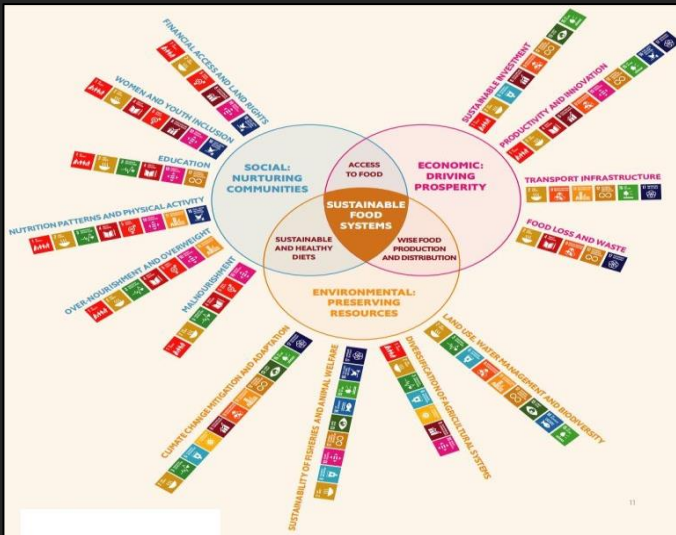
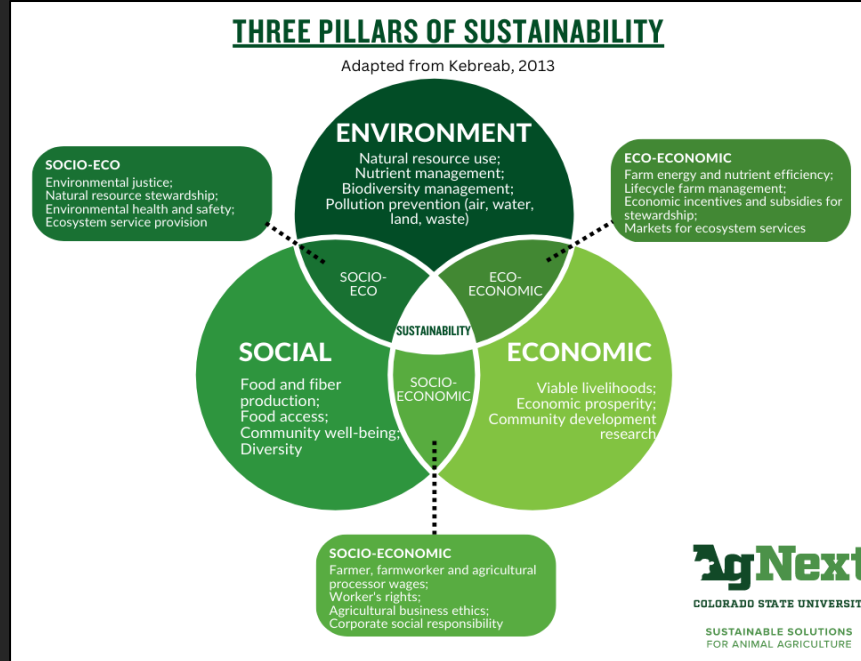


Sustainability Objectives



Taylor Randell Singleton
Extension Sustainability Specialist

Sustainability



Sustainability

In my mind, this means:

To pursue sustainability is to understand and anticipate how farms, cropping systems, and production practices will need to change in the years to come, and prepare for these changes ahead of time

- Sustainability is to ensure:
 1. Economical feasibility
 2. Flexibility and adaptability
 3. Environmental soundness



Georgia Agriculture Sustainability



Productive Farmland & Profitable Products



Healthy Land/Water for Habitat & Other Ecological Services



Generational Farms Continue to Steward the Land

Ag Sustainability

- Incredible opportunity to support this need for GA agriculture
 - Interdisciplinary, whole-farm approach
 - Sustainable cropping systems
 - Agronomic + specialty crops
 - Emphasis in pesticide stewardship
- Understand practices that support the *farm* and the *environment*:
 - Cultural/Mechanical/Chemical



Traditional Sustainability

- Foundational concepts:
 - Cover crops
 - Erosion mitigation
 - Pollinator protection/habitat
 - Protecting natural resources (*minimize inputs where applicable*)

***Advance sustainable
cropping systems +
farm health***



Cover Crops

- Numerous environmental/economic benefits:



Weed Suppression



Soil Health/Quality



Water Quality



Soil Fertility

- MANY options depending on your goals
- Location, equipment, resources, cropping systems, etc.
- Acres vary in GA....not a fit for everyone BUT need to understand barriers

Cover Crops

- What species to plant?
 - Benefits/value of each
- When to plant/terminate?
 - Pros/Cons
- Value of cover crops to farm:
 - Economic/Environmental
 - Pesticide stewardship??
 - Mitigation points for pesticide use



Erosion/Runoff Mitigation

- Numerous environmental/ecological benefits:



Conservation Tillage



Grassed Waterways



Filter/Prairie Strips



Terrace/Contours

- Landscape, equipment, resources, cropping system, etc.
- Support overall health of the land and the farm
- Need to understand barriers to implementation

Erosion/Runoff Mitigation

- What practices are suitable?
 - Service needed
 - Landscape/Topography
- How to install?
 - Equipment
 - Resources
- Creative ways to implement in GA?
 - Public perception
 - Environmental stewardship
 - POINTS on pesticide mitigation menu



Proposed “Mitigation Menu”

Table 6-9. Potential Mitigation Measures and Efficacy Points

Mitigation Menu Item ¹	Measures that qualify ²	Efficacy Points
Field Characteristics (one field may rely on multiple field characteristics if they are applicable)		
Application area is to the west of the Interstate-35 and east of U.S. Route 395 ³	Not applicable	1
Application area has predominantly sand, loamy sand, or sandy loam soil without a restrictive layer that impedes the movement of water through soil. See USDA’s Web Soil Survey tool to determine soil texture: https://websoilsurvey.nrcs.usda.gov/app/ .	Not applicable	1
The application area has a slope of less than 2%	Naturally low slope or flat fields/ Flat laser leveled	1
Application Parameters		
The maximum single application rate (lbs active ingredient/acre/application) allowed on the label for the specific crop is reduced or only a partial area in the acre is treated. Considered on a per application basis. The percent reduction is calculated as the applied lbs active ingredient applied per acre divided by the maximum single application rate in lbs active ingredient per acre allowed on the label for the crop and application equipment. If only a spot or portion of the field is treated, the reduction in the application over the entire field is considered in the calculation provided the field is draining to the same area.	Reduced application rate, partial treatment of the field, banded application, spot treatment, precision agriculture or sprayers	Percent reduction = Applied application rate in lbs a.i./A divided by the maximum application rate allowed on the label for the crop in lbs a.i./A 90% reduction; 9 80% reduction; 8 70% reduction; 7 60% reduction; 6 50% reduction; 5 40% reduction; 4 30% reduction; 3 20% reduction; 2 10% reduction; 1
Follow all label requirements related to application rate including not making applications at a lower rate than the minimum required on the label to avoid resistance issues and to avoid no control of the weed/pest.		

Mitigation Menu Item ¹	Measures that qualify ²	Efficacy Points
Soil incorporation within a few hours of application. If soil incorporation is required on the label for the crop where the	Watering-in or via discing before runoff producing rain event	2
In-field Management Mitigation Measures⁴		
Contour farming	Contour farming, contour tillage	2
	Contour buffer strips, contour strip cropping, prairie strip, alley cropping	3
Cover crop/continuous cropping	Cover crop, double cropping, relay cropping	1
Grassed waterway	Grassed waterway	1
In-field vegetative filter strip (not occurring on a contoured field)	Inter-row vegetated strips, strip cropping, alley cropping, strip	3
Irrigation water management	Not applicable	1
Mulch amendment with natural materials	Mulching	3
Residue tillage management	No till, reduced till	2
Terrace farming	Terrace farming, terracing, field terracing	2
Adjacent to the Field⁴		
Riparian area	Riparian forest buffer, riparian herbaceous cover	3
Vegetated ditch	Vegetated ditch	1
30-foot Vegetative filter strips – adjacent to the field	Vegetated filter strip, field border, vegetative barrier	2
Other Mitigation Measures		
Water retention systems	Constructed wetland, irrigation and drainage tailwater recovery, retention pond, sediment basins	2
Mitigation measures from multiple categories (i.e., in-field, adjacent to the field, or water retention systems) are utilized ⁵	See options in categories above.	1

¹ Proposed mitigation measure descriptions specific to pesticides were published with the ESA Workplan update:

Pollinator Protection/Habitat

- Numerous environmental/ecological benefits:



Establish Habitat



Maintain Habitat



Support Pollinators



Value to System

- Lots of challenges = Need to understand how to implement

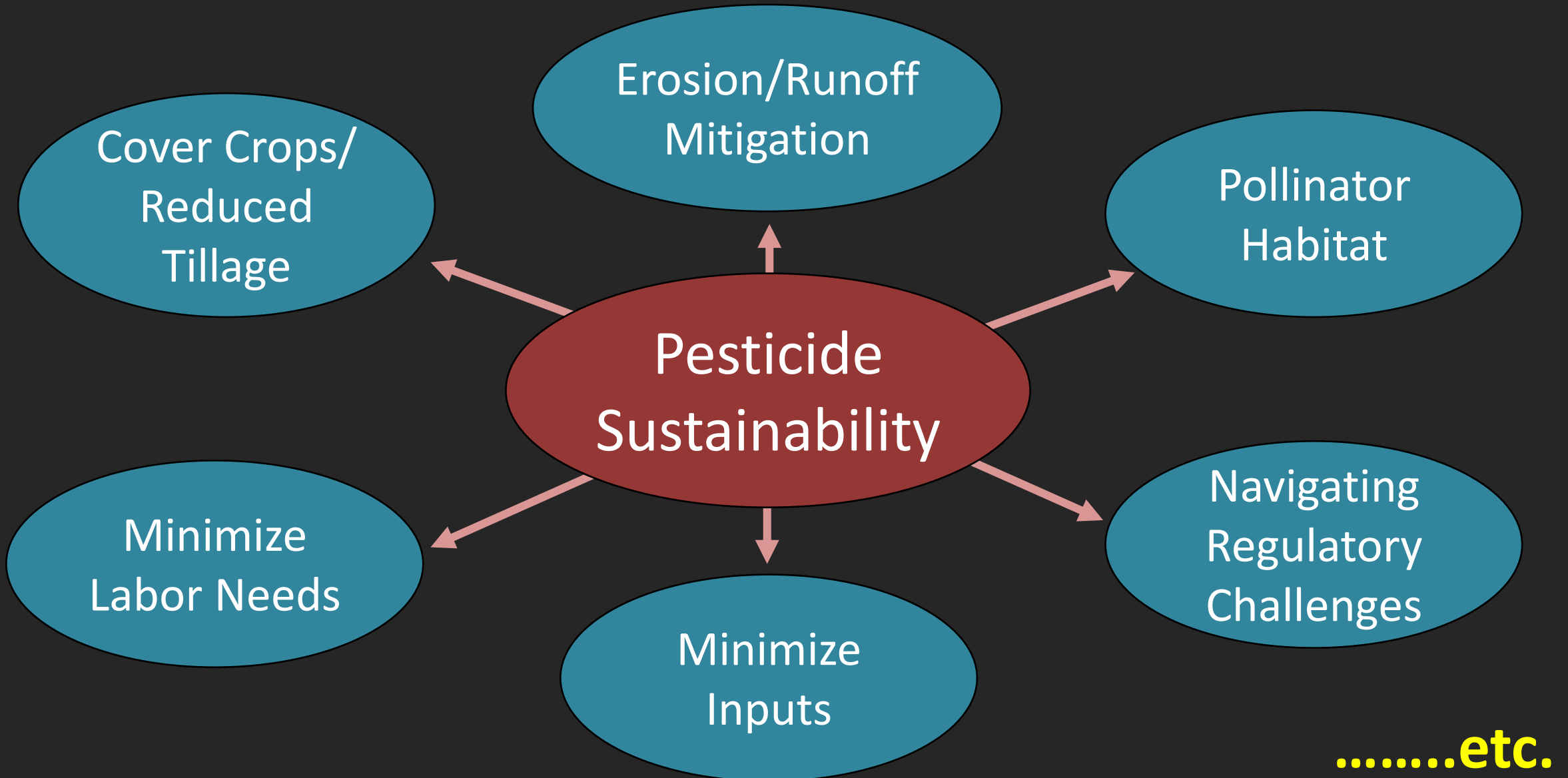
**IF WE DON'T SUPPORT WILDLIFE HABITAT, WE CANNOT MAKE
ADVANCES IN FIGHT TO PERSERVE PESTICIDE USE !!!!**

Pollinator Protection/Habitat

- 2024 = year 3 of research
- Lots to learn.....
- How to establish on farm?
 - Mix of species
 - Technique/Timing
 - Weed control
 - Cost-share programs?
- How to maintain year after year?
- Combine with practices from Mitigation menu??



Overall Farm Sustainability



Pesticide Stewardship

- Agriculture sustainability currently relies heavily on pesticide use:
 - *Economical and environmental* standpoint
- Without the ability to use pesticides:
 - Crop yield loss from weed competition?
 - Burndown cover crops before strip-tillage?
 - Attractive product for the consumer?
 - Capitalize farm investments?



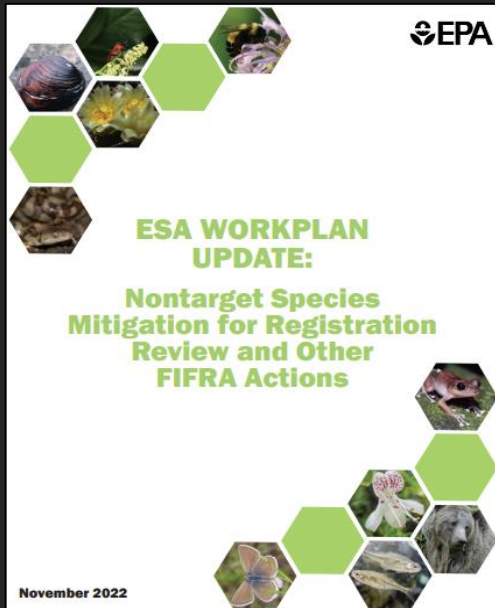
To Preserve Pesticide Use...

- Practices that support the farm and maintain environmental quality:
 - Protect utility of pesticide product (i.e. resistance mgmt.)
 - Environmentally focused practices
 - Navigate regulatory challenges



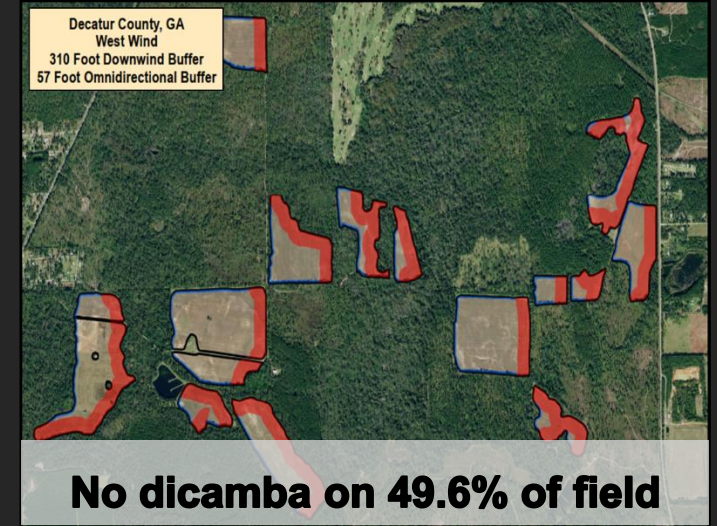
Challenging Times Ahead

- Pesticides (sustainability) face enormous hurdles
 - Regulatory restrictions (ESA, FIFRA, etc.)
 - Pesticide resistance
 - On-farm impacts *today* – adapt on the GO!



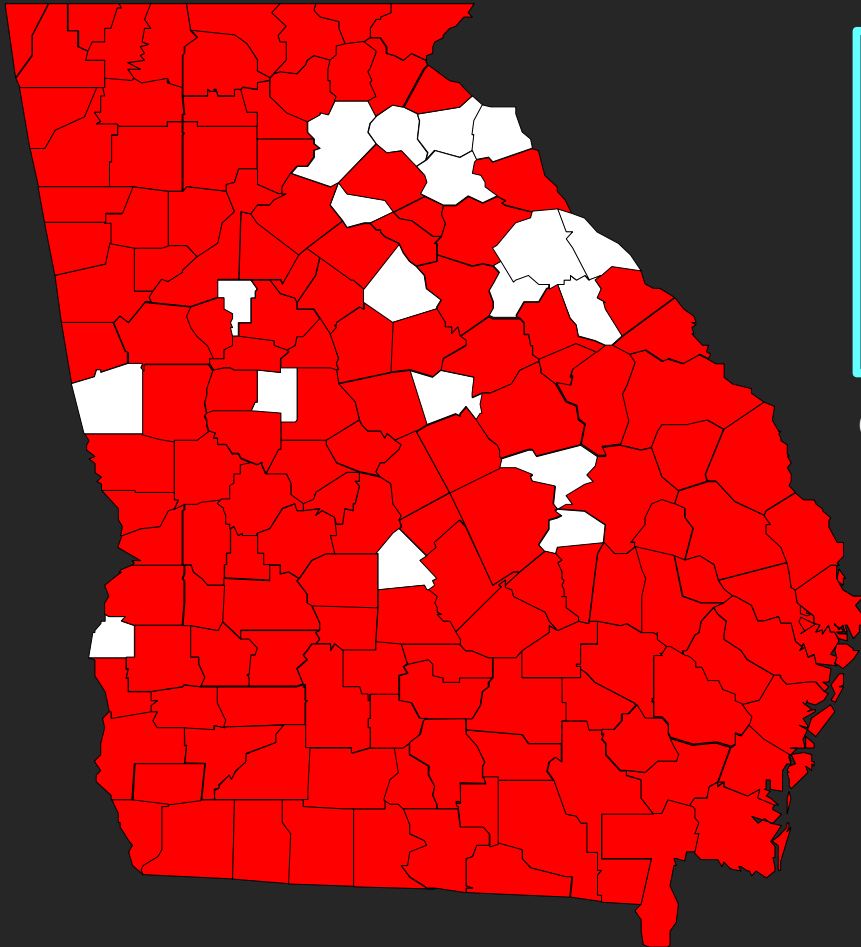
Challenging Times Ahead

- GA impacts *thus far*:
 - Pesticide-use buffers
 - Product restrictions in the state
 - Widespread resistance
- GA impacts *soon*:
 - Mitigation Measures Menu



Navigating regulatory challenges will influence sustainability!

Counties with Threatened and Endangered Species



140 out of 159 counties have threatened/ endangered species

Counties with threatened/ endangered species highlighted in red.

Plants:
30 species

Invertebrates:
23 species

Birds:
5 species

Reptiles/
Amphibians:
8 species

Fish:
7 species

Mammals:
4 species

Total: 78 species

Please fill out my survey!!!

- “Sustainability” can go a lot of different directions....
- Help me understand what is important to you and your growers
- You don't have to put your name on it (but you can if you want)
- Leave on table/put in box...THANK YOU!!!!



**Thank you!
Questions/Comments/
Thoughts???**

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