



Breaking the cycle

{ Restoring Our Land with Regenerative Agriculture }

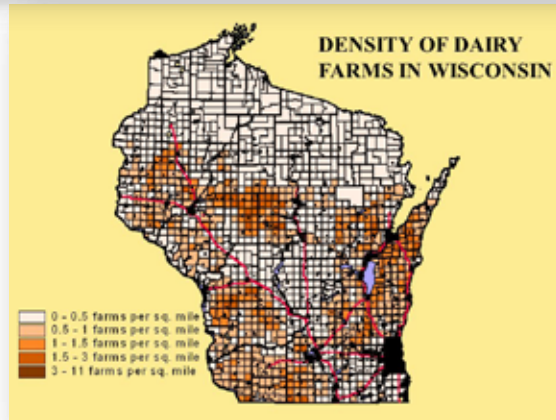


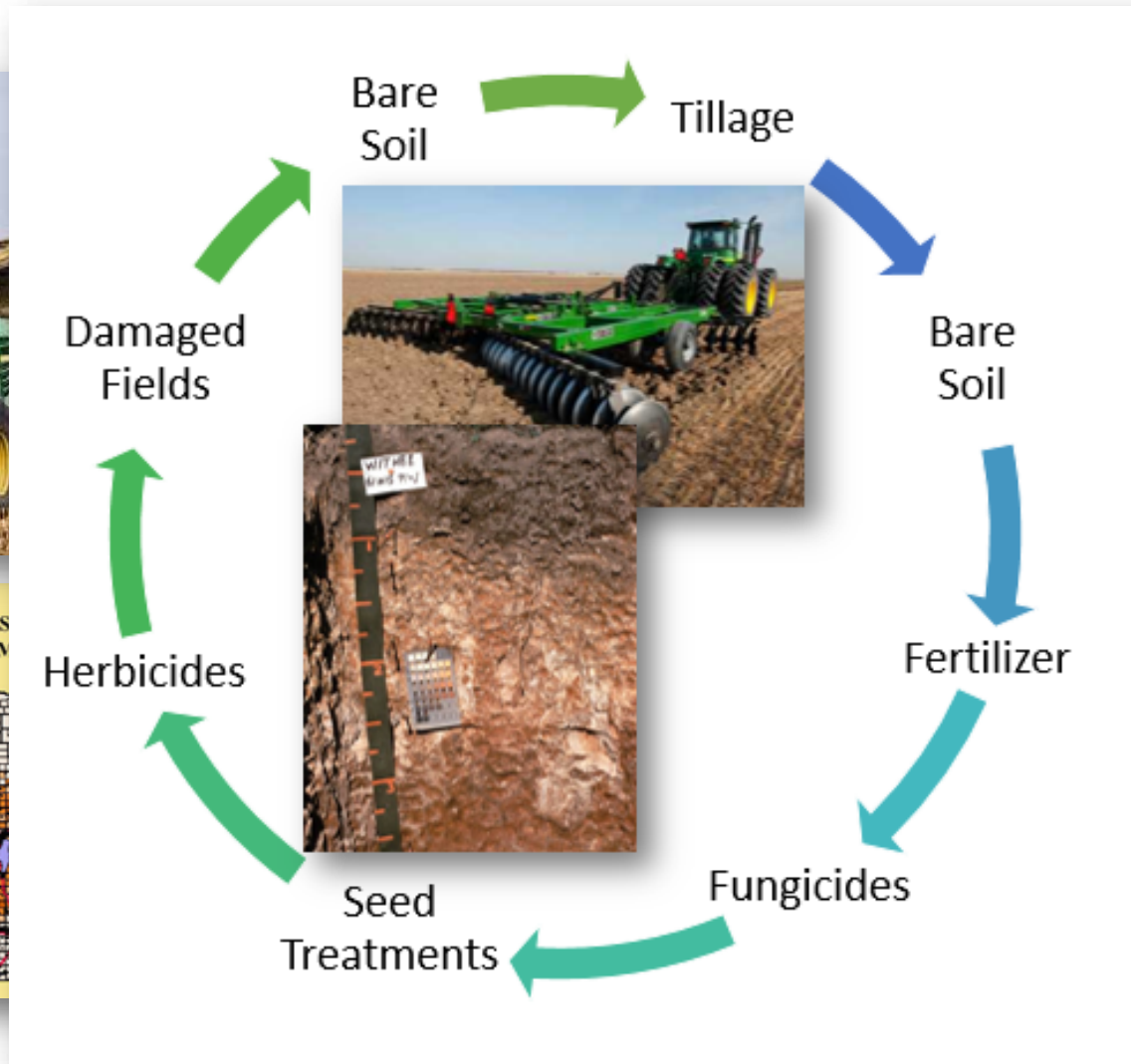
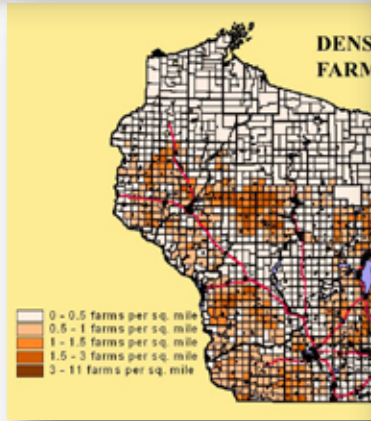
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- Soil Health
- Cover Crops
- Regenerative Agriculture



Soil Health - the condition of the soil and its potential to sustain biological functions, maintain environmental quality, and promote plant, animal, and human health.

Cover Crops – a multi-functional crop that prevents erosion, improves soil physical and biological properties, supplies nutrients, suppresses weeds, improves water cycling, breaks pest cycles, and provides forage along with various other benefits.



Regenerative agriculture

Continuous Living Roots in the Soil



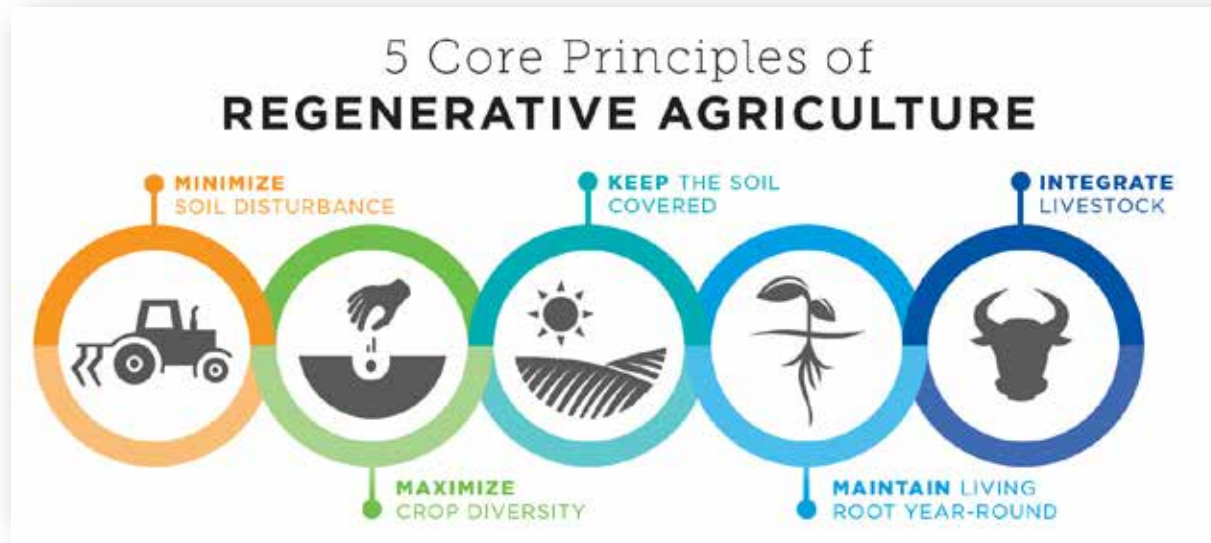
Regenerative agriculture

Is it a buzz-term?

Is it a fad?

Is it a marketing scheme?

Is it the 2020 version of all-natural or sustainable or conservation?



Regenerative agriculture



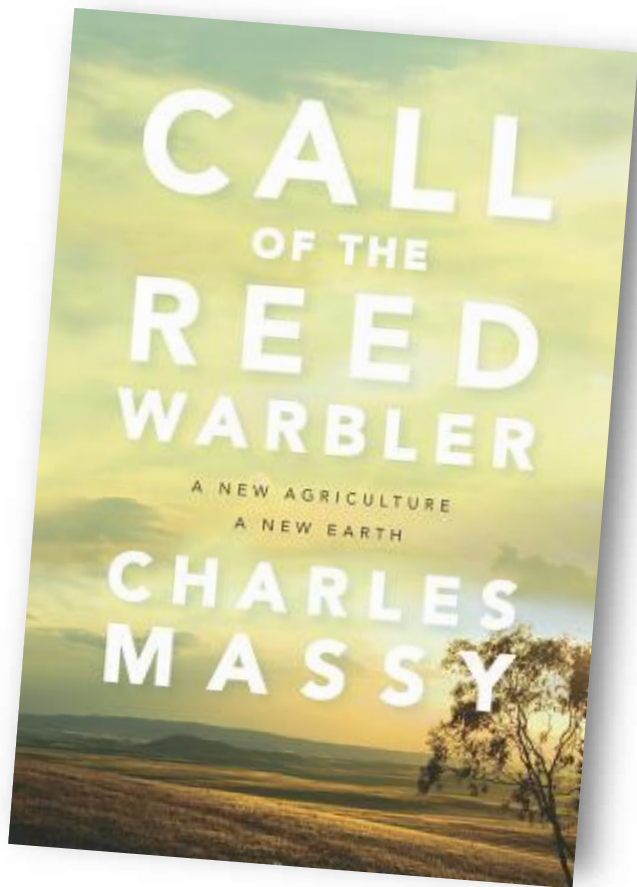
“Land doctoring”
versus the science
of land health



Mid 1930s



Regenerative agriculture



“Those who live close to the earth – we farmers – have become as illiterate as anyone else when it comes to reading our landscapes.”

“Regenerative agriculture implies more than just ‘sustaining’ something but rather an *active rebuilding* or *regeneration* of existing systems towards *full health*.”

Why Regenerative Agriculture

?

1. To achieve *soil health*
2. To have profitable farms
3. To protect our resources
4. To have healthy people
5. To have healthy communities

Soil health is a component of regenerative agriculture.



The Ladder of Regeneration

Soil Health



The “Holy Grail” – Fully functioning soil/biology/crops without off-farm inputs



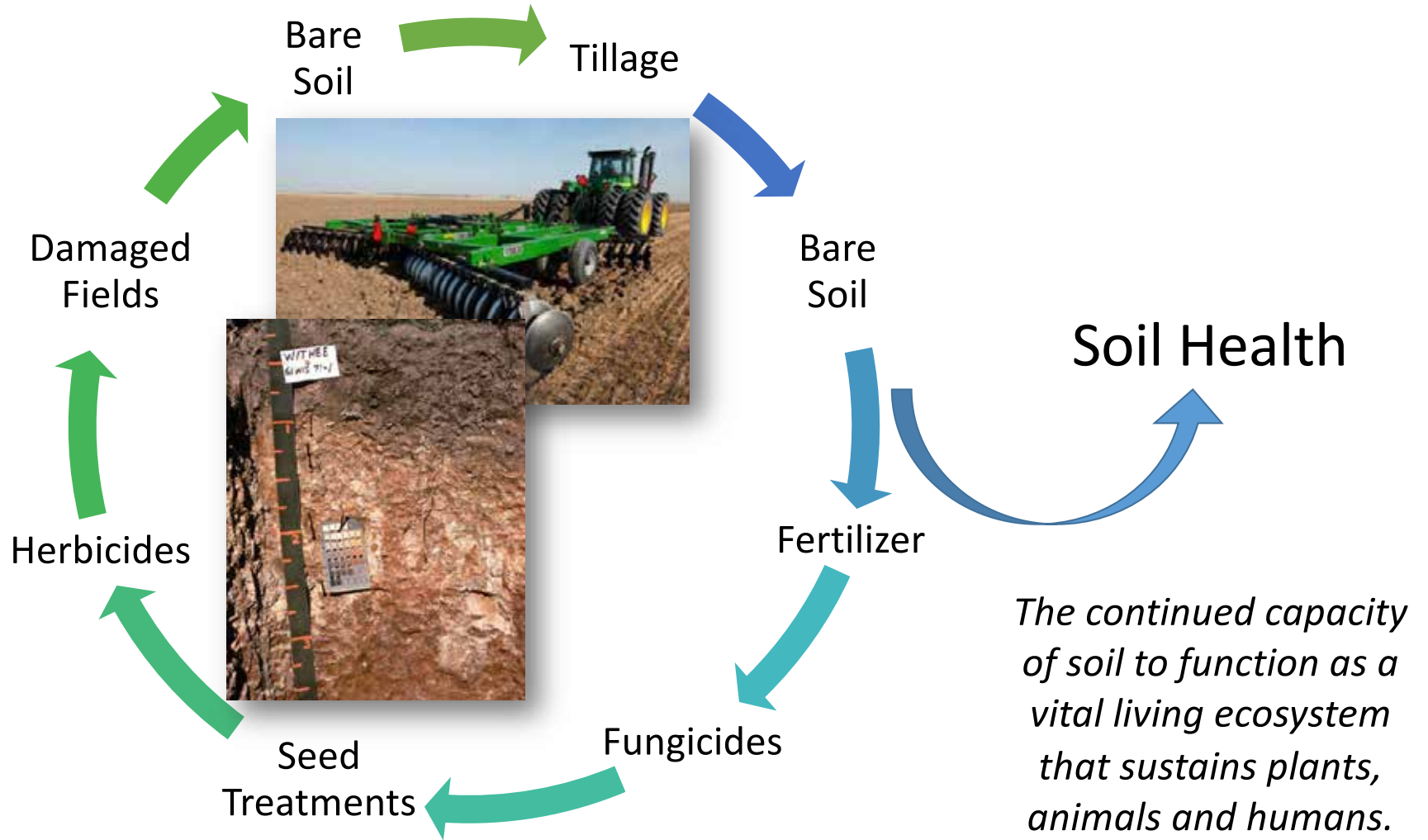
Managed grazing

Perennials

Continuous living cover (cover crops)

No-till planting

The Cycle of...



Anecdotal Evidence = Clues

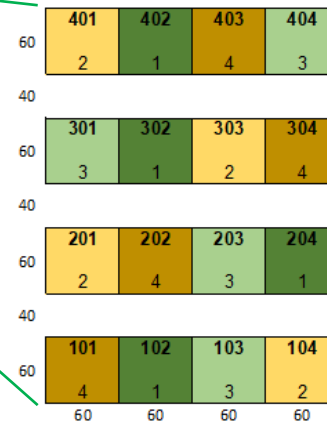


What happens to the soil when you break out of the cycle?



Mars hfield Tillage x Cover Crop Study
Stratford, WI

18V92



- NT-CC** 1 no-till with cover crop
- NT-NC** 2 no-till, no cover crop
- CT-CC** 3 conventional till with cover crop
- CT-NC** 4 conventional till, no cover crop

- Crop
- 2014 Corn
 - 2015 Soybeans
 - 2016 Corn
 - 2017 Soybeans
 - 2018 Corn

2014 –
2017

The soil got firmer...

But did not slow water infiltration...

Became better structured and more stable...

And never inhibited yield...




Eliminating tillage was the step onto the first "rung,"
but there's more to the story...

2018 –
2019

The presence of cover crops never inhibited yield...
And they caused better forage quality!

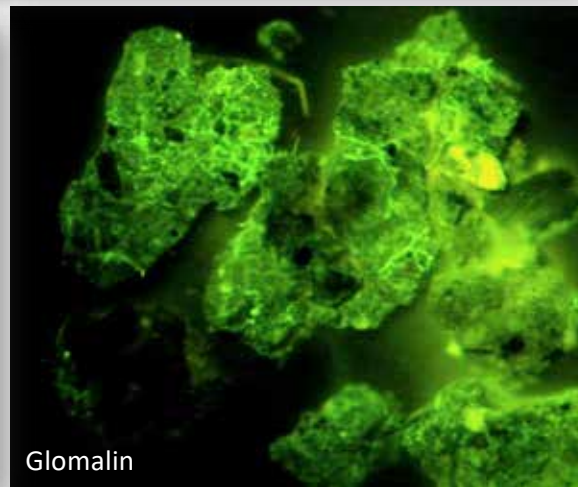
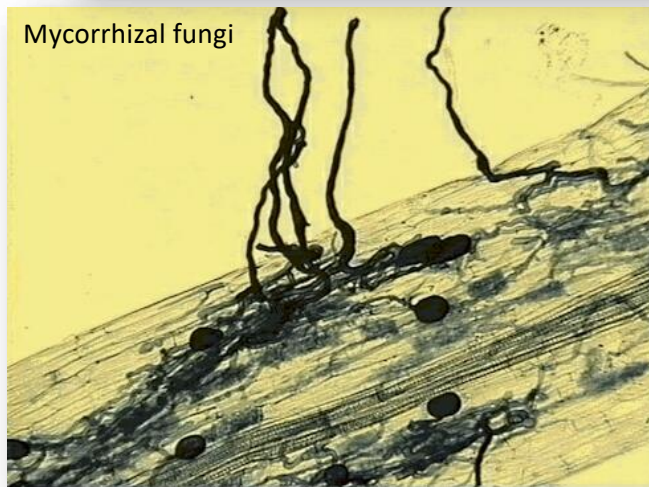
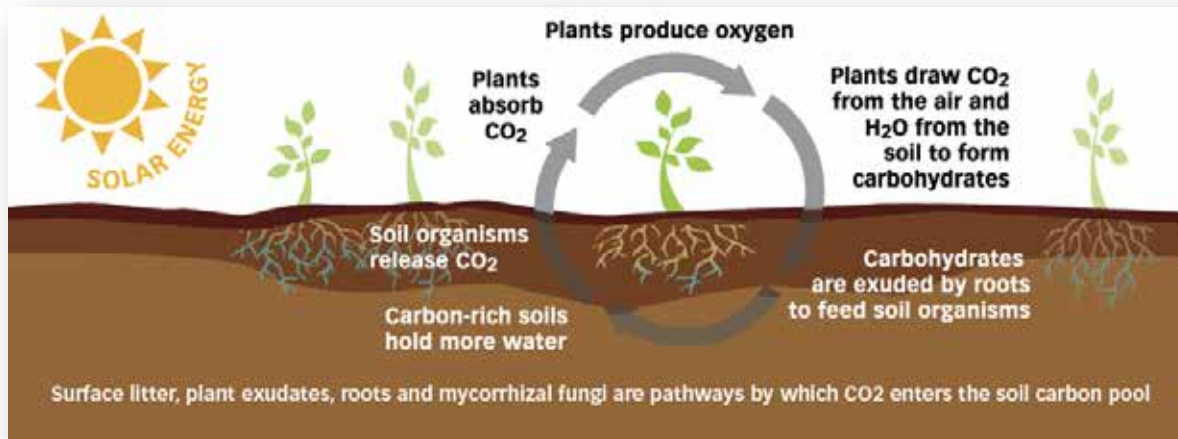



Soil health improves by eliminating tillage...
but cover crops move us further up the ladder.

A wide-angle photograph of a lush green cornfield stretching to the horizon. The sky is overcast with soft, grey clouds. In the distance, a line of trees and a few small buildings are visible. A semi-transparent white box is centered over the middle of the image, containing text.

Moral of the story:
Soil health is effected by
physical disturbance, but the
process is driven by biology -
it must be a systems approach

Soil Biology – Symbiotic Relationships





Interseeding: the method of establishing a crop into an already-established crop – overlapping succeeding crops, keeping “solar panels” on the land as often as possible

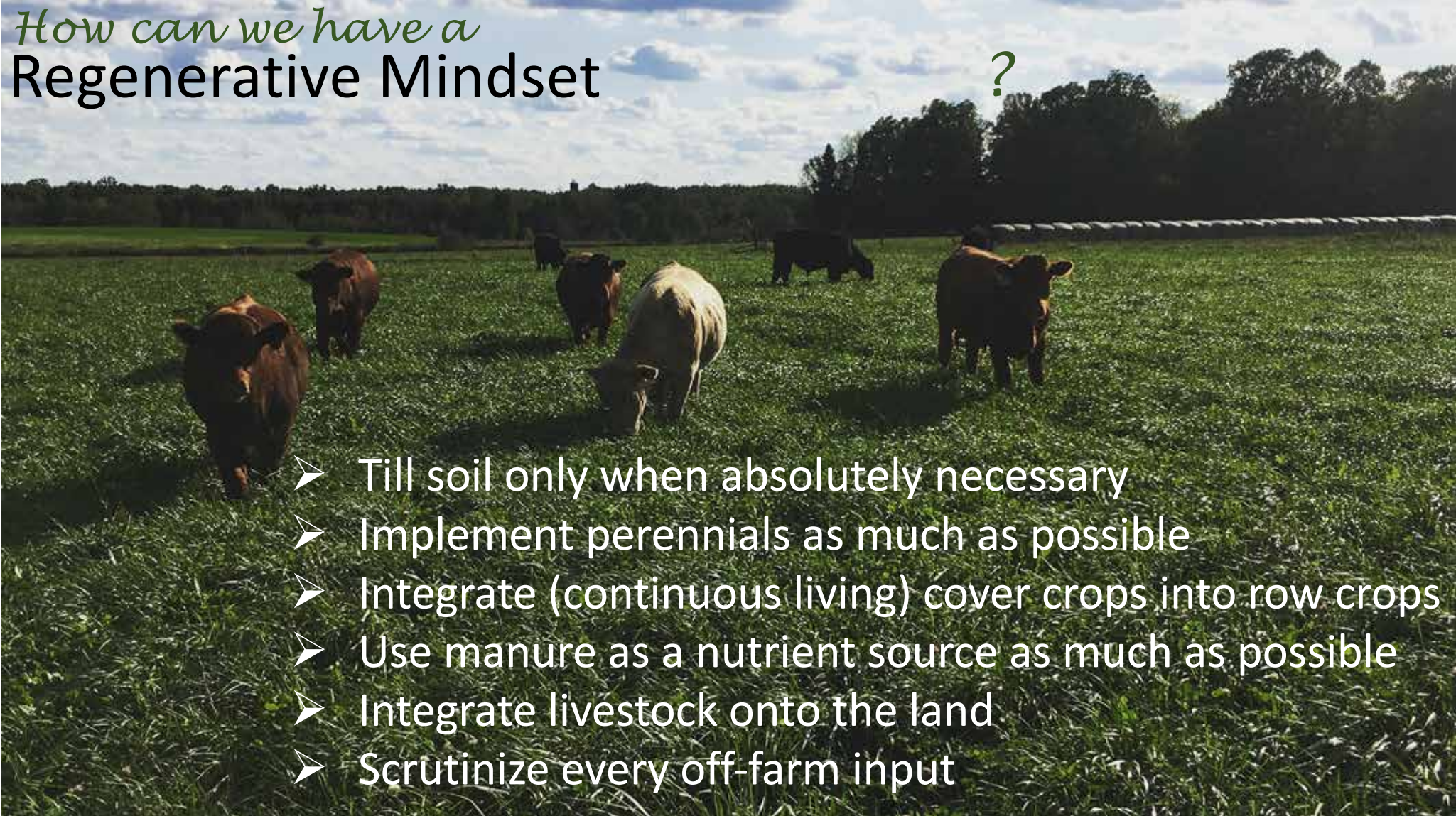
Regenerative Mindset



- Holistic manager (not just farm or land manager)
- Prioritize soil health
- Manage ecology – harvest sunlight
- Manage the underground “herd”
- Keep biology in mind with each decision
- Nurture symbiotic relationships

How can we have a Regenerative Mindset

?

- 
- Till soil only when absolutely necessary
 - Implement perennials as much as possible
 - Integrate (continuous living) cover crops into row crops
 - Use manure as a nutrient source as much as possible
 - Integrate livestock onto the land
 - Scrutinize every off-farm input

Thank You!

