumpkins are treated with Command, Melons, Peppers ... also edible beans, pink eye purple hull peas, cow peas. Most of these are in the state, and throughout the nation are treated with Command."

However, Extension agronomist Wayne Houston points out that Command residue on commercial vegetables.

See Toxicity on 2A



Ford may run for Congress if Whitten decides to retire

JACKSON, Miss. (AP) -- House Speaker Tim Ford says he may be a Democratic candidate for Congress if longtime 1st District incumbent Jamie Whitten, D-Miss., decides not to run again.

"If he is not going to run, I would like to see who might, and I may or may not be one of them," Ford, a Tupelo lawyer, said Tuesday.

Ford said Whitten, who has served longer than any congressman in history, has done a good job representing the district and the state. Whitten, 83, was in his first term when the Japanese bombed Pearl Harbor on Dec. 7, 1941.

A group of Tupelo-area businessmen reportedly commissioned the Penacola-based Marketing Research Institute to conduct a statewide poll to sample public interest in replacing Whitten.

Lori Weems, MRI's director of operations, would not say who requested the poll and would not release the results.

Others being mentioned as possible 1st District candidates include state Rep. Mike Mills, D-Abbeville; state Rep. Bill Wheeler, D-Baldwin; Bob Whitwell, a former federal attorney from Oxford; state Sen. Roger Wicker, R-Tupelo; and former Tupelo Mayor Clyde Whitaker, who challenged Whitten last year.

Delta Jubilee requests for deputies, gravel turned down

By RAY WOSBY
Managing Editor

Chamber of Commerce officials appealed to the Coahoma County Board of Supervisors Tuesday to lend additional physical and financial aid to help out with some real problems surrounding next month's Delta Jubilee.

But while supervisors do not wish to appear any poorer, they said their goody bag is empty.

"This is a unique situation," Chamber/Industrial Foundation Executive Director Ron Hudson said, referencing several problems originating from the decision to hold this year's Jubilee in what amounts to a field in the Industrial Park, behind the Chamber headquarters.

The officials say that despite numerous efforts, they were unable to secure a better place to hold annual Delta Jubilee.

"This is the site," Chamber Division Manager Gela Abraham said. "Let's try to work together."

Since this year's site lies outside Clarksdale's corporate limits, city police cannot provide any for the event as in years past. Therefore, Chamber officials want Sheriff Andrew Simpson to do so.

During manpower shortages, however, Thompson yesterday that in order to provide adequate security, particularly at this site, he would employ and outfit at least four additional deputies.

He estimated the price tag for that at better than \$5,000.

Far more costly, however, would be the Chamber's additional request that the county provide a considerable amount of limestone gravel for parking and a "base" for the main stage area.

County Engineer David Evans said sequential rains have prohibited him from paving the area and that it is now so rain-soaked that he is not even sure that he can get a heavy truck into the desired location.

The county engineer also said that he has inspected the area and that to meet the Chamber's stated desire would require some \$10,000 worth of limestone gravel.

"It is imperative we get the limestone put down now," Hudson said. "That red clay gravel (at the site) will be mud if it rains."

"You are really telling this board the burden is falling on '93," Board President Jim Humber said. "It is falling on us to save the festival."

"We just do not have \$15,000," Humber said. "We are already in a bind."

But 4 Supervisor Eddie C. Smith also suggested that Clarksdale officials might also be prosecuted in that the city would likely reap almost all the financial benefits (sales tax, etc.) resulting from the Jubilee.

Chancery Clerk Wayne Orr agreed to attend and set up a joint meeting with at least some of the board members today.

It was also suggested that the Chamber consider taking out a short-term loan to help defray Jubilee on 2A





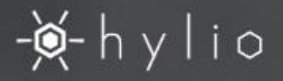


MODEL NO. 21
DAISSY
MFG. CO.
ROGERS
ARK.
U.S.A.
PAT. NO. 2,750,386
REG. NO. 08829

VINTAGE
DAISY
DOORBLE
BARREL
BB GUN
\$72.50
JS-11

The
Big Horn
Snee
BOW





[Home](#)

[Products](#) ▾

[Learn More](#) ▾

[Careers](#)

[Contact](#)

[Buy Now](#) ▾

PRECISION CROP CARE

AUTONOMOUS DRONES

[VIEW PRICES - GET QUOTE](#)

 **Manufactured in Texas, USA**
With US and Global Parts

US agriculture industry gears up for futuristic aerial 'drone-swarm' farming after FAA decision

Texas drone maker Hylío wins FAA exemption to make flying payloads competitive with farm tractors



By Michael Ruiz | FOXBusiness



FAA clears way for futuristic 'drone-swarm' agriculture

The Federal Aviation Administration has granted its first exemption for the use of 'drone swarms' above an American farm, speeding up a new high-tech process expected to save farmers time and money. (Credit: Hylío)

A new exemption for drone piloting from the Federal Aviation Administration has cleared the airways for "drone-swarm" agriculture, a method of seeding and spraying crops at a fraction of the traditional cost.

Even a set of [three drones](#) costs substantially less than a single tractor. They use less water to carry chemicals, causing less soil compaction, and only a fraction of the fuel for generators to recharge batteries in the field. [And Hylío](#) doesn't charge a subscription fee for its software, Erickson said.

Under previous rules, a single drone required a pilot and another person acting as a spotter. Because of weight limitations in flight, it took a long time to cover large fields.



Top 5 Best Drones With Cameras

Learn How You Get The Best Drone In The US In 2024 Only \$99. Record Your Epic Adventures!

bestconsumertech.com

[Open](#)

Now the two-person team can fly up to three drones at once in a "swarm," covering triple the area in the same time, making it almost as fast as a conventional tractor.

Obituary for Dr. David B. Smith



Starkville. Dr. David B. Smith, 81, a retired MSU teacher and researcher died on January 26, 2024 at his residence in Starkville, MS, and has gone home to be with his savior, Jesus Christ. Services are to be at First Baptist Church in Starkville, MS on Tuesday January 30, 2024 with Visitation starting at 9:00 am to 11:00 am with the service beginning at

MS on Tuesday January 30, 2024 with Visitation starting at 9:00 am to 11:00 am with the service beginning at 11:00 am with a graveside service at 3:00 pm at Richland Cemetery in Richland, MS.

Dr. Smith was born in Little Rock, AR in 1942 and graduated from Florence (MS) High School. He received many 4-H awards and recognitions including being selected as one of six 4-Hers to make the "Report to the Nation" trip. He and a young lady from their group were honored to be selected to make the group's report to Vice President Lyndon Johnson. The six 4-Hers visited Washington, DC; Pittsburg, PA; New York, NY and St. Louis, MO where they were interviewed on TV and radio. He received his BS and MS degrees in Agricultural Engineering from Mississippi State University. His PhD degree was in engineering from the University of Missouri with a collateral field in Meteorology. He was employed by the USDA, Agricultural Research Service for 18 years in Mississippi and Missouri. He was also employed by Mississippi State University and the Mississippi Agricultural & Forestry Experiment Station for 26 1/2 years. He published over 140 research articles including six book chapters. He was a former member of many scientific and honorary organizations including Tau Beta Pi, Gamma Sigma Delta, and Alpha Epsilon as well as being listed in twelve different national and international biographical references. He was awarded The FIEI Young Researcher Award in 1980 by the American Society of Agricultural Engineers. This organization also awarded him the "Fellow" distinction, an award that is given to no more than 2% of the society's membership. The Governor selected him to serve on the Mississippi Agricultural Aviation Board. He was a member of First Baptist Church.

Primary causes of off-target pesticide drift

- droplet size
- release height above target
- wind
 - speed
 - direction



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

extension.osu.edu

fabe.osu.edu

Effect of Major Variables on Drift Distances of Spray Droplets

FABE-525

Date: 04/04/2016

H. Erdal Ozkan, Professor, Food, Agricultural and Biological Engineering

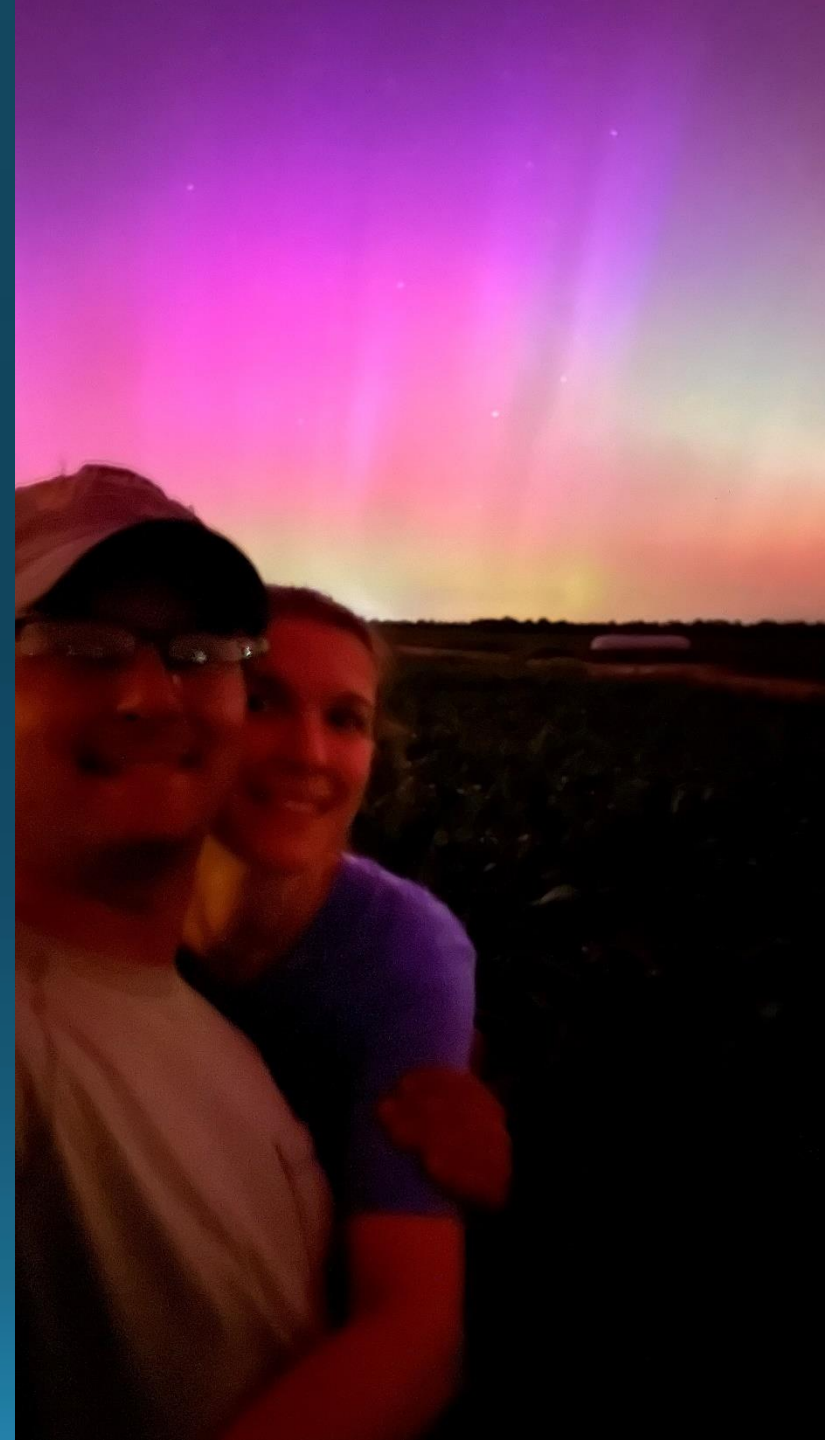
Dr. Heping Zhu, Agricultural Engineer, USDA-ARS Application Technology Research Unit

Drift is influenced by many factors that usually may be grouped into one of the following categories: 1) Spray characteristics, 2) Equipment and application techniques used, 3) Weather, and 4) **Operator care and skill**. A general discussion of these factors can be found in another publication by Ozkan (1991). In this publication, you will find specific information on how much influence some of these major factors have on the drift distances of spray droplets.



May 10, 2024

Linn, MS





May 10, 2024
Starkville, MS



Solar storms a potentially costly risk for GPS agriculture

Some farmers reported intermittent problems throughout the weekend of May 10-12. Others said their tractors shut down.

By [Chuck Abbott](#) | Published on June 3, 2024



PHOTO: XTREMEAG

The solar storms that knocked out GPS networks in early May — prime planting time in the Midwest — cost farmers a “nontrivial” amount of revenue that depends on how long their equipment was

Advertisement

PROGRESSIVE

**Protect your
hardworking
UTV**

—
**Quote online in as
little as 3 minutes**



[Get a quote](#)



NOAA warns that they can also cause some protective assets to **"trip out key assets from the grid,"** as well as cause **orientation problems** for spacecraft.

October 10, 2024

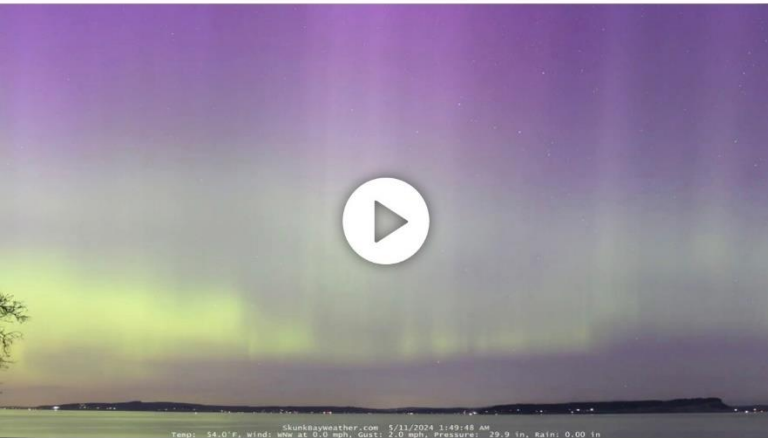
Linn, MS



Rare solar storm wows stargazers across America: 'So awesome!'

A coronal mass ejection, or CME, is responsible for the geomagnetic storms

 By Jasmine Baehr | Fox News



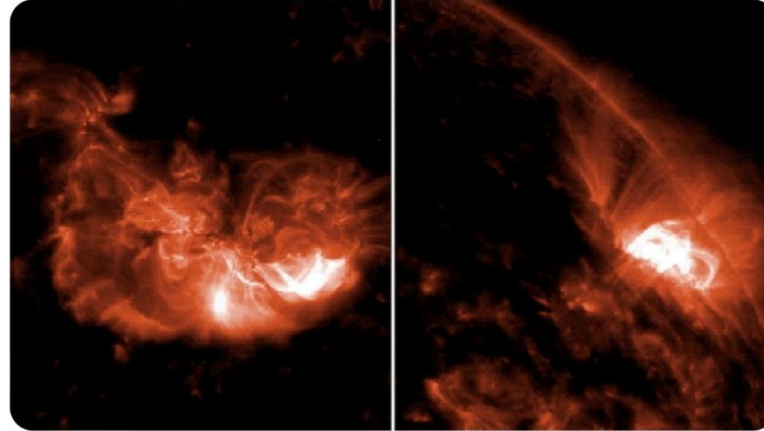
Aurora Borealis spotted in timelapse above Washington state during solar storms

In this timelapse provided by Fox Weather, Friday night's solar storms were in full view in the night skies above Hansville, Washington. Credit: Greg Johnson / SkunkBayWeather.com

Historic geomagnetic storms made for a beautiful display in night skies across America Friday night, with the aurora visible as far [south as Florida](#).

The National Oceanic and Atmospheric Administration, or NOAA, confirmed the geomagnetic storms hit an "extreme" level 5 condition Friday. NOAA also reported there is no sign of these historic storm conditions slowing down until Sunday.

"If it's the same orientation as Earth, Earth's magnetic field is pointing north, pointed up, and the CME arrives in the same direction," Dahl said. "You get an initial punch, things will happen, but then it'll settle down pretty quickly."



NASA's Solar Dynamics Observatory captured these images of the solar flares — as seen in the bright flashes in the left image (May 8 flare) and the right image (May 7 flare). The image shows a subset of extreme ultraviolet light that highlights the extremely hot material in flares and which is colorized in orange.

(NASA/SDO / NOAA)

In May, the CME arrived and stayed connected to Earth's magnetic field for more than 24 hours.

After the initial CME is seen blasting away from the Sun, space weather forecasters see it, but then they have to wait for the solar wind to reach a NASA satellite 1 million miles from Earth to issue warnings or geomagnetic storm watches.

TED RADIO HOUR

Latest Show Ted Radio Hour Podcast Ted Radio Hour +

LISTEN & FOLLOW



FRIDAY, NOVEMBER 15, 2024

 SHOW ARCHIVE



Making sense of the sun

The sun rises and sets every day of our lives, but it still holds many mysteries. This hour, TED speakers share the latest in probing, replicating, and harnessing the power of our massive star.

 LISTEN TO FULL SHOW

+ PLAYLIST



PLAY LIVE RADIO

OPEN ^



Donna M. Pierce

Associate Professor,
Astrophysics

132 Hilbun Hall
Mississippi State, MS 39762

(662) 325-2914

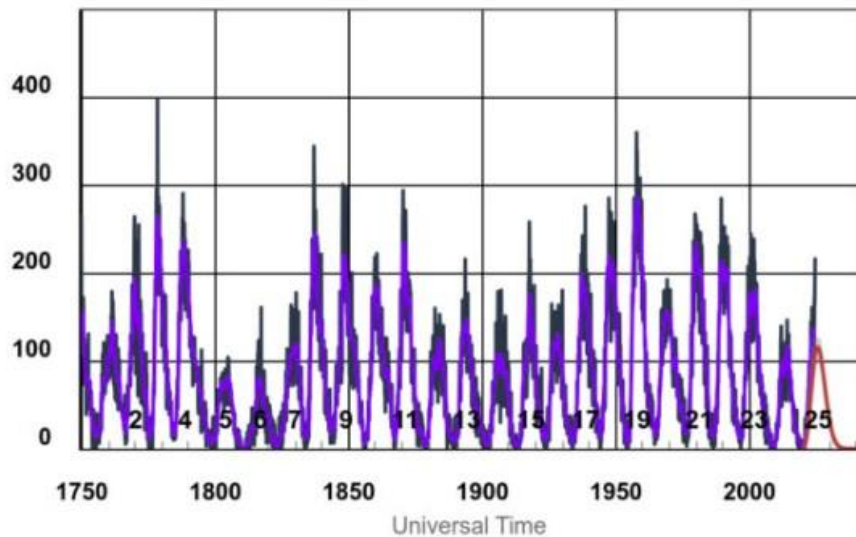
Email

Impact of the Gannon Storm on Precision Agriculture

These precision systems rely on sub-centimeter positioning accuracies to maximize the number of rows per field and placement of seeds. During the Gannon Storm, farmers across the United States and Canada reported positioning errors from 10 to 30 feet resulting in a significant cumulative loss of planting area.

From the SWAG Report, Sep. 26, 2024
pp. 21 - 22

ISES Solar Cycle Sunspot Number Progression



Monthly Values Smoothed Monthly Values Predicted Values
Predicted Range

Space Weather Prediction Center



Over 57 Pesticides with Current or Upcoming ESA Commitments *through 2027*

2021

Methomyl

Carbaryl

Atrazine

Simazine

Glyphosate

2022

Enlist One

Enlist Duo

Imidacloprid

Clothianidin

Thiamethoxam

Sulfoxaflor

2023

Inpyrfluxam

Cyantraniliprole

~ 10 new Als

2024

Dinotefuran

Acetamiprid

Brodifacoum

Warfarin

Bromadiolone

Zinc phosphide

Chlorophacinone

Diphacinone

Difenacoum

Bromethalin

Difethialone

Cholecalciferol

2025

Flupyradifurone

Bicyclopyrone

2026

Streptomycin

Acephate

Dimethoate

Naled

Tribufos

2027

Benzovindiflupyr

Halauxifen-methyl

Bensulide

Ethoprop

Phorate

Phosmet

In Pending Litigation

1,3-D (Telone)

2,4-D

Captan

Chlorothalonil

Dicamba

Diuron

MCPA

Mancozeb

Metolachlor

Metribuzin

Oxyfluorfen

Paraquat

Pendimethalin

Propanil

Propargite

Phosphorotrithioate

Thiobencarb

Trifluralin

EPA Releases Draft Biological Evaluations for Bicyclopyrone and Benzovindiflupyr Effects on Endangered Species



U.S. EPA Office of Chemical Safety and Pollution Prevention <oppt.epa@public.govdelivery.com>
To Byrd, John

☺ Reply Reply All Forward

Fri 9/27/2024 11:57 AM

If there are problems with how this message is displayed, click here to view it in a web browser.



Pesticide Update

EPA's Office of Chemical Safety and Pollution Prevention

EPA Releases Draft Biological Evaluations for Bicyclopyrone and Benzovindiflupyr Effects on Endangered Species

The U.S. Environmental Protection Agency (EPA) is releasing two draft biological evaluations (BEs), which include EPA's draft Endangered Species Act (ESA) effects determinations for the pesticides bicyclopyrone and benzovindiflupyr on federally endangered and threatened (listed) species and their designated critical habitats. The draft BEs will be available for public comment for 60 days.

Background on Bicyclopyrone and Benzovindiflupyr

Bicyclopyrone is an herbicide used primarily to control broadleaf weeds as well as

November 26, 2024

Background on Bicyclopyrone and Benzovindiflupyr

Bicyclopyrone is an herbicide used primarily to control broadleaf weeds as well as some annual grass weeds in agricultural crops including corn, wheat, barley, and minor crops such as lemon grass, rosemary, wormwood, horseradish, sweet potato, timothy (grown for seed), banana, plantain, papaya, watermelon, strawberry, broccoli, hops, onion (dry bulb and green), and garlic.

In 2015-2016, the Center for Biological Diversity and the Center for Food Safety sued EPA for failing to assess the potential impacts of registering five pesticides, including bicyclopyrone and benzovindiflupyr, on listed species and critical habitats and consult with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (the Services), if necessary, as required by the ESA. In 2022, the D.C. Circuit approved an agreement requiring EPA to publish final BEs with effects determination for two of the pesticides by September 30, 2025. The draft BEs for bicyclopyrone and benzovindiflupyr are an important step towards finalizing the BEs by September 2025.

EPA's draft determinations are that bicyclopyrone:

- Causes no effect on 450 listed species (26%) and 551 critical habitats (58%).
- Is not likely to adversely affect 57 listed species (3%) and 22 critical habitats (2%).
- Is likely to adversely affect 1,095 listed species (63%) and 163 critical habitats (17%) but not cause Jeopardy/Adverse Modification.
- Is likely to adversely affect 123 listed species (7%) and 208 critical habitats (22%) and cause Jeopardy/Adverse Modification.

From: [Byrd, Sylvia](#)
To: [Byrd, John](#)
Subject: FW: [BULK] [FNSPEC] Food Sleuth Radio guests and topics for August 2024 + links to July interview recordings
Date: Thursday, August 1, 2024 9:54:58 AM
Attachments: image001.png

Check out August 15

Helping Mi

Sylvia H. E
Professor/
Office of N
Mississippi

Extending

Mailing Ac
Physical Ai
662-325-0

*Confidential
addressed a
disseminati
than the int
material fro*

From: FNS
Sent: Thur
To: FNSPE
Subject: [f
interview i

Good mor
and resou
This mon
I hope the

Food Slet
towards social and environmental justice. The program is produced through *KOPN* in Columbia, MO, where it airs Thursdays at 5:00 p.m. Central at www.kopn.org. Interviews then air nationally via Pacifica and PRX the week following the dates below. Podcasts are available via [Stitcher](#), [KOPN](#), [Transistor](#), and [iTunes](#).

August 15th: Daniel Hinkle, J.D., lawyer, lobbyist and Senior State Affairs Counsel at the American Association for Justice, discusses the role of **trial attorneys in helping farmers and groundskeepers receive compensation from harms related to pesticide use**, and the agrochemical industry's attempts to reduce their liability by influencing **pesticide labeling**.

Web: American Association for Justice: <https://www.justice.org/>

Failure to Warn legislation: <https://beyondpesticides.org/dailynewsblog/2024/02/state-legislation-popping-up-to-limit-liability-of-pesticide-manufacturers/>

Icahn School of Medicine Glyphosate fact sheet:

<https://icahn.mssm.edu/files/ISMMS/Assets/Departments/Environmental%20Medicine%20and%20Public%20Health/CEHC/FactSheet-Glyphosate.pdf>

IARC review of glyphosate: <https://www.iarc.who.int/featured-news/media-centre-iarc-news-glyphosate/>

[MEMBERSHIP](#)

[EDUCATION AND EVENTS](#)

[PUBLICATIONS AND RESOURCES](#)

[ADVOCACY](#)

[MEMBER GROUPS](#)

[GIVE](#)

MEMBERSHIP

ONLY AAJ

AAJ Delivers Exceptional Education, Unparalleled Advocacy, and a Dedicated Community of Trial Lawyers Fighting for Justice.

[JOIN NOW](#)





Select Month ▾

CATEGORIES

- ▼ Agriculture (1214)
 - ↳ Hydroponics (13)
- ▶ air pollution (8)
- ▶ Alternatives/Organics (1220)
- ▶ Announcements (605)
- ▶ Antibacterial (133)
- ▶ Antibiotic Resistance (45)
- ▶ Antimicrobial (22)

« Juneteenth 2024–Taking Action to Fight Disproportionate Adverse Effects to People of Color

Literature Review Analyzes Pesticide Sensitivity in Bee Species on a Molecular Level »

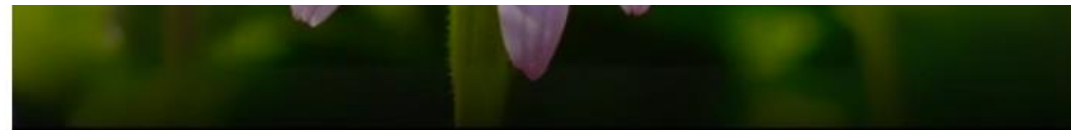
EPA “Mitigation Menu” Called Complex, Raising Doubts about Required Endangered Species Protection

20 Jun



Beyond Pesticides is calling for an end to all petrochemical pesticide and fertilizer use by 2032 and accelerate the adoption of organic farming and land use. While many observers of regulatory failure may be tempted to feel hopeless, change can be driven by market demand. Organic agriculture is growing, and consumers have created not just a market for organic produce and crops, but momentum for responsible food production provided by organic methods.

- (CDC) (13)
- ▶ Chemical Mixtures (9)
- ▶ Chemicals (4464)
- ▶ Children (120)
- ▶ Children/Schools (240)
- ▶ cicadas (1)
- ▶ Climate (32)
- ▶ Climate Change (90)
- ▶ Clover (1)
- ▶ compost (7)
- ▶ Congress (21)
- ▶ contamination (160)
- ▶ Corporations (1096)
- ▶ deethylatrazine (1)
- ▶ diamides (1)
- ▶ Disease/Health Effects (1849)
- ▶ Disinfectants & Sanitizers (19)
- ▶ Drift (19)
- ▶ Drinking Water (18)



(Beyond Pesticides, June 18, 2024) As part of its update to the proposed U.S. Environmental Protection Agency (EPA) Endangered Species Act (ESA) Workplan, the agency held a public webinar on June 18, 2024, which provided an overview of the agency’s “Mitigation Menu Website” for “reducing pesticide exposure to nontarget species from agricultural crop uses.” [Check back to see webinar when posted by EPA.] After court decisions forced EPA to develop a strategy to meet its statutory responsibility to protect endangered species from pesticide use, the agency recognized that it is, in its own words, “unable to keep pace” with its legal obligations. Despite this acknowledgement, the agency said it would “provide flexibility to growers to choose mitigations that work best for their situation.” In this spirit, a range of people, including grower groups, gathered earlier in the year for a series of workshops in the Pacific Northwest to discuss possible mitigation measures. According to a report written by commercial beekeeper Steve Ellis (more background), concrete decisions were not reached at the workshops as participants recognized the complexities in crafting pesticide product label restrictions to protect endangered species. Mr. Ellis concluded: “If it’s so complex that it’s impossible, then no one wins.”

Glyphosate

Glyphosate is a weed killer, or herbicide. It is the most extensively used pesticide in the world today for both residential and agricultural purposes.

HOW ARE WE EXPOSED TO GLYPHOSATE?

Glyphosate is often applied to lawns and gardens, and can contaminate plants, soil, air, and food. Glyphosate can be inhaled or ingested.

Glyphosate used on lawns and in parks can be tracked into homes on shoes or strollers that have had contact with glyphosate-treated surfaces. Residues of glyphosate are detected on some produce as well as in processed foods.

WHAT ARE THE HEALTH EFFECTS OF GLYPHOSATE?

Children and fetuses are most vulnerable to pesticide exposures due to their developing organ systems and differences in the way they metabolize toxins. In addition, developmentally normal hand-to-mouth behavior, close proximity to the ground where pesticides settle, and high respiratory rates result in higher exposures in children compared with adults.

- Cancer:** Glyphosate is classified by the World Health Organization's International Agency for Research on Cancer (IARC) as probably carcinogenic to humans based on strong evidence that it causes cancer in laboratory animals and some evidence that it increases cancer risk in humans.
- Hormone Disruption:** Studies have shown that glyphosate is an Endocrine Disrupting Chemical (EDC), meaning that it interferes with hormones in the body. EDCs can interfere with the development of the brain as well as the function of organ systems, such as the nervous and reproductive systems.
- Birth Defects:** Elevated rates of birth defects have been observed in animals fed with glyphosate-treated crops and in farming communities in areas where large quantities of glyphosate are used. Further research is needed to examine the link between glyphosate and birth defects.
- Nervous System Toxicity:** Laboratory studies suggest that glyphosate is toxic to the nervous system.
- Antibiotic Resistance:** Glyphosate has the potential to make bacteria less sensitive to antibiotics.

HOW CAN I REDUCE MY EXPOSURE TO GLYPHOSATE?

- Avoid using weed killers that list glyphosate as the active ingredient.
- Leave shoes, strollers, and wheeled luggage by the door in your home.
- Wash your hands before eating and after spending time outdoors.
- Choose GMO-free foods labeled USDA Organic or Non-GMO Project Verified.
- Advocate for glyphosate bans in public spaces in your community.
- Encourage neighbors to avoid use of glyphosate-containing products.



Institute for
Exposomic Research

This material was developed through the Mount Sinai Children's Environmental Health Center (www.cehcenter.org) and Transdisciplinary Center on Early Environmental Exposures (tceee.icaahn.mssm.edu, NIEHS grant P30ES023515). As part of the Institute for Exposomic Research, we translate and connect our science to supporters and communities committed to ensuring a healthier future for all. To learn more about the Institute's research, visit icaahn.mssm.edu/exposomics.

© ISMMS 2018

@SinaiCEHC

 @SinaiExposomics



What do global regulatory and research agencies conclude about the health impact of GLYPHOSATE?

Risk Assessment		What is the likelihood this will cause harm, based on risks and exposures?
EPA United States Environmental Protection Agency	USA	"Human health risk assessment concludes that glyphosate is not likely to be carcinogenic to humans... [and] no other meaningful risks to human health when the product is used according to the pesticide label" 2017
EPA United States Environmental Protection Agency Office of Pesticide Programs	USA	"Not strong support for... suggestive evidence of carcinogenic potential... based on the weight of evidence... Even small, non-statistically significant changes... were contradicted by studies of equal or higher quality. The strongest support is for not likely to be carcinogenic to humans." 2017
NTP National Toxicology Program	USA	"Little evidence of toxicity, and there was no evidence of glyphosate causing damage to DNA" 1992
Health Canada	Canada	"Products containing glyphosate do not present unacceptable risks to human health or the environment when used according to the revised product label directions... Risks to [occupational] handlers are not of concern for all scenarios" 2017
ECHA European Chemical Agency	Europe	"No pesticide regulatory authority in the world currently considers glyphosate to be a cancer risk to humans at the levels at which humans are currently exposed" 2019
EFSA European Food Safety Authority	Europe	"Based on the epidemiological data as well as on data from long-term studies in rats and mice, taking a weight of evidence approach, no hazard classification for carcinogenicity is warranted" 2017
EFSA European Food Safety Authority	Europe	"Glyphosate is unlikely to be genotoxic or to pose a carcinogenic threat to humans... Neither the epidemiological data nor the evidence from animal studies demonstrated causality between exposure to glyphosate and the development of cancer in humans" 2018
ANSES Agence Nationale de Sécurité Sanitaire	France	"Level of evidence of carcinogenicity in animals and humans is considered to be relatively limited and does not allow for a 1A or 1B classification (known or suspected carcinogen for humans)" 2016
BfR Bundesinstitut für Risikobewertung	Germany	"Available data do not show carcinogenic or mutagenic properties of glyphosate nor that glyphosate is toxic to fertility, reproduction or embryonal/fetal development in laboratory animals" 2015
Federal Department of Home Affairs FDHA Federal Food Safety and Veterinary Office FSVO	Switzerland	"Residues of glyphosate in the foods investigated do not represent a risk of cancer" 2018
Australian Government Australian Pesticides and Veterinary Medicines Authority	Australia	"Glyphosate does not pose a carcinogenic risk to humans... Products containing glyphosate are safe to use as per the label instructions" 2016
Environmental Protection Authority Te Mana Hauora	New Zealand	"Unlikely to be carcinogenic to humans or genotoxic (damaging to genetic material or DNA) and should not be classified as a mutagen or carcinogen" 2016
ANVISA Agência Nacional de Vigilância Sanitária	Brazil	"No evidence to indicate that the herbicide glyphosate is carcinogenic" 2019
Food Safety Commission of Japan	Japan	"No neurotoxicity, carcinogenicity, reproductive toxicity, teratogenicity, and genotoxicity" 2016
Rural Development Administration	Korea	"Epidemiological studies on glyphosate... found no cancer link" 2017
World Health Organization Food and Agriculture Organization of the United Nations	Global	"Glyphosate is unlikely to be genotoxic at anticipated dietary exposures. Glyphosate is unlikely to pose a carcinogenic risk to humans from exposure through the diet" 2016
World Health Organization Drinking-water quality guidelines	Global	"Under usual conditions, the presence of glyphosate and AMPA [aminomethylphosphonic acid, glyphosate's primary metabolite] in drinking-water does not represent a hazard to human health" 2004
World Health Organization International Programme on Chemical Safety	Global	"Available data on occupational exposure for workers applying Roundup indicate exposure levels far below the NOAEL (no observed adverse effect levels) from the relevant animal experiments" 1994
Longitudinal Study: How glyphosate impacted 64,225 pesticide applicators since 1993		
Agricultural Health Study	USA	"No association was apparent between glyphosate and any solid tumors or lymphoid malignancies overall, including non-Hodgkin lymphoma and its subtypes... some evidence of increased risk of AMI, acute myeloid leukemia among the highest exposed group that requires confirmation" 2018
Hazard Assessment: What is the potential to cause harm, regardless of dose or exposure?		
International Agency for Research on Cancer World Health Organization	Global	"Limited evidence in humans for the carcinogenicity of glyphosate... Evidence in humans is from studies of exposures, mostly agricultural (e.g. not from dietary exposures)... A positive association has been observed for non-Hodgkin lymphoma... There is 'strong' evidence that exposure to glyphosate or glyphosate-based formulations is genotoxic" 2015
IARC placed glyphosate in its hazard category 'Group 2A: probably carcinogenic to humans' along with red meat, hot beverages, and working as a barber. The evidence on carcinogenicity was less robust than for agents such as bacon, salted fish, oral contraceptives and wine.		

Genetic Literacy Project

© 2018 by the Institute for Exposomic Research. All rights reserved. This document is for informational purposes only and does not constitute a medical or health recommendation. It is not intended to be used as a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. We warrant that the information on this website is accurate as of the date of publication. We do not warrant the accuracy of any information on this website that is updated or changed after the date of publication.

2 Questions

Who sprays?

Who reads the label?

PESTICIDES

Following several fallow decades, herbicide companies are searching for new modes of action

Scientists hope new tools will help them kill weeds that have evolved to tolerate existing chemicals

by *Matt Blois*

June 17, 2022 | A version of this story appeared in **Volume 100, Issue 22**



THE HERBICIDE DROUGHT

Steve Duke, an herbicide researcher at the University of Mississippi, blames the lack of new modes of action on three main factors: the introduction of crops that were genetically modified to tolerate glyphosate, increased regulatory costs, and industry consolidation.

Monsanto, now owned by Bayer, first introduced Roundup Ready soybean seeds in 1996. Plants grown from these seeds are genetically modified to survive applications of glyphosate, the active ingredient in Roundup herbicide. Farmers can spray entire fields with glyphosate without harming their own crops. The Roundup Ready system worked so well that it didn't make sense for chemical companies to try to discover something better.

"Some companies quit doing herbicide discovery," Duke says. "Others reduced the amount of herbicide discovery they were doing dramatically."

In a **2011 paper**, Duke cited patent data showing that the number of patents issued in the US for herbicides dropped from more than 432 in 1997 to 65 by 2009. At the height of enthusiasm for glyphosate, Duke says, crop protection companies likely had herbicides with new modes of action in development but didn't advance them because executives worried they wouldn't be competitive. "People weren't willing to take that risk," he says.

At the same time, the cost of complying with regulations was rising. A **2018 study** funded by the industry group CropLife International estimated that registration-related costs for a new active ingredient more than doubled between 1995 and 2014 globally. It also found that the introduction of active ingredients for herbicides peaked in the 1990s, with nearly 60 new products that decade. Fewer than 20 ingredients were introduced in the 2010s.

Steve Duke, retired USDA plant physiologist

- 1) Roundup Ready crops
- 2) Increased regulatory costs
- 3) Industry consolidation

CropLife International study

- 1) Registration costs doubled 1995-2014
- 2) New herbicide active ingredients peaked 1990s (nearly 60); fewer than 20 2000-2010

EPA Issues Emergency Order to Stop Use of Pesticide Dacthal to Address Serious Health Risk

WASHINGTON – Today, Aug. 6, the U.S. Environmental Protection Agency is announcing the emergency suspension of all registrations of the pesticide dimethyl tetrachloroterephthalate (DCPA or Dacthal) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). This is the first time in almost 40 years EPA has taken this type of emergency action, following several years of unprecedented efforts by the Biden-Harris Administration to require the submission of long-overdue data and then assess and address the risk this pesticide poses.

EPA has taken this action because unborn babies whose pregnant mothers are exposed to DCPA, sometimes without even knowing the exposure has occurred, could experience changes to fetal thyroid hormone levels, and these changes are generally linked to low birth weight, impaired brain development, decreased IQ, and impaired motor skills later in life, some of which may be irreversible.

“DCPA is so dangerous that it needs to be removed from the market immediately,” **said Assistant Administrator for the Office of Chemical Safety and Pollution Prevention Michal Freedhoff.** “It’s EPA’s job to protect people from exposure to dangerous chemicals. In this case, pregnant women who may never even know they were exposed could give birth to babies that experience irreversible lifelong health problems. That’s why for the first time in almost 40 years, EPA is using its emergency suspension authority to stop the use of a pesticide.”

Certificate of Completion

This is to certify that

John Byrd

has completed the course

How To Safely Use and Handle Paraquat-Containing Products: 2022-25
on November 6, 2024



This certificate expires 3 years from the completion date of your course
Paraquat-specific training is required by all paraquat products

Non-certified persons working under the supervision of a certified applicator **are prohibited**
from using paraquat (including mixing, loading, applying, and other pesticide-related activities)

Valid 3 years

Paraquat 22-25
Campus Extension

\$25.00 fee

NovaGraz

~~ProClover~~ (2,4-D choline + Rinskor [florpyrauxifen-benzyl]) for broadleaf weed control in established WHITE clover **and** annual lespedeza.

New NovaGraz™ Herbicide Controls Pasture Weeds, Preserves Valuable White Clover and More
New Pasture Herbicide From Corteva Agriscience Meets Long-Standing Need for Producers

INDIANAPOLIS, Oct. 24, 2024 — Corteva Agriscience announced that the U.S. Environmental Protection Agency (EPA) has registered NovaGraz™ herbicide.¹ As the only pasture herbicide to give cattle producers broad-spectrum weed control while still preserving white clover and annual lespedeza², NovaGraz meets a long-standing need.

“Many producers rely on white clover and annual lespedeza in their pastures to improve forage quality for grazing and haying and for the legumes’ nitrogen-fixing capability to enhance soil fertility and health,” said Morgan Bohlander, portfolio marketing lead, U.S. Range & Pasture, Corteva Agriscience. “Without effective broadleaf weed control, the harm that weeds cause to forage production and quality can outweigh the benefits of these legumes.”

NovaGraz™
HERBICIDE

Eliminating weeds in white clover pastures can increase the amount of forage produced and improves utilization. In research trials where NovaGraz herbicide controlled broadleaf weeds and preserved white clover, pastures produced 21% more total forage, compared with untreated sites.³

“NovaGraz herbicide allows producers to eliminate undesirable, low-value weeds without also removing white clover,” said Sam Ingram, Ph.D., field scientist, Corteva Agriscience. Extensive research shows that by preserving white clover and annual lespedeza in tall fescue pastures, producers can mitigate fescue toxicosis, which can increase stocker cattle average gains by up to 50%.

“Anytime those gains come from grazed forages, it benefits the livestock producer’s bottom line,” Ingram said.

Multiple years of testing show NovaGraz herbicide, powered by Rinskor® active, provides broad-spectrum control of important broadleaf species, including ironweed, cocklebur, wild carrot, buttercup, biennial thistles, ragweeds, plantain, woolly croton, poison hemlock and many others.

In addition, NovaGraz herbicide:

- Controls a broad spectrum of weeds in pastures, rangeland, hayfields and Conservation Reserve Program (CRP) acres.
- Carries no grazing restrictions for beef cattle and only minimal haying and manure restrictions after application.
- Provides effective, broad-spectrum weed control where a non-residual option is desired for maximum flexibility in hay marketing and crop rotation.
- Provides high-quality, diverse grazing, which can increase per-acre beef production.

Broadleaf Weeds Controlled

This product can be applied at rates between 24 to 48 fluid ounces (0.008375-0.016875 lb a.i. floryprauxifen benzyl and 0.5 - 1.0 lb a.e. 2,4-D) per acre when weeds are actively growing; applications in this rate range are most effective when conditions are favorable for plant growth.

Weeds Controlled			
Common Name	Scientific Name	Life Cycle	Plant Family
amaranth, spiny ¹	<i>Amaranthus spinosus</i>	annual	Amaranthaceae
burdock, common	<i>Arctium minus</i>	biennial	Asteraceae
buttercup, hairy	<i>Ranunculus sardous</i>	perennial	Ranunculaceae
buttercup, tall	<i>Ranunculus acris</i>	perennial	Ranunculaceae
caraway, common	<i>Carum carvi</i>	biennial/perennial	Apiaceae
carrot, wild	<i>Daucus carota</i>	biennial	Apiaceae
chickweed, common	<i>Stellaria media</i>	annual	Caryophyllaceae
chicory	<i>Cichorium intybus</i>	perennial	Asteraceae
clover, red ²	<i>Trifolium pratense</i>	perennial	Fabaceae
cocklebur	<i>Xanthium strumarium</i>	annual	Asteraceae
croton, woolly	<i>Croton capitatus</i>	annual	Euphorbiaceae
dandelion, common	<i>Taraxacum officinale</i>	perennial	Asteraceae
fleabane, annual	<i>Erigeron annuus</i>	annual	Asteraceae
goldenrod, Canada ¹	<i>Solidago canadensis</i>	perennial	Asteraceae
goldenrod, Missouri ¹	<i>Solidago missouriensis</i>	perennial	Asteraceae
gumweed, curlycup	<i>Grindelia squarrosa</i>	biennial	Asteraceae
henbit	<i>Lamium amplexicaule</i>	annual/biennial	Lamiaceae
horseweed	<i>Conyza canadensis</i>	annual	Asteraceae
ironweed	<i>Vernonia spp.</i>	perennial	Asteraceae
knapweed, brown	<i>Centaurea jacea</i>	perennial	Asteraceae
lettuce, prickly	<i>Lactuca serriola</i>	annual	Asteraceae
marshelder, annual ¹	<i>Iva annua</i>	annual	Asteraceae
mayweed, scentless	<i>Tripleurospermum perforate</i>	annual	Asteraceae
mayweed, stinking	<i>Anthemis cotula</i>	annual	Asteraceae
parsnip, wild	<i>Pastinaca sativa</i>	biennial	Apiaceae
pepperweed, Virginia	<i>Lepidium virginicum</i>	annual/biennial	Brassicaceae
plantain, broadleaf	<i>Plantago major</i>	perennial	Plantaginaceae
plantain, buckhorn	<i>Plantago lanceolata</i>	perennial	Plantaginaceae
poison hemlock	<i>Conium maculatum</i>	biennial	Apiaceae
purple deadnettle	<i>Lamium purpureum</i>	annual	Lamiaceae
ragweed, common	<i>Ambrosia artemisiifolia</i>	annual	Asteraceae
ragweed, western	<i>Ambrosia psilostachya</i>	perennial	Asteraceae
Smartweed ¹	<i>Polygonum</i>	annual	Polygonaceae
sneezeweed, bitter	<i>Helenium amarum</i>	annual	Asteraceae
thistle, bull	<i>Cirsium vulgare</i>	biennial	Asteraceae
thistle, musk	<i>Carduus nutans</i>	biennial	Asteraceae
thistle, plumeless	<i>Carduus acanthoides</i>	biennial	Asteraceae
velvetleaf	<i>Abutilon theophrasti</i>	annual	Malvaceae
vervain, blue	<i>Verbena hastata</i>	perennial	Asteraceae
wingstem	<i>Verbesina alternifolia</i>	perennial	Asteraceae

¹May require application to small weeds, repeat applications, and/or use of higher specified rates of this product.

²Red clover is partially controlled.

24 fl oz/A +
1% MSO

Do not exceed
48 fl oz/A/yr



Jury orders Monsanto to pay nearly \$1 billion to schoolchildren and parents

Story by Susan Elizabeth Turek • 4h



A group of seven former students and parent volunteers are reportedly set to receive a payout of nearly \$1 billion after they were reportedly exposed to and sickened by toxic chemicals leaking from light fixtures.

Reuters reported Dec. 18 that a Washington state jury found that Monsanto, a chemical firm owned by Bayer, was "liable" for selling a product that contained unsafe chemicals to the Sky Valley Education Center in Monroe.

Beck's Hybrids Seed Company - Beck's Hybrids

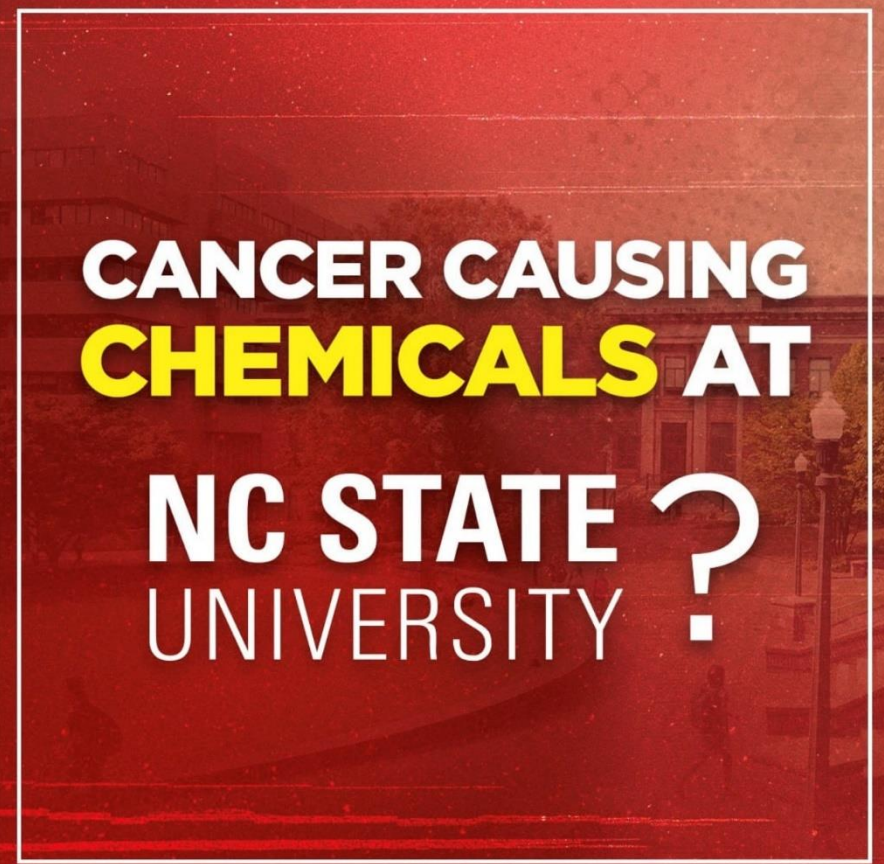
Ad Beck's Hybrids



The verdict also states that the company failed to issue the appropriate warnings about the chemicals, known as polychlorinated biphenyls (PCBs). The case resulted in a \$857 million verdict.

While Monsanto intends to appeal the decision, arguing that the school failed to upgrade its light fixtures, it had already been ordered to pay millions in other verdicts related to PCBs at the center.

Attorneys are looking to speak to employees of North Carolina State University who have spent considerable time at Poe Hall to help take action against manufacturer Monsanto for reportedly knowingly installing fixtures with high levels of cancer-causing chemicals known as PCBs. If you or a loved one were exposed by spending time at Poe Hall, learn more about your legal options.



Learn more

Monsanto, PCBs, and the creation of a "world-wide ecological problem"

Gerald Markowitz et al. J Public Health Policy. 2018 Nov.

Show details



Cite



Abstract

For the past three decades, we have written on the history of occupational and environmental health, authoring books and articles on lead poisoning, silicosis, asbestosis, and angiosarcoma of the liver, among other diseases. One book, Deceit and Denial, focused specifically on the chemical and lead industries. Because of the rarity of historians who study this history, we have been asked to testify on behalf of workers who allege harm from these industrial materials and by state, county, and local governments who seek redress for environmental damages and funds to prevent future harm to children. In about 2010, we began testifying in law suits brought by individuals who claimed that they had suffered from cancers, specifically non-Hodgkin's lymphoma, because of polychlorinated biphenyls (PCBs) in their bodies. At that time, we wrote a Report to the Court about industry knowledge of the dangers of PCBs to workers and the environment. More recently, we have been approached by attorneys representing government agencies on the West Coast of the United States

Abstract



agencies on the West Coast of the United States which are seeking funds to abate PCB pollution in their ports, bays, and waterways. The focus of these lawsuits is the Monsanto Corporation, the sole producer of PCBs in the United States from the 1930s through 1977. Through these law suits, an enormous trove of previously private Monsanto reports, papers, memos, letters, and studies have been made available to us and this paper is the result of our examination of these hundreds of thousands of pages. The documents from this collection (with the exception of privileged materials that Monsanto has not made public, and upon which we have not relied) are available on www.ToxicDocs.org, the website we have developed with Professor Merlin Chowkwanyun of Columbia's Mailman School of Public Health. (Almost all of the references that are from this collection can be accessed by readers by clicking on the reference hyperlink.) This monograph is adapted from a report to the court that was originally produced for litigation on behalf of plaintiffs in PCB lawsuits. We are grateful to the Journal of Public Health Policy for publishing this detailed examination of these documents and we hope it will stimulate further research into this important, and now public, archive of industry records.

Keywords: Cancer; Chemicals; Industry; Monsanto; PCBs; Pollution; Public health.

[PubMed Disclaimer](#)

BBC

Home News Sport Business Innovation Culture Travel Earth Video Live

Bayer Monsanto: PCB maker ordered to pay \$857m for toxic leaks

19 December 2023

Share

Suranjana Tewari
BBC News



Monsanto is already facing a large legal bill over its glyphosate-based weed killer Roundup

I wanna be like Barbie...
that b★tch has everything



4RUNNER



BULLDOG PACKAGE STORE

