Field to Market®

Biodiversity Metric Revision Workshop

July 31, 2024

www.fieldtomarket.org

ANTI-TRUST STATEMENT

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In general, the types of discussion that must not occur are those that may suggest or imply agreements among competitors with respect to prices, terms of sale, discounts, credit, or any other such items that could impact prices.

Other topics that must be avoided include the allocation of customers, markets or territories, bid-rigging, and group boycotts or joint refusals to do business with others.

Field to Market will conduct this meeting in a manner that complies with all applicable antitrust laws.

If at any time during the course of the meeting a participant believes that a topic prohibited under the antitrust laws is being discussed, or is about to be discussed, they should advise the facilitator and chair who will halt any further discussion.

Proposed Workshop Schedule

July 2024	August 2024	September 2024
• Background • Discuss indicators • Collect feedback	• Share summary of feedback • Biodiversity indicators we could use • Collect feedback	• Further discussion and refinement

Agenda – July 31

3:00 PM	Welcome and recognition of the organizations present
3:05 PM	• Purpose of the workshop • Background on the proposed Biodiversity Metric revision • Recap of the comments received
3:45 PM	Short break
3:50 PM	Biodiversity indicators, resource concerns, or metrics proposed by various frameworks – recording stops here
4:15 PM	Gathering feedback on unresolved issues – with Mural collab platform
4:55 PM	Wrap-up discussion, discuss next steps, action items, and dates

46 Organizations Registered for the Workshop

ADM	CTIC	MS State University	Sustainable Food Lab
AgSpire	Dairy	Nat Assoc of Wheat Growers	Target
Arkansas Farm Bureau	Ducks Unlimited	National Cotton Council	The Andersons, Inc.
Arva Intelligence	ESMC	NCGA	The Fertilizer Institute
Bartlett Co.	Farm Bureau	Nebraska	The Nature Conservancy
Bayer	FBN	Nutrien	Trace Genomics
Bunge	Growers Edge	PepsiCo	Ucrop.it
Cargill	Houston Engineering	Pheasants Forever	University of Arkansas
CIBO Technologies	IPM Institute	Pro Farm Group	University of California
Cornell University	Kellanova	Procter & Gamble	USA Rice
Corteva	Mars	Sand County Foundation	
Cotton, Inc.	Mosaic Co	Sounds Ag	

Expectations and Housekeeping

Let’s be respectful of each other. We can work together even if we have different views on biodiversity.

Let’s feel free to brainstorm and explore ideas.

We are here to find a consensus to move forward, even if the metrics we are going to propose are not perfect or don’t meet all expectations.

We’ll take notes without attribution to an individual or organization. We will stop the recording before the main discussion section.

Purpose of the Workshops

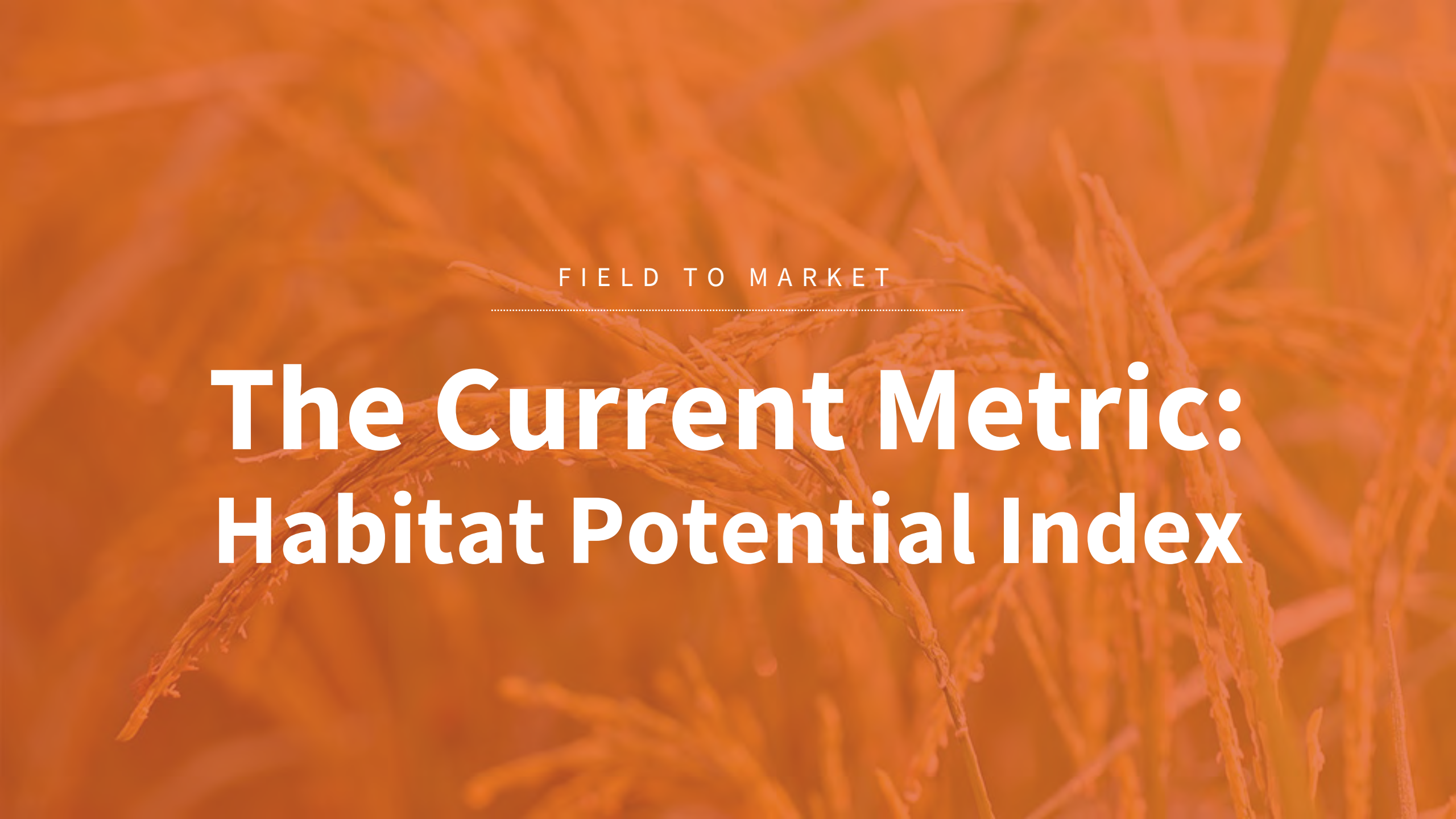
Learn about what we have done up to this point regarding the biodiversity metric revision

Learn from each other's perspectives

Reach a consensus on a biodiversity indicator we can use for the next three to five years

There is quite a bit of work happening regarding biodiversity in many standard-setter organizations

We might have to replace the model of choice within a short few years.



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The Current Metric: Habitat Potential Index

Background

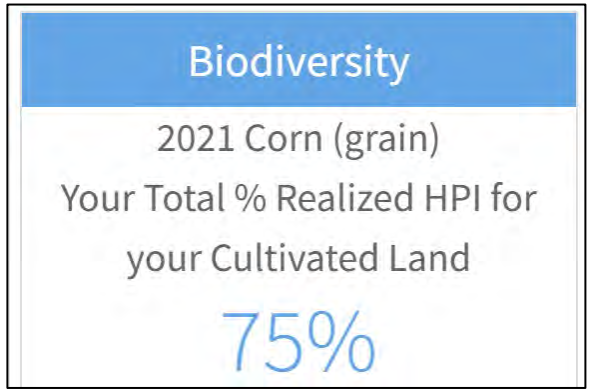
The HPI is a qualitative, proxy of the potential of a field to support habitats for biodiversity.

It considers:

- Residue cover
- Crop rotation
- Cover crop
- Nutrient management
- Pest management
- Water conservation
- Drainage water management
- Wildlife habitat enhancements

At Field to Market, the model of choice for a given metric can be revised or updated

The current model of choice for Biodiversity is the Habitat Potential Index (HPI)



Background

Field-level biodiversity metric 2018

Need brought forward by members from Brands and Retail

Task force convened from Standards Committee

Cross-sector Dialogue

Metrics Sub-committee

Special Report 2020

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Biodiversity Metric Proposed Revision

Objectives

- Support edge-of-field practices
- Account for the landscape context
- Address IPM limitations


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WILD Index

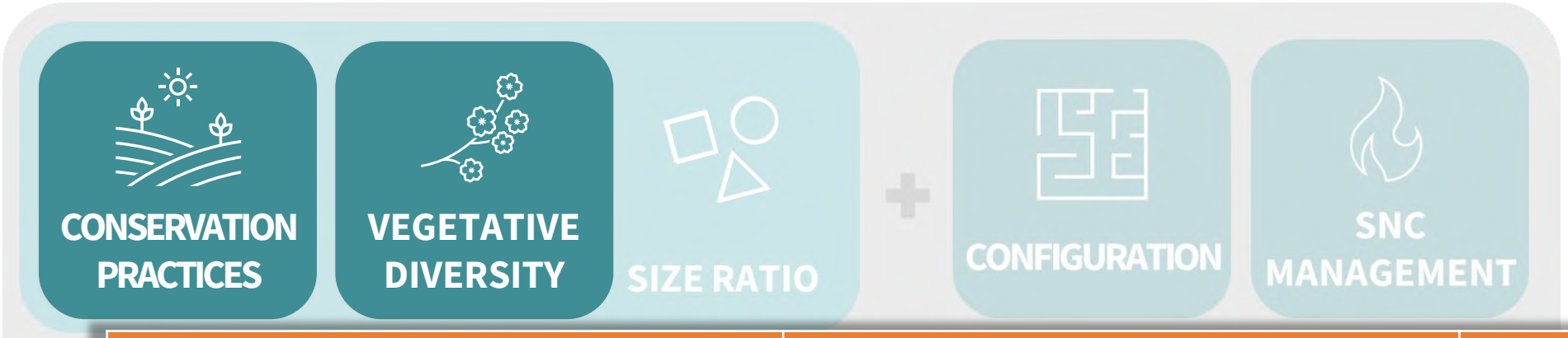
WILD Index

- What semi-natural cover is around/within the field?
  - How much is there?
  - Where is it?
  - How is it managed?
- What else is going on in the field in terms of cover crops and tillage?
- How does this field fit into the broad landscape context?
- How are pests managed in the field?
- How many crops are rotated through the field?
- Is this a new field recently converted from natural cover?

WILD Index


CONSERVATION PRACTICES
VEGETATIVE DIVERSITY
SIZE RATIO
CONFIGURATION
SEMI-NATURAL COVER MANAGEMENT
COVER CROP
TILLAGE
LANDSCAPE DIVERSITY
PEST MANAGEMENT
CROP ROTATION
CROPLAND CONVERSION

WILD Index



Cover Class	Cover Composition	Vegetation Diversity Score
Herbaceous	Predominately native grasses and forbs, with floral resources available throughout the growing season	5
Herbaceous	Predominately native grasses and forbs, with floral resources available for part of the growing season	4
Herbaceous	Predominately native grasses	3
Herbaceous	Monotypic native grasses	2
Herbaceous	Predominately introduced species	1
Herbaceous	Predominately invasive or noxious species	0

WILD Index


CONSERVATION PRACTICES
VEGETATIVE DIVERSITY
SIZE RATIO
CONFIGURATION
SNC MANAGEMENT
COVER CROP
TILLAGE
LANDSCAPE COMPLEXITY
PEST MANAGEMENT
CROP ROTATION
CROPLAND CONVERSION

SIZE RATIO

Size Ratio

SIZE RATIO

CONFIGURATION

Select Field

- Orange
- 130 acre
- Rice/soy

Size Ratio

SIZE RATIO

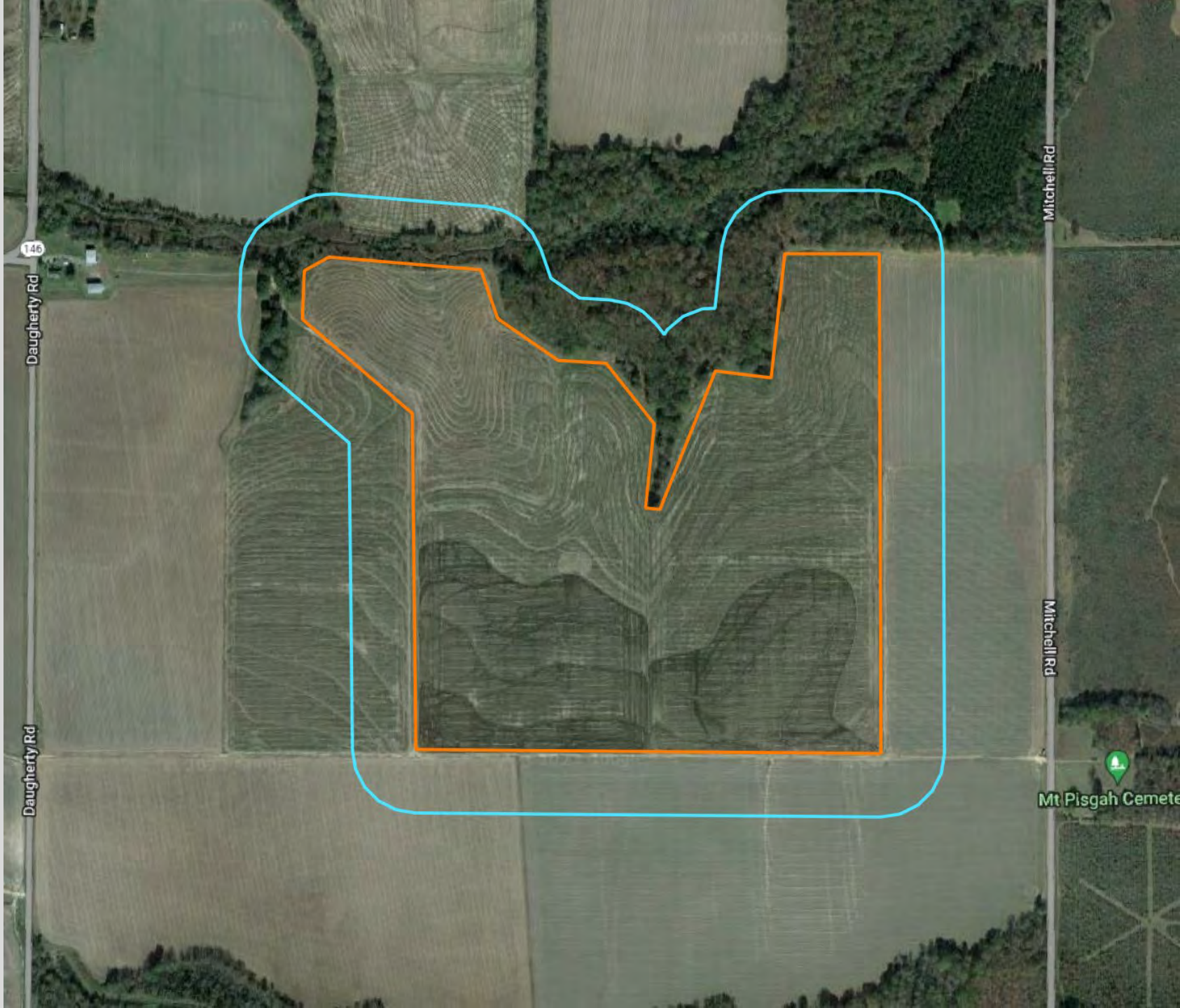
CONFIGURATION

Edge-of-field

Example:

- Riparian Forest Buffer (391)
- Rough guess: 10-15 acres

Size ratio = 15/130
Size multiplier = 1.11



Size Ratio

SIZE RATIO | CONFIGURATION

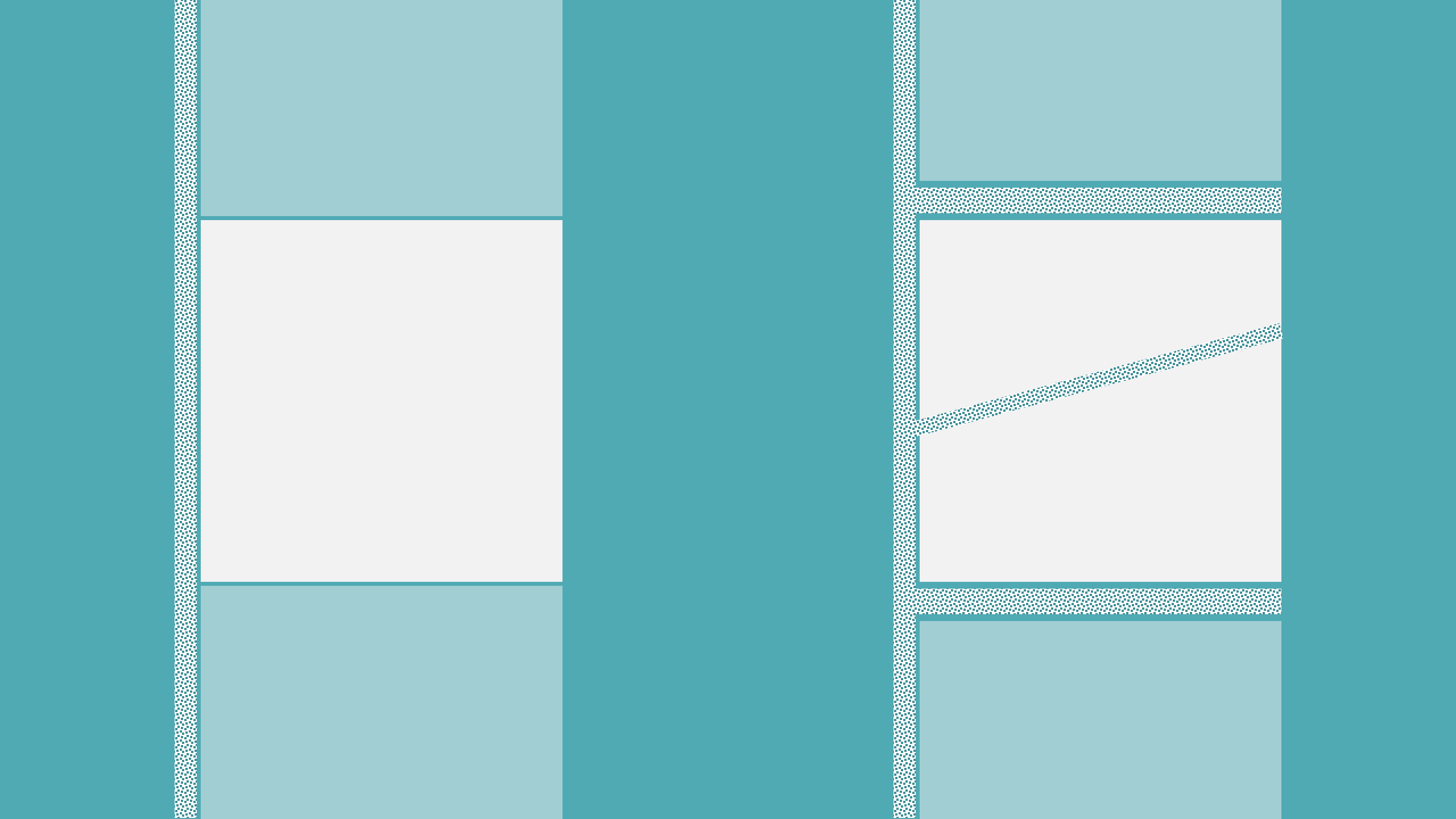
Within-Field

Example:
Rice field flooded to provide wintering waterfowl habitat

- CPS 646 Shallow Water Development and Management
- or CPS 449 Irrigation Water Management

Size ratio = 125/125 = 1
Size multiplier = 1 + 1 = 2.

CONFIGURATION



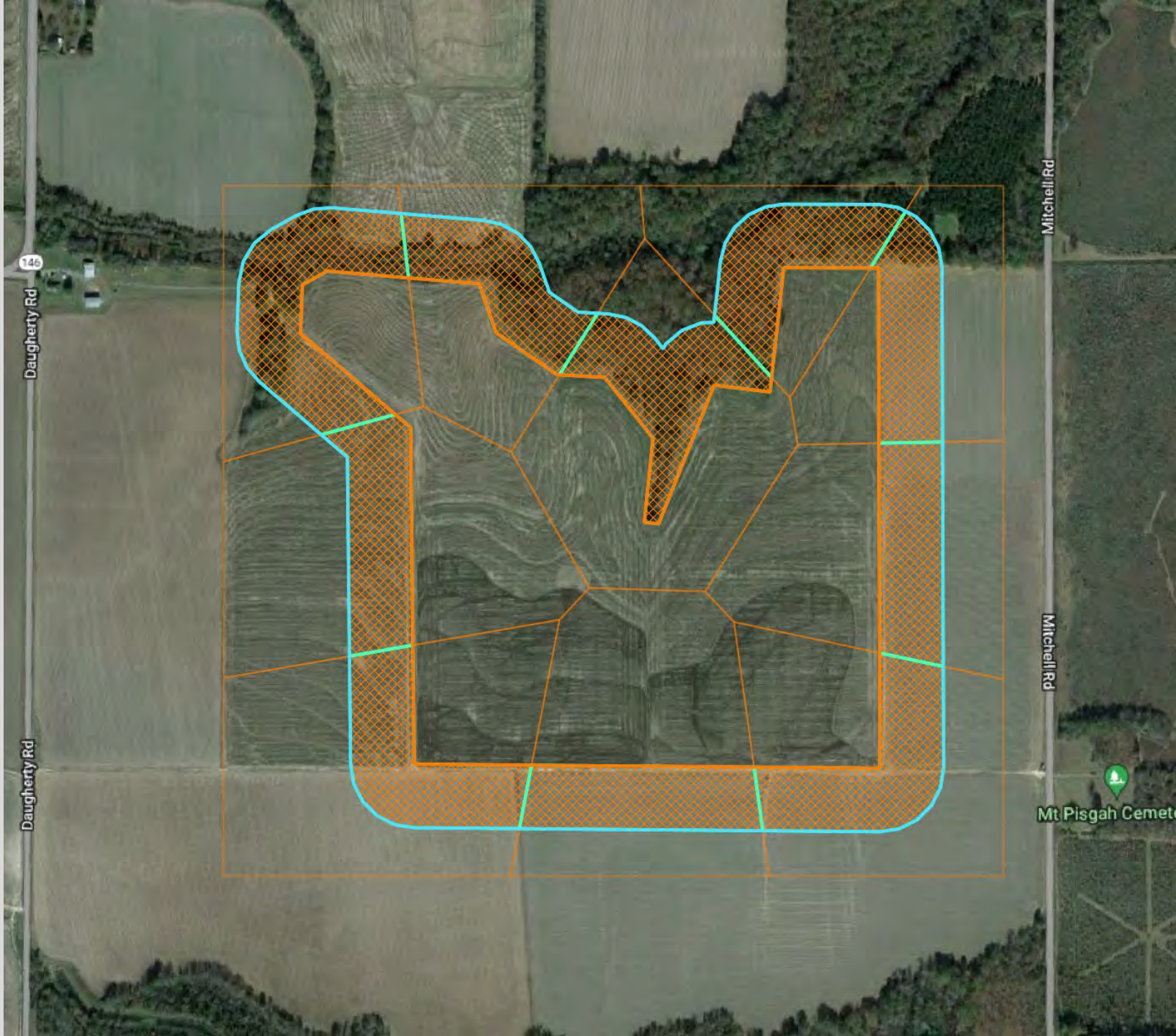
Configuration

SIZE RATIO

CONFIGURATION

Divide buffer into 10 equal parts

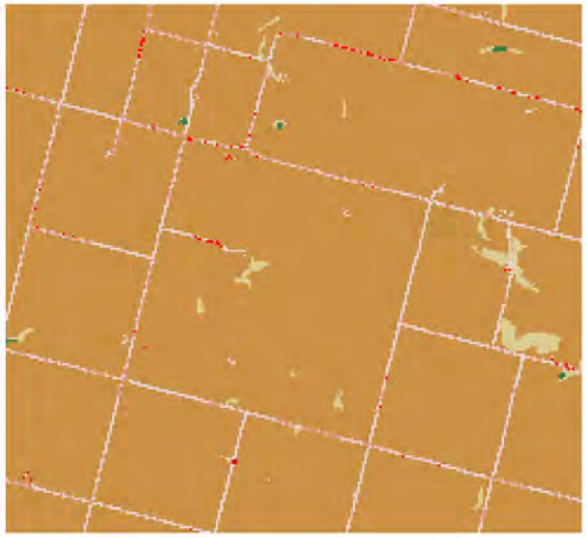
- “Eyeballing it, I’d say there is SNC in a third of the field buffer, and none within the field”




Landscape Complexity
Google Earth

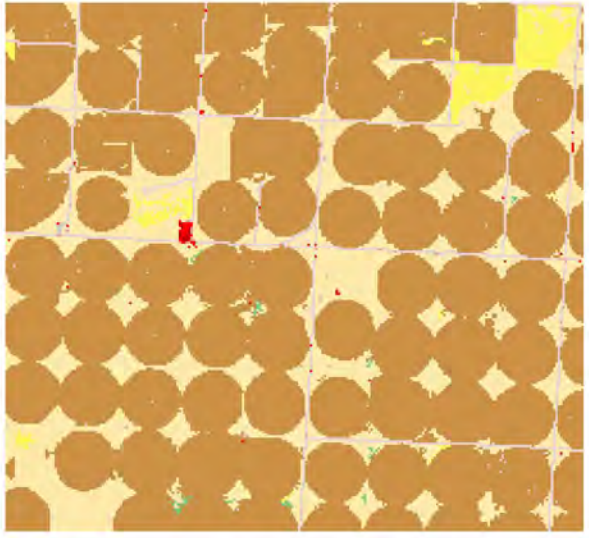
Landscape Complexity

Washington

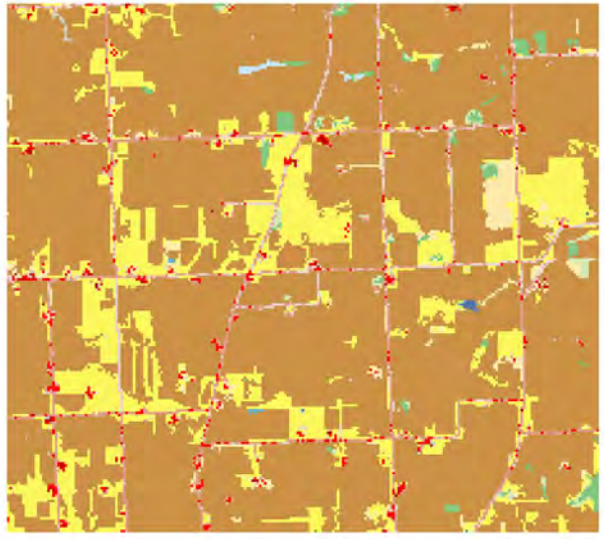


Georgia

Kansas



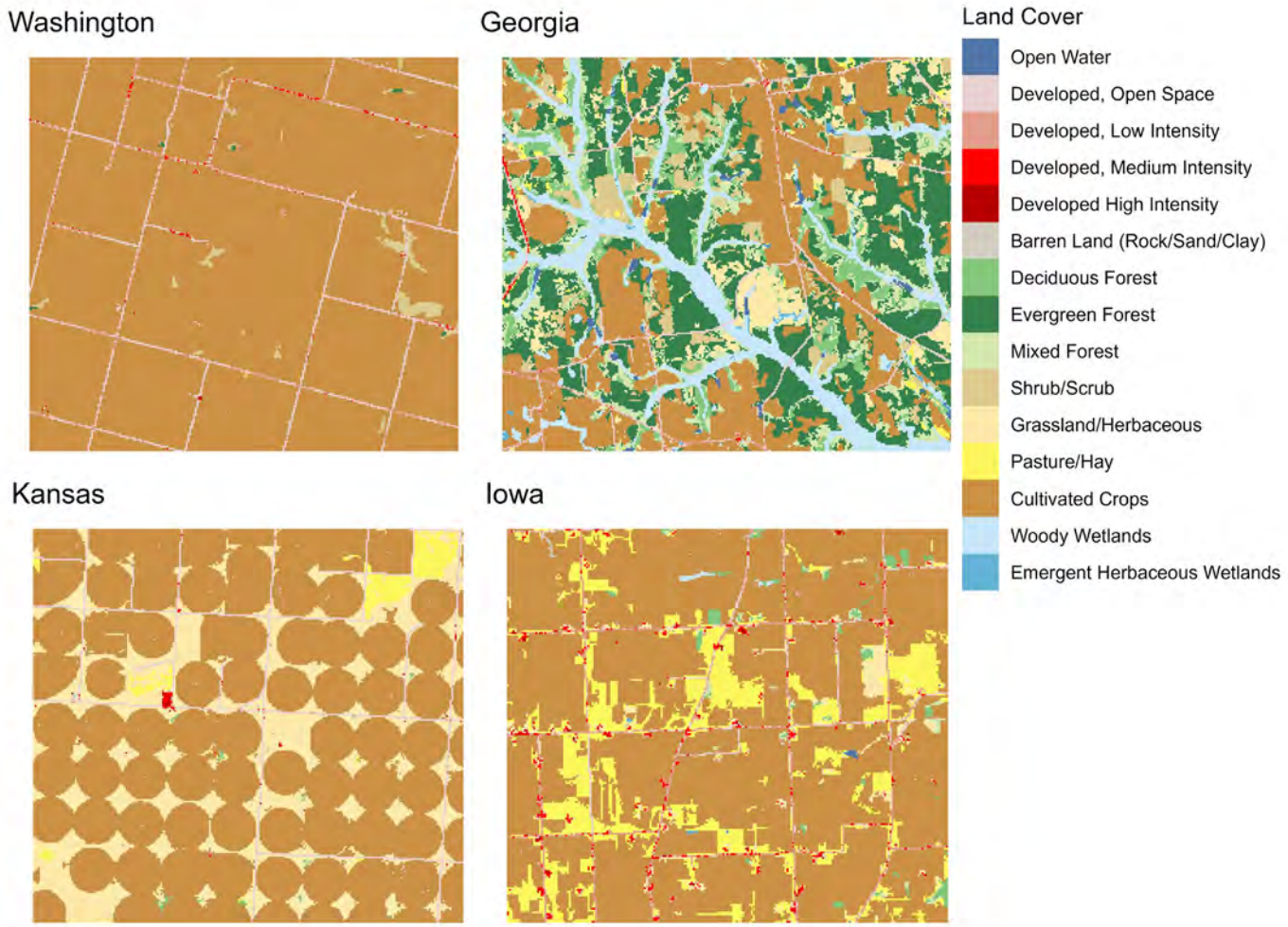
Iowa



Land Cover

- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Barren Land (Rock/Sand/Clay)
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Grassland/Herbaceous
- Pasture/Hay
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

Landscape Complexity

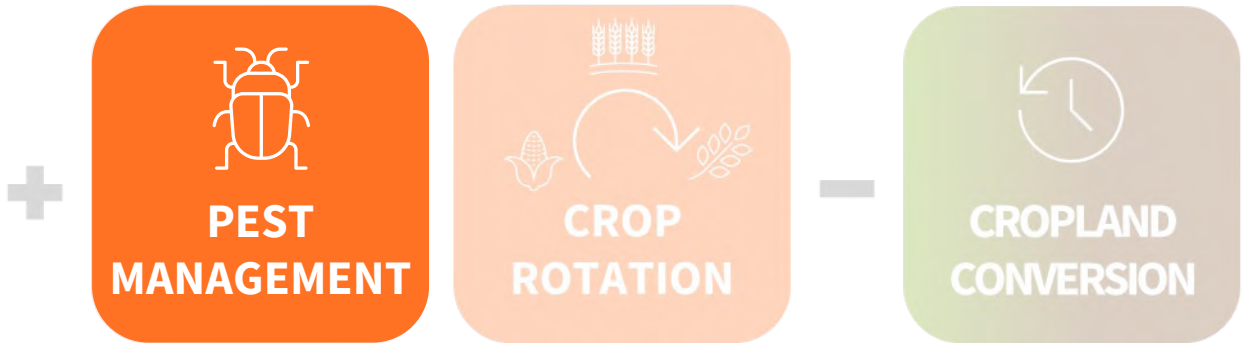


Level	Metric	Georgia	Wash	Kansas	Iowa
landscape	SHDI	1.91	0.28	0.76	0.88


Pest Management

WILD Index

Question	Options	Points
Which of these pest prevention and /avoidance techniques do you use? Select all that apply.	I use certified, weed-free seeds for my cash crop and cover crop seeds.	1
	I clean equipment between fields when there are known pests or pathogens present.	1
	I select pest-resistant seed varieties.	1
	I time planting and/or harvest operations to avoid pest pressures.	1
	None of these.	0



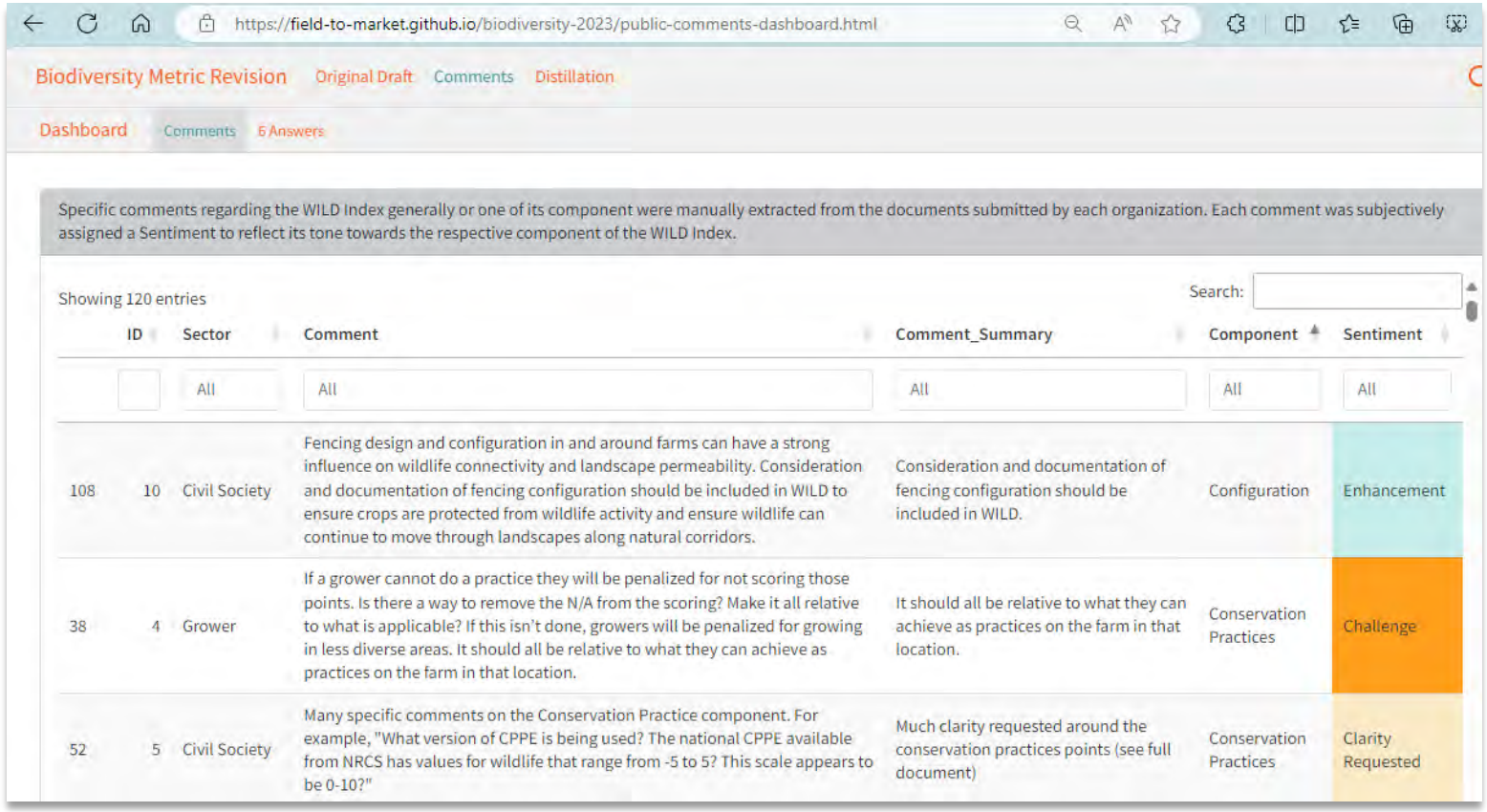
Comments Received About the Revision

Biodiversity Metric Revision

- The comment period ran from December 6, 2023 to January 31, 2024
- We received 120 comments from 11 organizations.
  - Some related organizations submitted similar content.
- We partitioned the comments and classified them according to their sentiment.

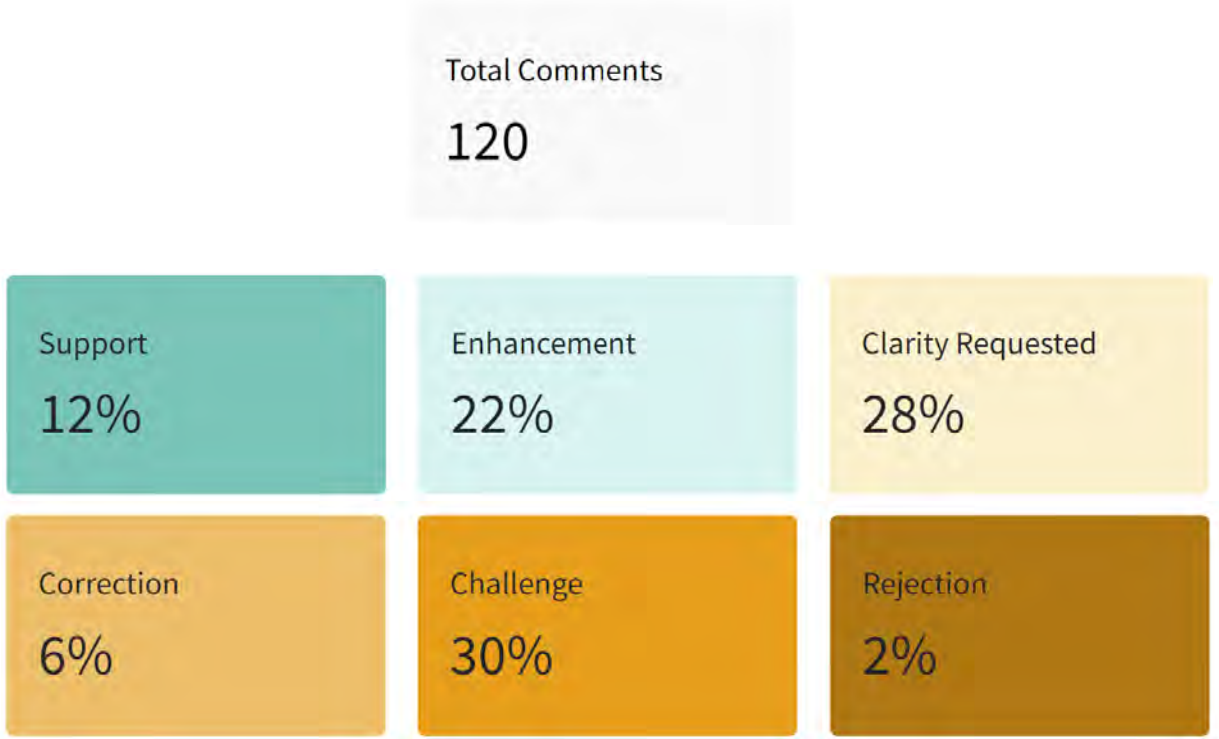
- All comments available in the dashboard:

field-to-market.github.io/biodiversity-2023/public-comments-dashboard



Biodiversity Metric Revision

- We need to decide which suggestions
  - we act upon
  - we reject for various reasons (feasibility, timeline, lack of evidence, etc.)
  - we defer to a future revision



General Feedback

In general, organizations acknowledged the WILD Index is most likely an improvement over the HPI. The components are correlated with biodiversity outcomes, and IPM is now featured more fully. The burden of data input seems reasonable.

Higher-level themes

1. Desire for index to be more relative or regional
2. Need for more analyses (sensitivity, scenarios, benchmarks) before we go to final version
3. How will this work programmatically? Are we sure we can rely on a practice-based index for biodiversity claims?
4. Can we align with other standards?

Landscape Diversity

Concerns arose around the incorporation of the Shannon Diversity Index.

[illegible]

[illegible]

Potential Solutions

Do away with it.

Compare the cropping landscape to a site-specific native landscape benchmark.

Cover Crops

The WILD Index and the Fieldprint Platform need to better account for cover crops and their management. Multiple organizations pointed out ways to improve the cover crop component or at least the documentation.

- Recognize winter crops like winter wheat as a source of vegetative cover
- Include summer cover crops
- Should we consider cover crop termination method?
- Clarify the following:
  - Define what is a *multi-species* cover crop
  - Do winter weeds count as a cover crop?
  - What constitutes a sufficient stand of biomass?
    - Should or should not get points for planting without results?

Idea

One argued that the goal of the *Cover Crop*, *Tillage*, and *Crop Rotation* components seemed to be awarding points for providing in-field, standing vegetation cover.

If so, they suggested the possibility of combining these in some way to **become a single component** that represents standing vegetation cover in the field area.

Conservation Practices

Multiple comments raised the desire for **site-specific biodiversity goals**, where the practices available are **relative to what a grower could achieve at their location**. Implementing a conservation practice in a place where it will have little effect should not result in points.

A temporal component of conservation practices suggests that **the establishment and benefit of a practice takes time to develop. This temporal component is missing** from the WILD Index.

On the technical side, we may need to clear up what practices are in our CPPE matrix, and clarify the version used and point scales. Could the CPPE be state/region specific?

Other feedback

Another issue raised was how many practices are focused on upland crops and **may not adequately represent the unique system that is rice production**. For instance, in-season wetting of rice fields is positive for biodiversity but is not yet listed in the edge-of-field or post-harvest practices.

Related to water development, one commenter pointed out that should aquatic environments be created, there should be accounting for the distance to water some chemical (with distance restrictions) are applied.

Cropland Conversion

This was the only component of the WILD Index that deducts points. The penalty is based on the biodiversity loss expected due to the recent conversion of natural lands to production. The comments received raised some important issues around how to standardize land conversion history.

- **How will the index handle cropland coming out of the Conservation Reserve Program?**

- What if the land was converted to cropland prior to the current grower? Will the current grower still be penalized?

- Does the index account for alfalfa/pasture/fallow being in the rotation? Will the conversion back to an annual crop be penalized?

Another view

While some argued that growers should not be penalized for converting CRP land or for conversion prior to their use, **some questioned if the land conversion penalty was steep enough** to truly reflect the high and long-term cost of conversion.

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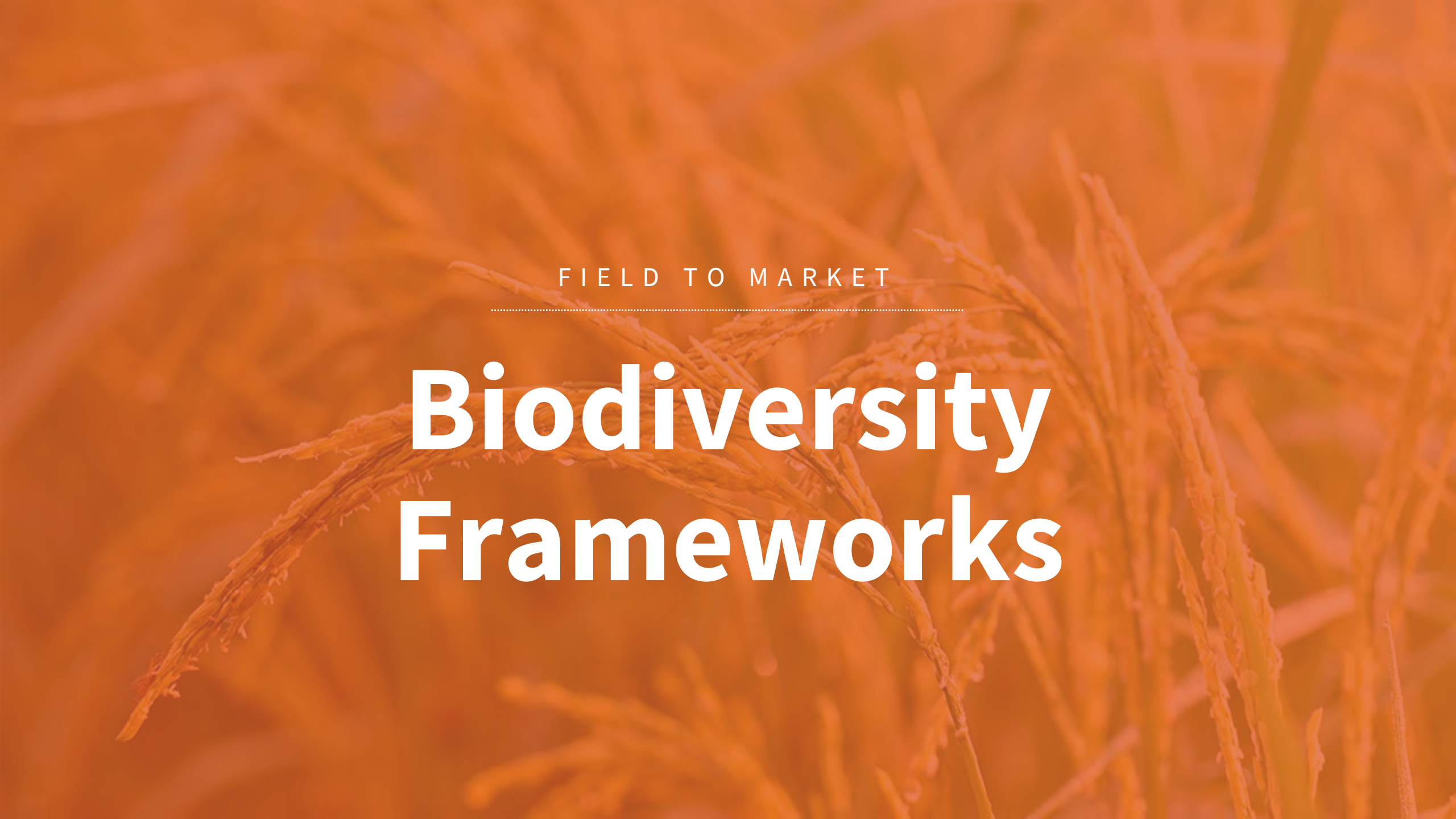
5-Minute Break



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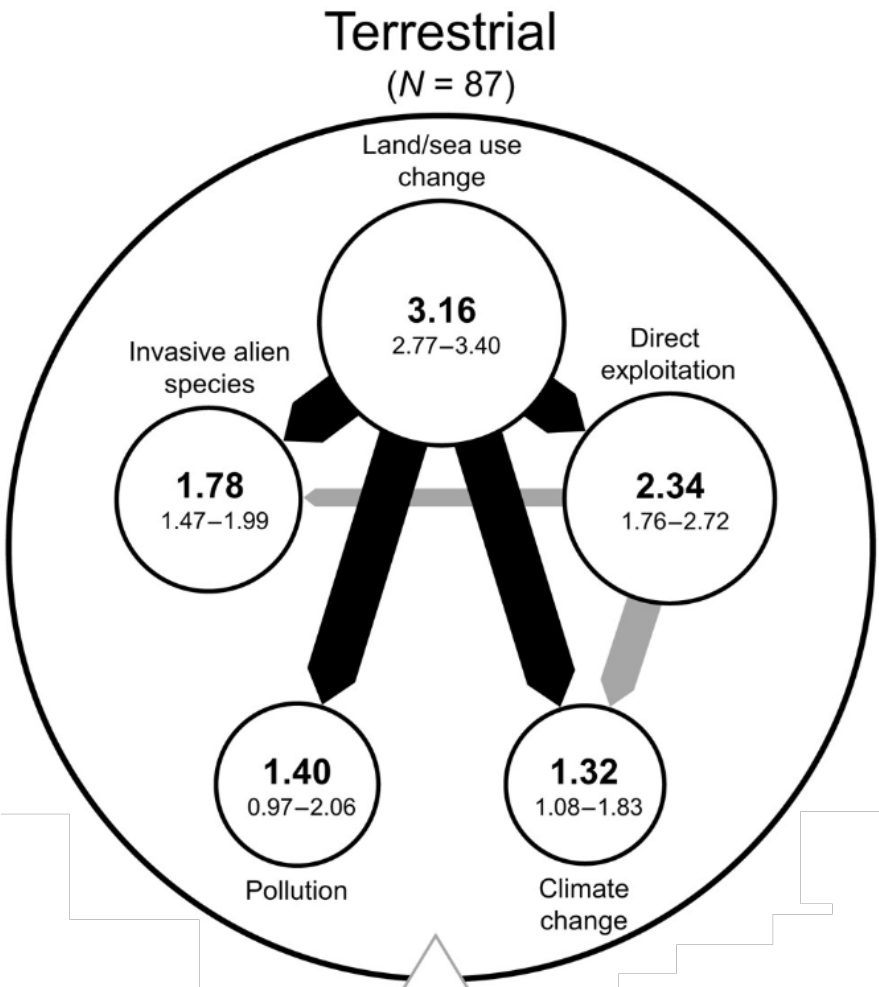
Biodiversity Frameworks

Primary Drivers of Biodiversity Losses

DOI: 10.1126/sciadv.abm9982

There is good agreement in the scientific literature that biodiversity losses in terrestrial ecosystems are primarily driven by the following:

- Land use change, which includes habitat loss (e.g., expanding cropland)
- Overexploitation of natural resources (e.g., overhunting)
- Invasive species
- Pollution
- Climate change



Science Based Targets Network (SBTN)

- Freshwater targets
  - Water quantity (withdrawals) and water quality (nutrient loading)
- Land targets
  - No conversion of natural ecosystems
  - Land footprint reduction
  - Landscape engagement
- Biodiversity targets
  - No specific indicators; considered implicit across the freshwater, land, and ocean targets; this will likely change soon

See https://sciencebasedtargetsnetwork.org/companies/take-action/cross-step-guidance/biodiversity-across-steps/

Convention on Biological Diversity (CBD)

- The Biodiversity Plan for Life on Earth – 2030 Targets. Also known as the Kunming-Montreal Global Biodiversity Framework.
- Several targets could be relevant:
  - Target 7: Reduce Pollution to Levels That Are Not Harmful to Biodiversity (there are many implicit indicators like this)
  - Target 10: Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry
    - An indicator from the Taskforce on Nature-related Financial Disclosures ties to Target 10 (next slide)

See https://www.cbd.int/gbf/targets

Taskforce on Nature-related Financial Disclosures (TNFD)

- Metric FA.A5.1 (Cropland with natural vegetation). Percentage of cropland owned, leased, operated and/or sourced from with at least 10% natural vegetation per 1 km^2 cultivated area
  - Based on Target 10 from the Convention on Biological Diversity

See https://tnfd.global/publication/additional-sector-guidance-food-and-agriculture/

WBCSD + opb2b

World Council Business for Sustainable Development + One Planet Business for Biodiversity

This framework is still under development – potential final publication later this year

Environmental Outcome	Potential Indicators
Improved ecological integrity	% natural/semi-natural habitat in agricultural land per km^2
	Land converted from natural or semi-natural habitat (ha)
	Percentage of riparian areas on farmed land with riparian buffer strips
Increased cultivated biodiversity	Crop diversity per km^2
Reduced pesticide risk	Environmental Impact Quotient (EIQ)
	Percentage of farmed land using biological controls instead of pesticides
	Concentration of pesticides in receiving water bodies

See *Regenerative Agriculture Metrics: Biodiversity chapter. Business guidance for deeper regeneration.*

SAI Platform – Regenerating Together

- Biodiversity Impact Area
  - Material Criteria
    - Habitat connectivity
    - Deforestation
    - Plant species diversity
    - Livestock diversity

- Outcomes
  - Maintain and enhance on-farm biodiversity
  - Protect on-farm habitat

- Principles
  - Soil disturbance, soil cover, cover crops
  - Livestock integration
  - Land conversion
  - Plant, animal diversity
  - Farm area with trees, shrubs, buffers
  - Nutrient and pest management

<u>Granular metrics</u>

- Total number of species
- Percent of natural or restored habitat

See https://saiplatform.org/wp-content/uploads/2023/09/sai-platform_-regenerating-together_september-2023-1.pdf

NRCS Conservation Programs

NRCS Conservation Programs

Top Conservation Practices Applied by Land Use, Program and Fiscal Year

NRCS National Planning and Agreements Database, 2005-2023

State: (All)

Year: (All)

Program Code: (All)

CSP: (•) Exclude ⓘ ( ) Include

Land Use: (All)

Download

Acres or Count

(•) Acres ⓘ

( ) Count ⓘ

# of Top Practices

10 < >

Others Category

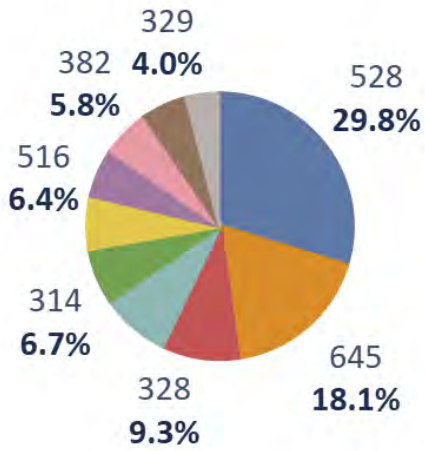
( ) Include ⓘ

(•) Exclude

Top Practices

- 528 - Prescribed Grazing
- 645 - Upland Wildlife Habitat Management
- 328 - Conservation Crop Rotation
- 614 - Watering Facility
- 314 - Brush Management
- 516 - Livestock Pipeline
- 595 - Pest Management Conservation System
- 382 - Fence
- 590 - Nutrient Management
- 329 - Residue and Tillage Management, No Till

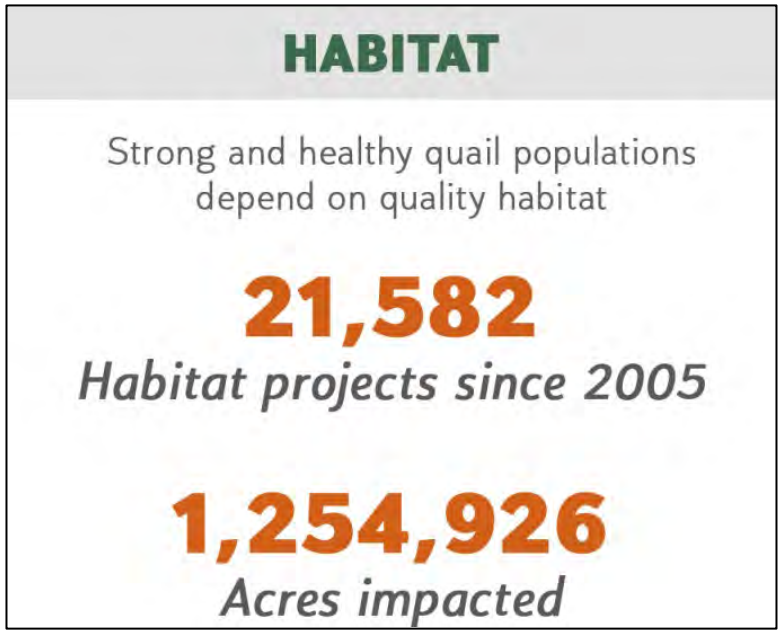
Percent of Top 10 Practices by Acres



Examples of Habitat Conservation/Restoration Programs

About Pheasants Forever

Pheasants Forever, including its quail conservation division, Quail Forever, is the nation's largest nonprofit organization dedicated to upland habitat conservation. Pheasants Forever and Quail Forever have more than 138,000 members and 760 local chapters across the United States and Canada. Since creation in 1982, Pheasants Forever has spent over $900 million on 550,000 habitat projects benefiting 20 million acres nationwide. In fact, more than 210,000 of those acres are now permanently protected as public lands.



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Recording Stops Here

It’s Time to Start Collecting Feedback!

- Mural collab platform overview
- Log in as a Visitor (no need for passwords or credentials)
- Browse the questions (you can zoom in and out)
- We’ll try to move together one section at a time. You will be able to add your thoughts with the sticky notes and the stars

The Mural feedback page is now closed

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