

# Regeneration In Saskatchewan EKOTANKESMEDJA Mar 24/21

Blain Hjertaas



*Sandy Black*



# GOALS

1. Information about Saskatchewan
2. Tour of my farm
3. Why Regenerative Agriculture?
4. How we do Regenerative Agriculture by Grazing



Arctic Ocean

Greenland  
(Denmark)

Baffin Bay

Alaska  
(United States)

Yukon

Whitehorse

Northwest  
Territories

Yellowknife

Nunavut

Iqaluit

Labrador Sea

Newfoundland  
and  
Labrador

St. John's

Hudson  
Bay

British  
Columbia

Alberta  
Edmonton

Manitoba

Quebec

Vancouver

Victoria

Calgary

Saskatoon

Regina

Winnipeg

Ontario

Thunder Bay

Quebec

Montreal

Ottawa

Toronto

Hamilton

London

Fredericton

Moncton

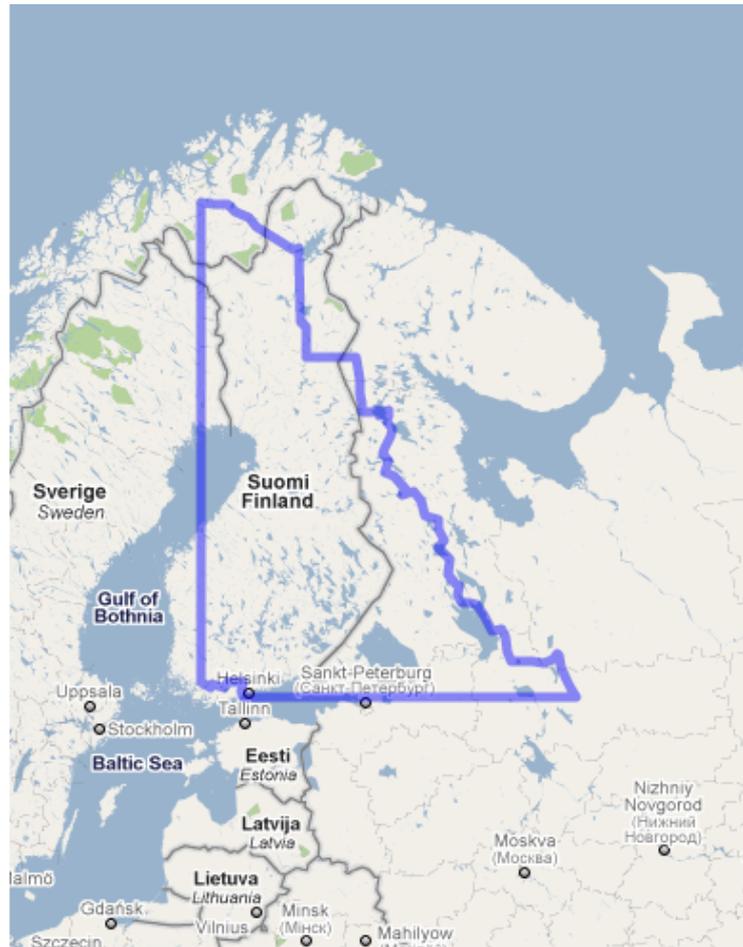
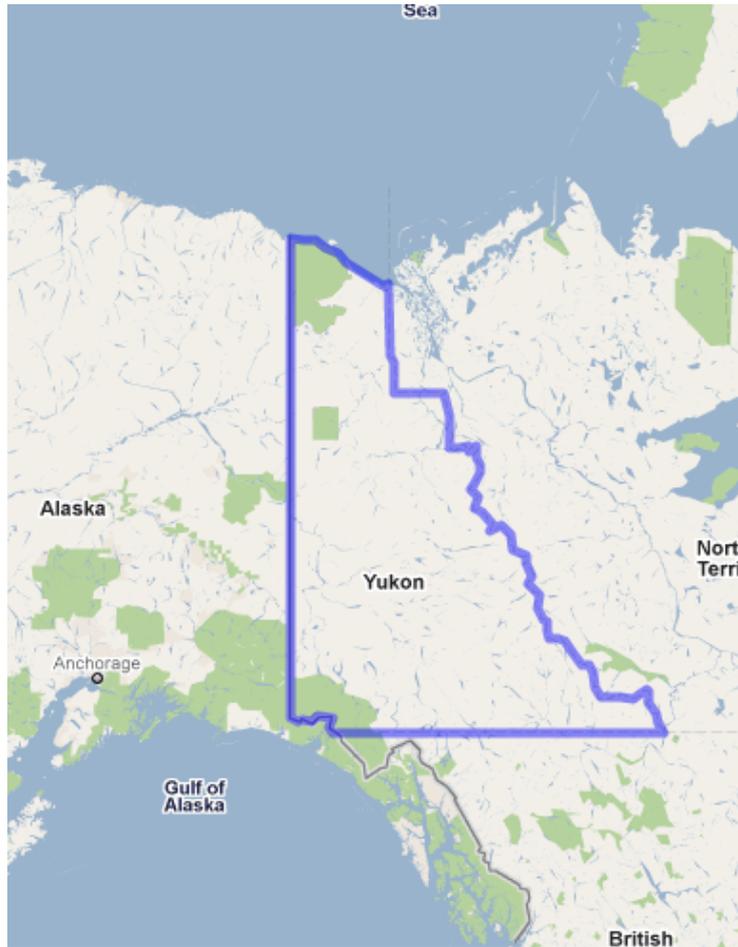
Halifax

Nova  
Scotia

Atlantic  
Ocean

United States

# Finland





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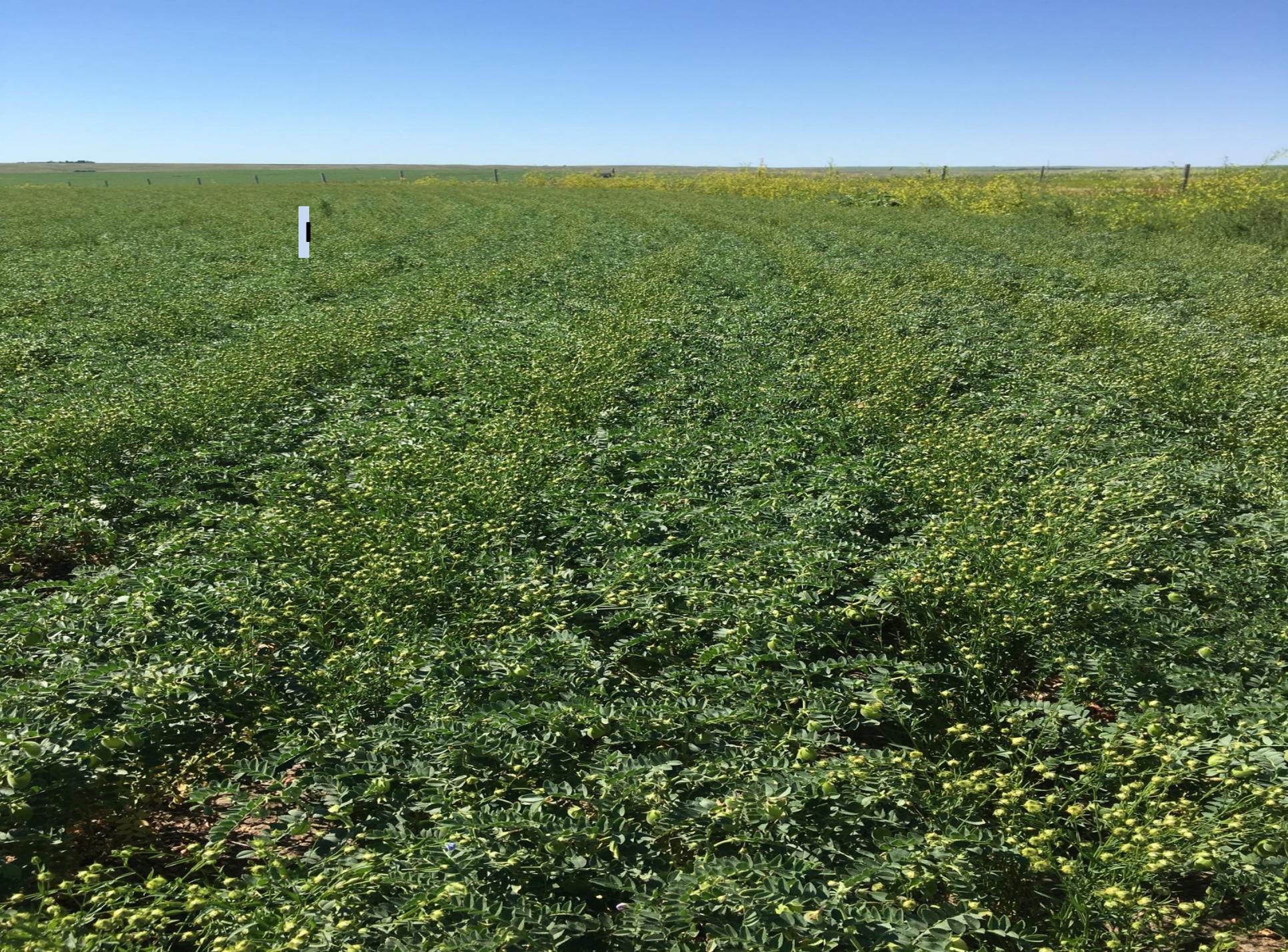








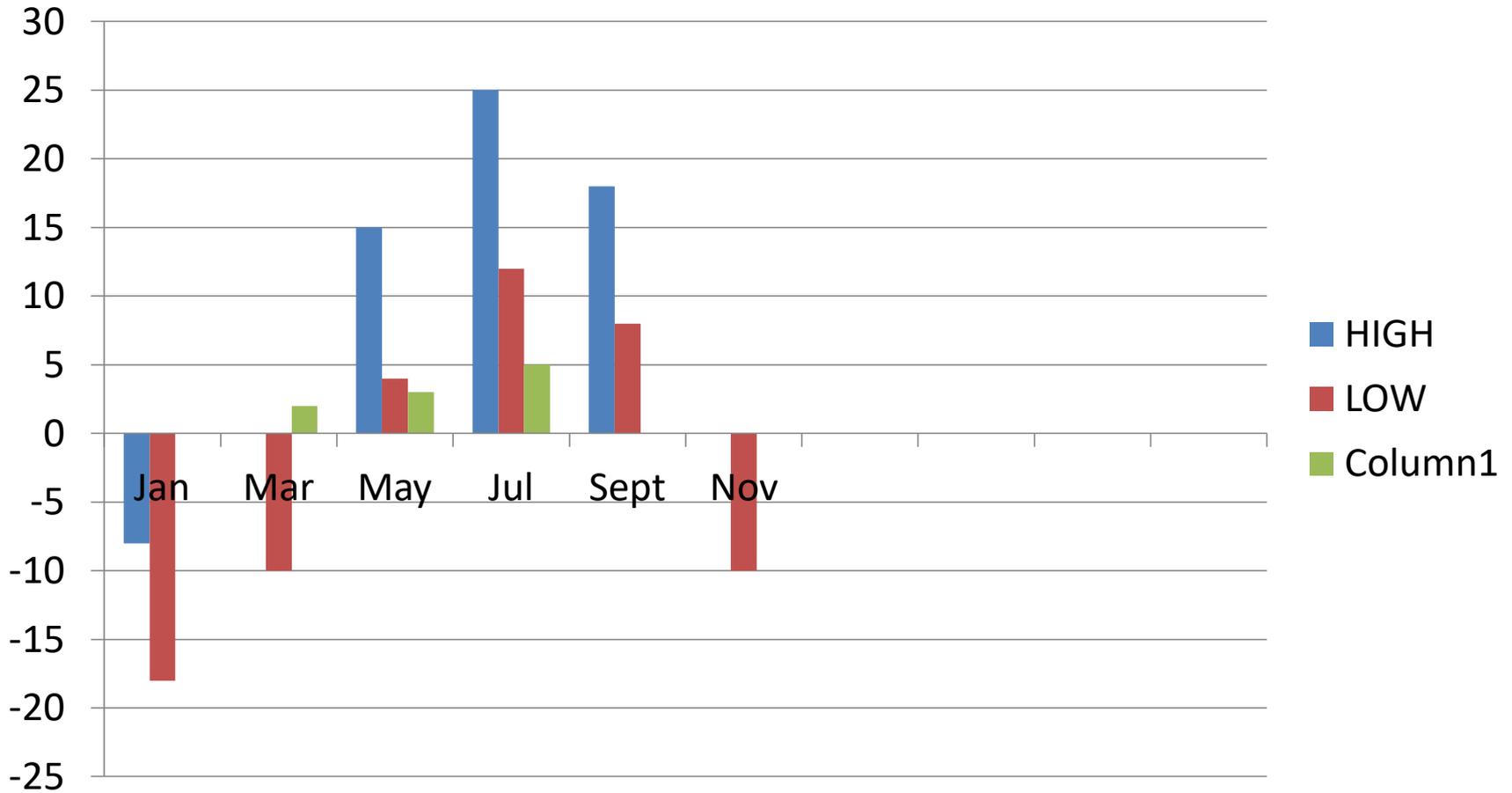








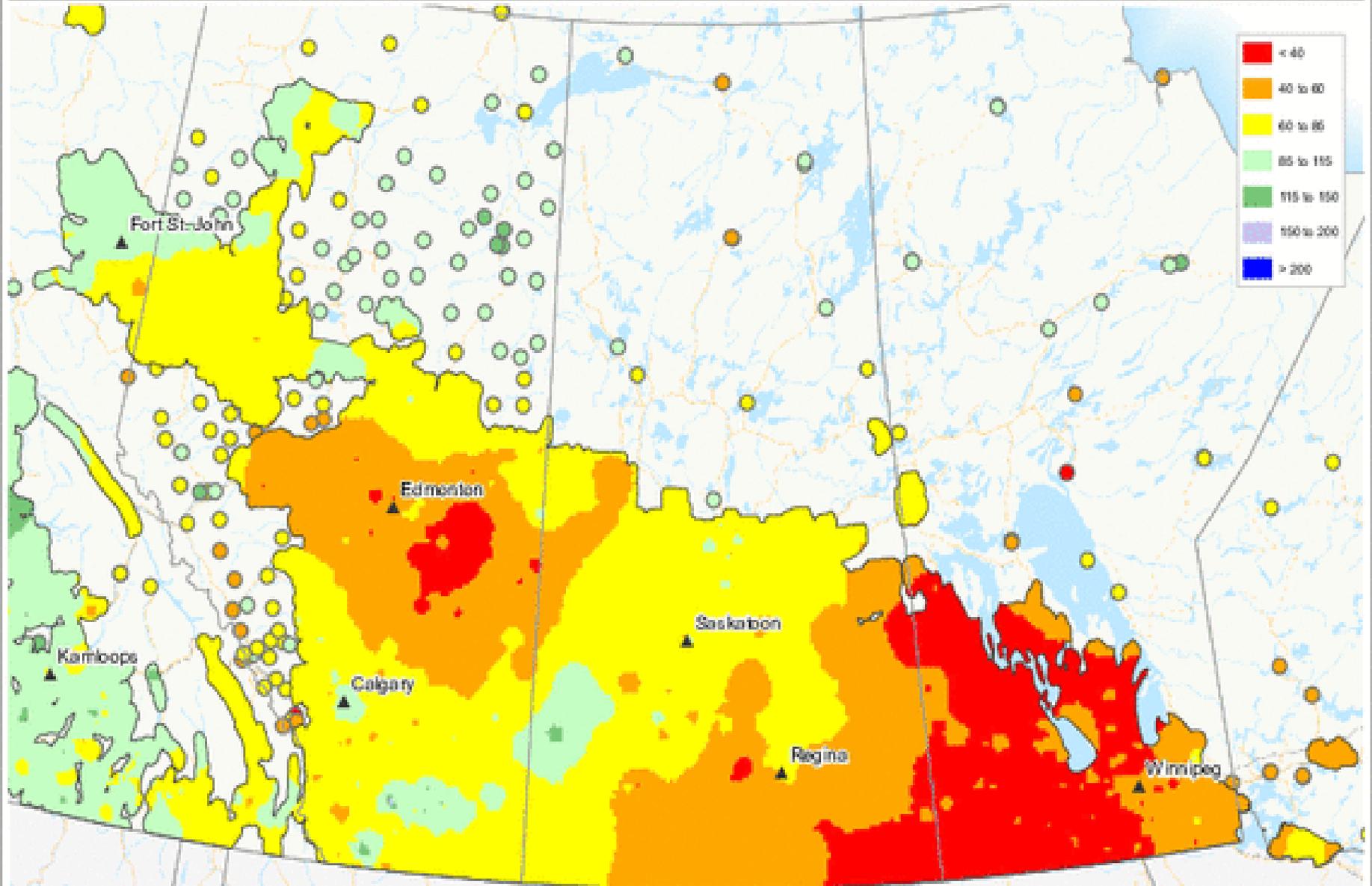
# Average Monthly High/Low





# Percent of Average Precipitation

September 1, 2020 to March 18, 2021





Tour of my farm





CENTURY FAMILY FARM AWARD



The Hjertaas Family Farm - Established 1915











































# Why Regenerate?

- Nutrient density declining
- Climate chaos
- Biodiversity loss
- Low profit and loss of farmers
- Water quality decline

# McCance & Widdowson

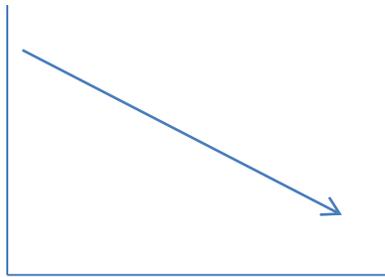
	1940-1991	1940-1991	1940- 2002	1940- 2002
	Vegetable	Fruit	Meat	Dairy
Na	-49%	-29%	-24%	-47%
K	-16%	-19%	-9%	-7%
P	9%	2%	-21%	34%
Mg	-24%	-16%	-15%	-1%
Ca	-46%	-16%	-29%	4%
Fe	-27%	-24%	-50%	-83%
Cu	-76%	-20%	-55%	-97%

# Why Regenerate?

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- Climate chaos
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- Water quality decline

# Types of Agriculture

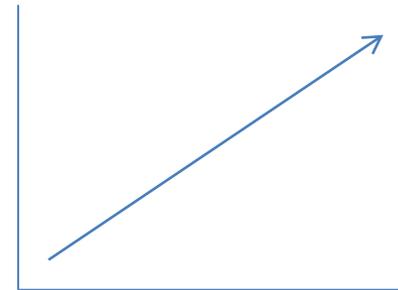
**Degenerative**



**Sustainable**



**Regenerative**



# WHY WOULD WE WANT TO SUSTAIN THIS?

DEGENERATIVE

SUSTAINABLE



# Change over time

## 10,000 years

- 8 billion ha forest
- 5 billion ha rangeland

## Today

- 3.5 billion ha forest
- 4 billion ha range
- 1.5 billion ha crop
- 4 billion ha desert



# *DESERTIFICATION*

1/3 of farmable land lost in 40 years UN

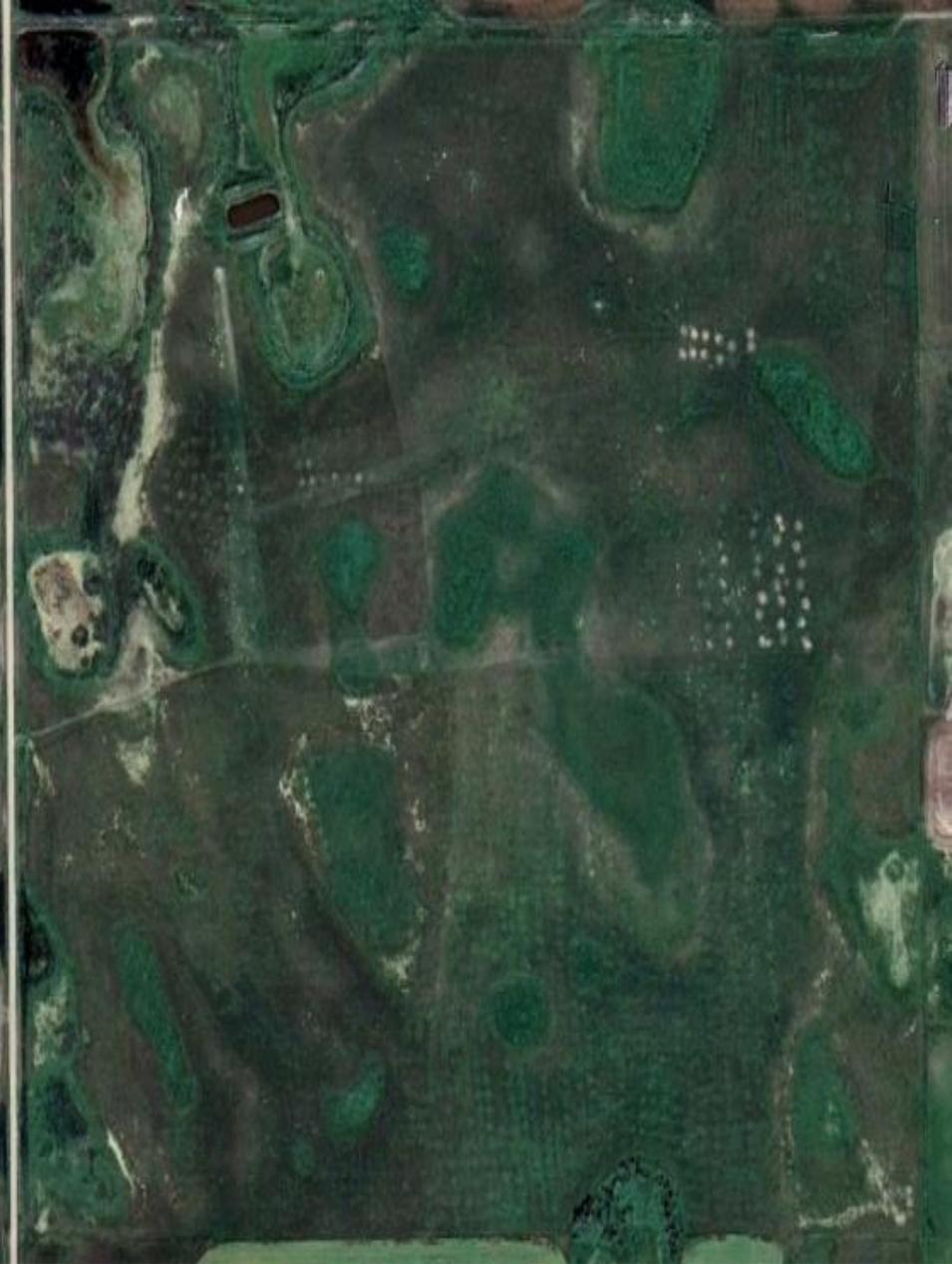
Ray Archuleta

**The soil is naked, hungry, thirsty and running a fever**





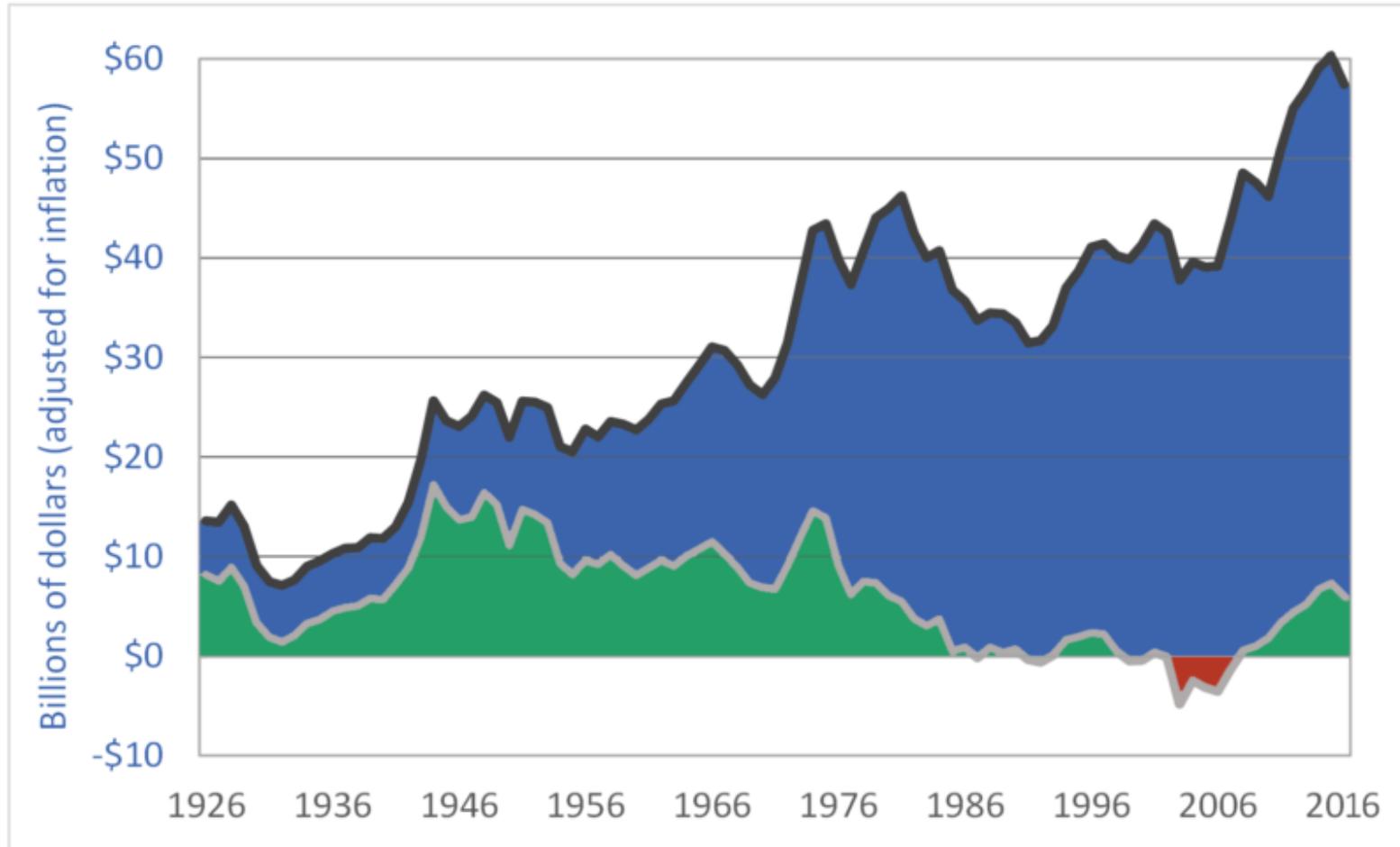
**Cropped**



**Pasture**

# Net Farm Income

[www.darinqualman.com](http://www.darinqualman.com)



# How to REGENERATE

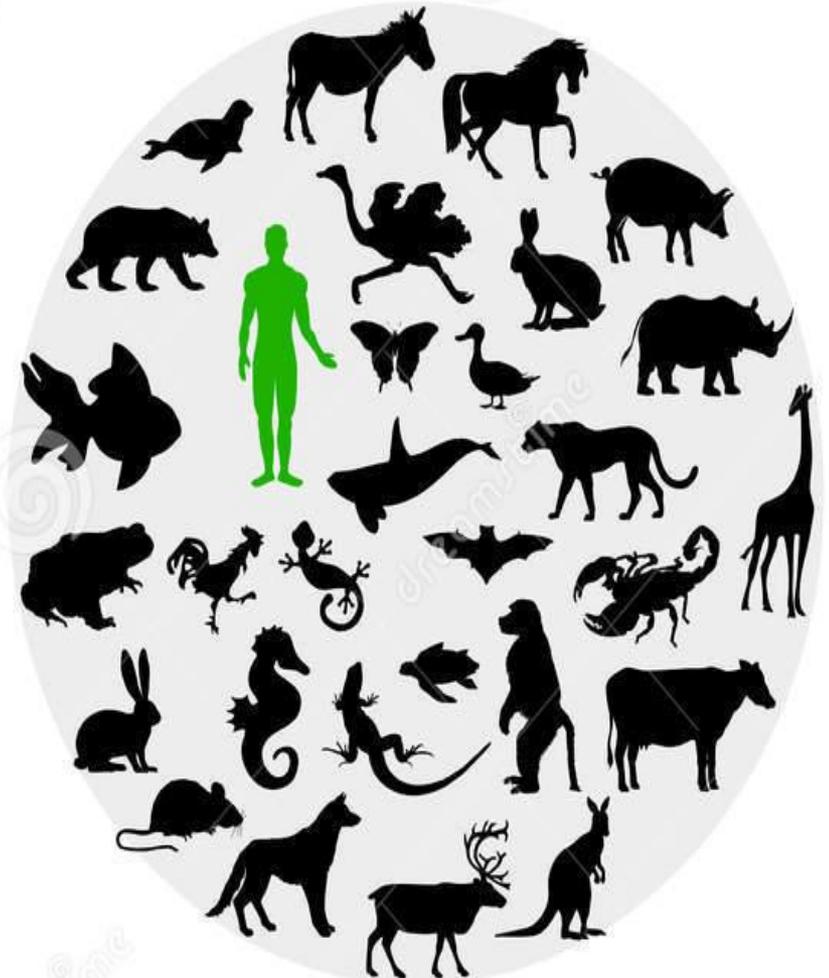
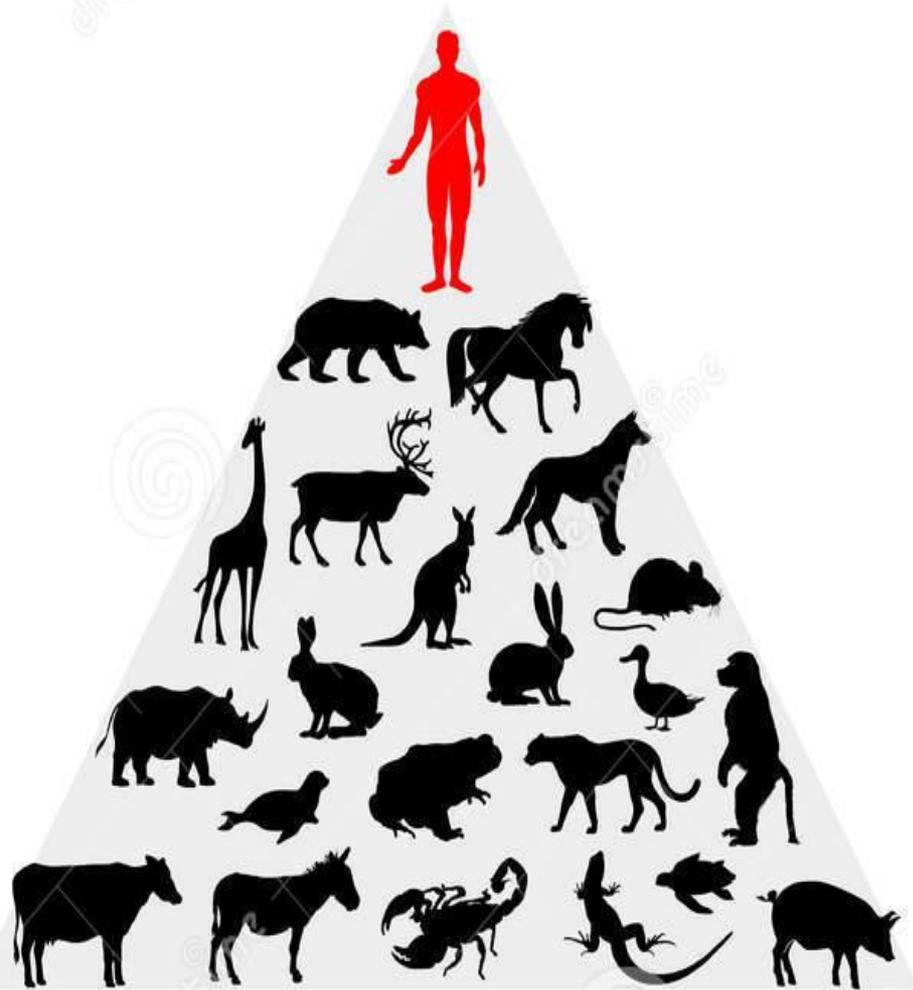


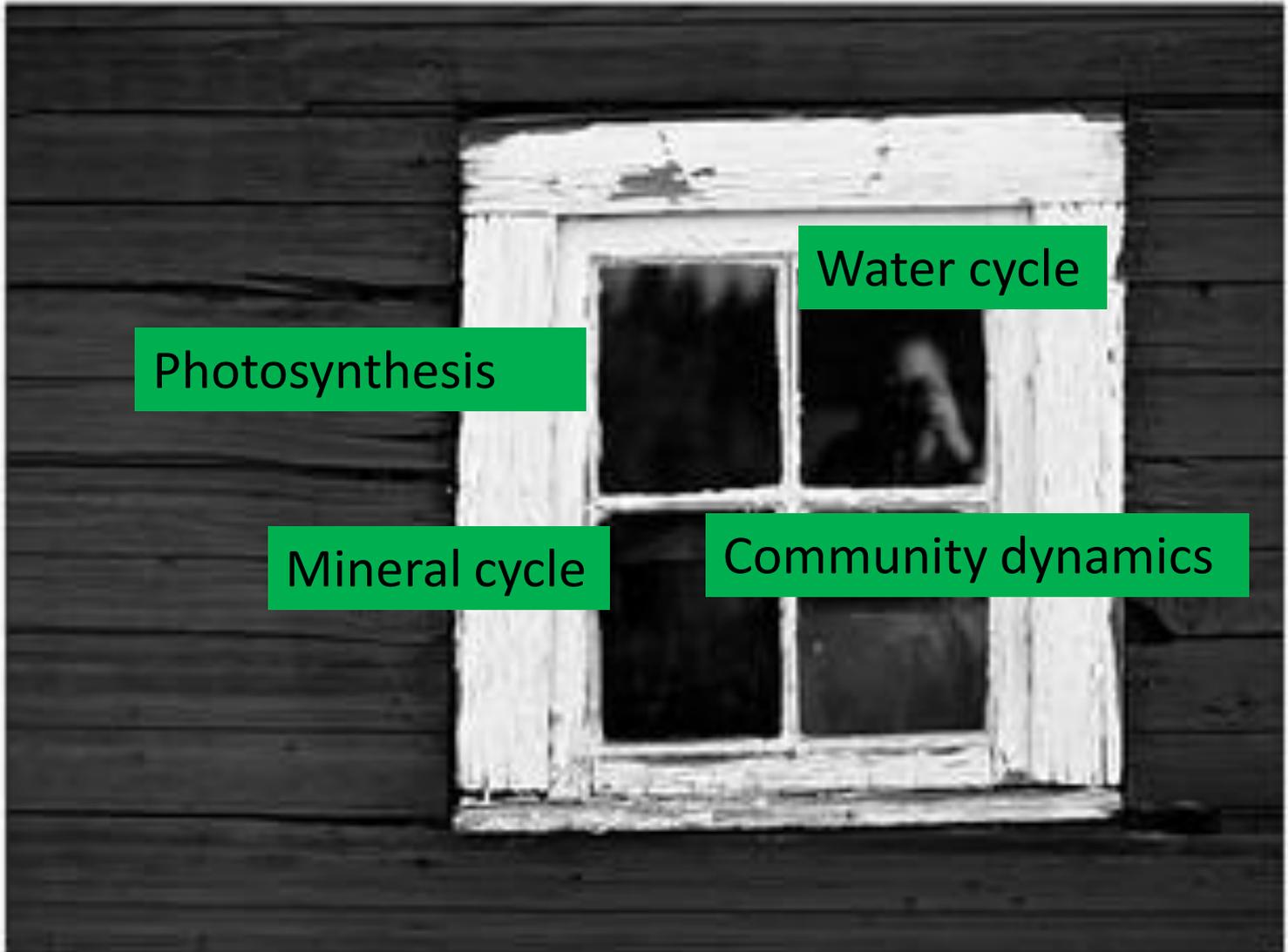
# Mindset

- Change is hard
- Compaction
- Renewal of heart and mind
- Biomimicry

# EGO

# ECO





Photosynthesis

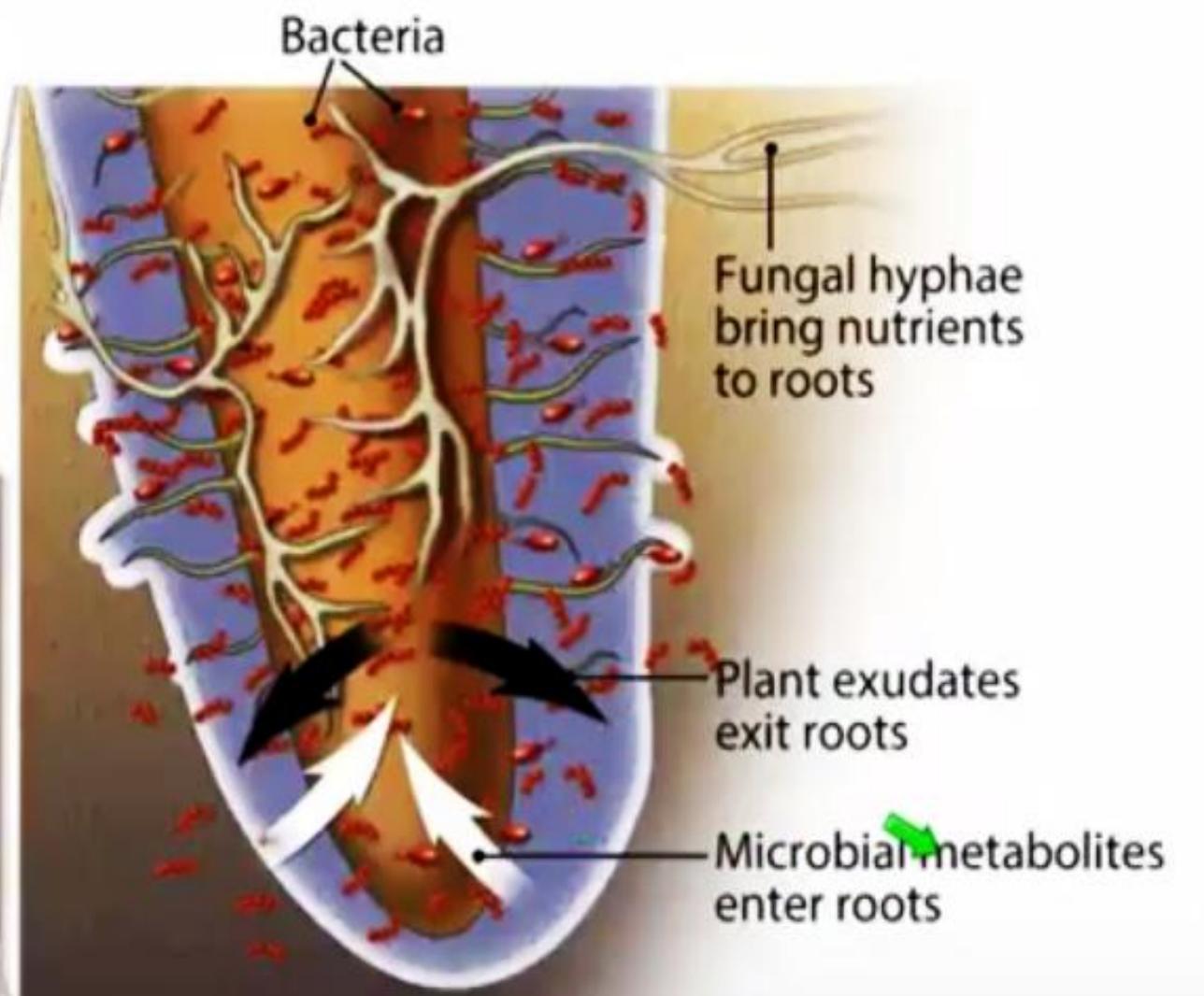
Water cycle

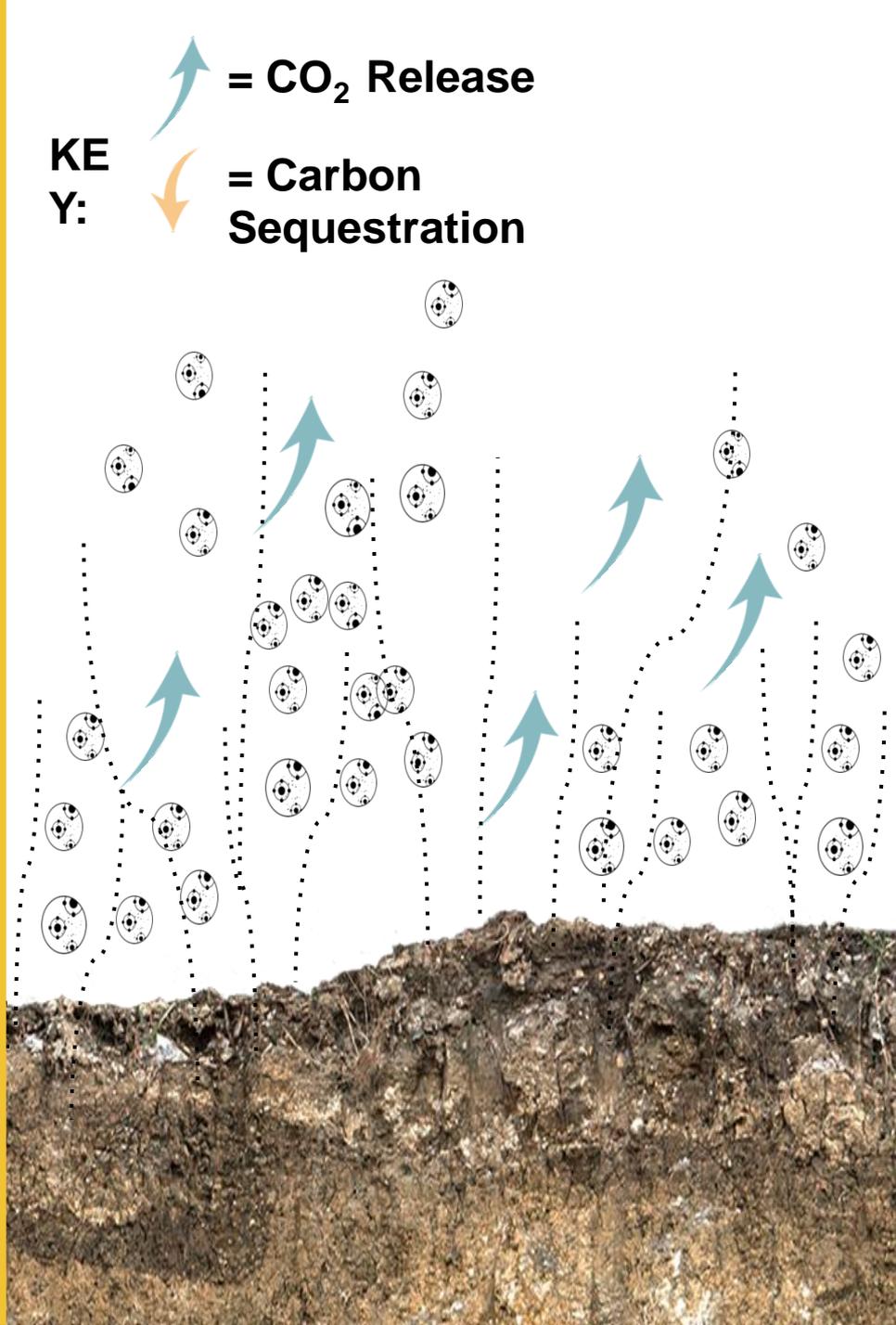
Mineral cycle

Community dynamics

# Regenerative Principles

- Context
- An living root as long as possible
- Diversity
- Litter on the soil surface
- Animal integration
- Minimize disturbance





KE  
Y:

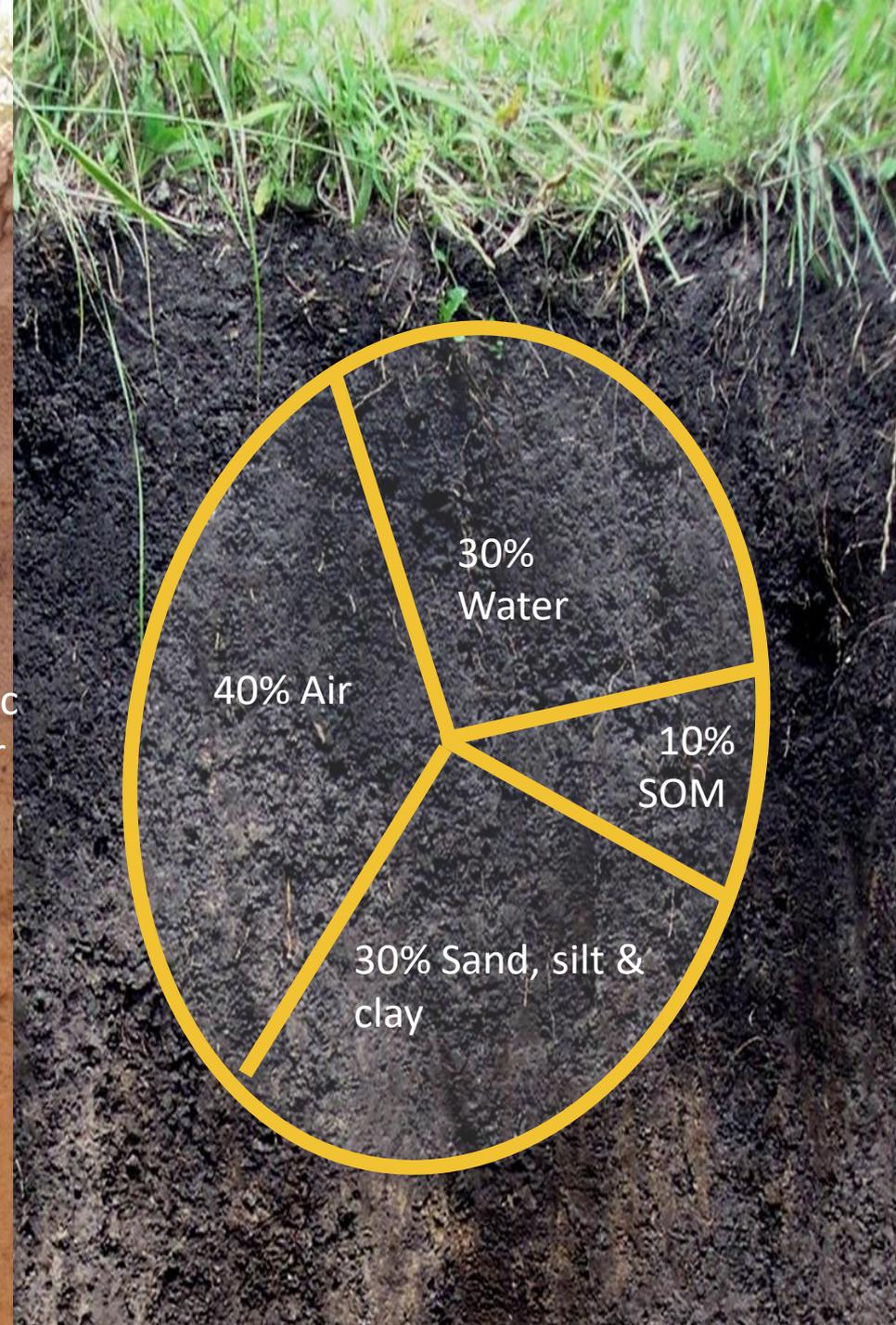
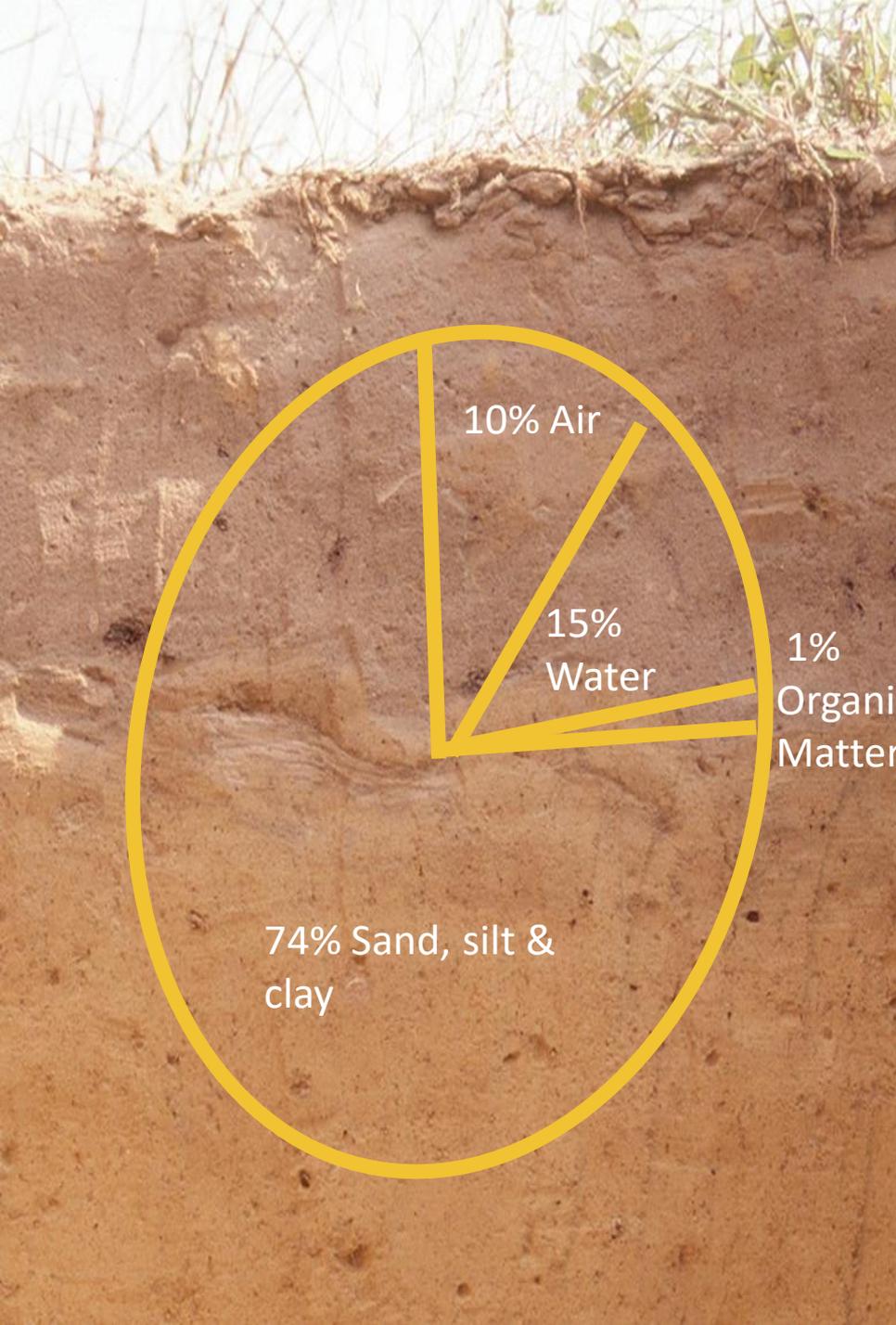
 = CO<sub>2</sub> Release

 = Carbon Sequestration

500  $\mu$ m

# Mycorrhizae Fungi

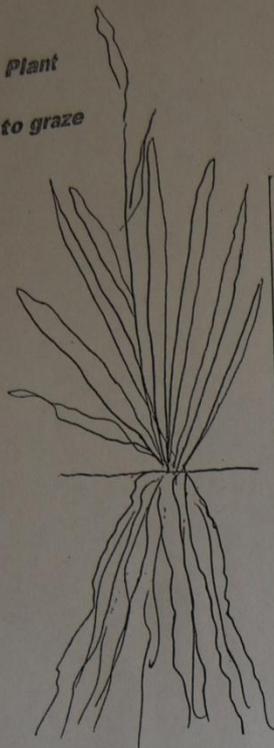






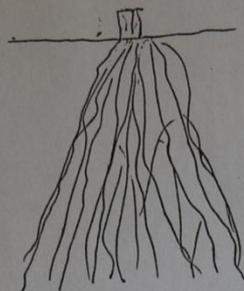
# How We Graze

*Mature Plant  
Ready to graze*

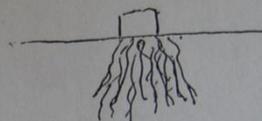


**OVER GRAZING**

*Grazed*

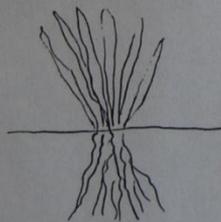


*Browned tips*



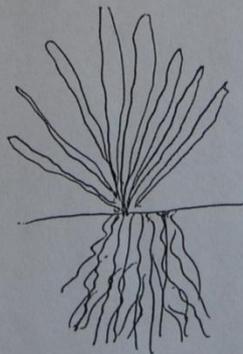
*Plant takes  
Energy from  
Roots*

*Leaves are starting  
Energy from crown*



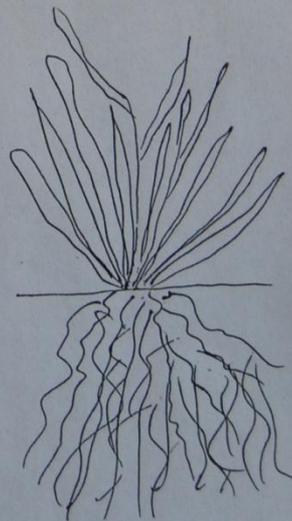
*Plant not self sufficient*

*Plant would be  
overgrazed*



*Plant now self sufficient*

*Putting away reserves for*



*All needs are met*



**30 days Recovery**

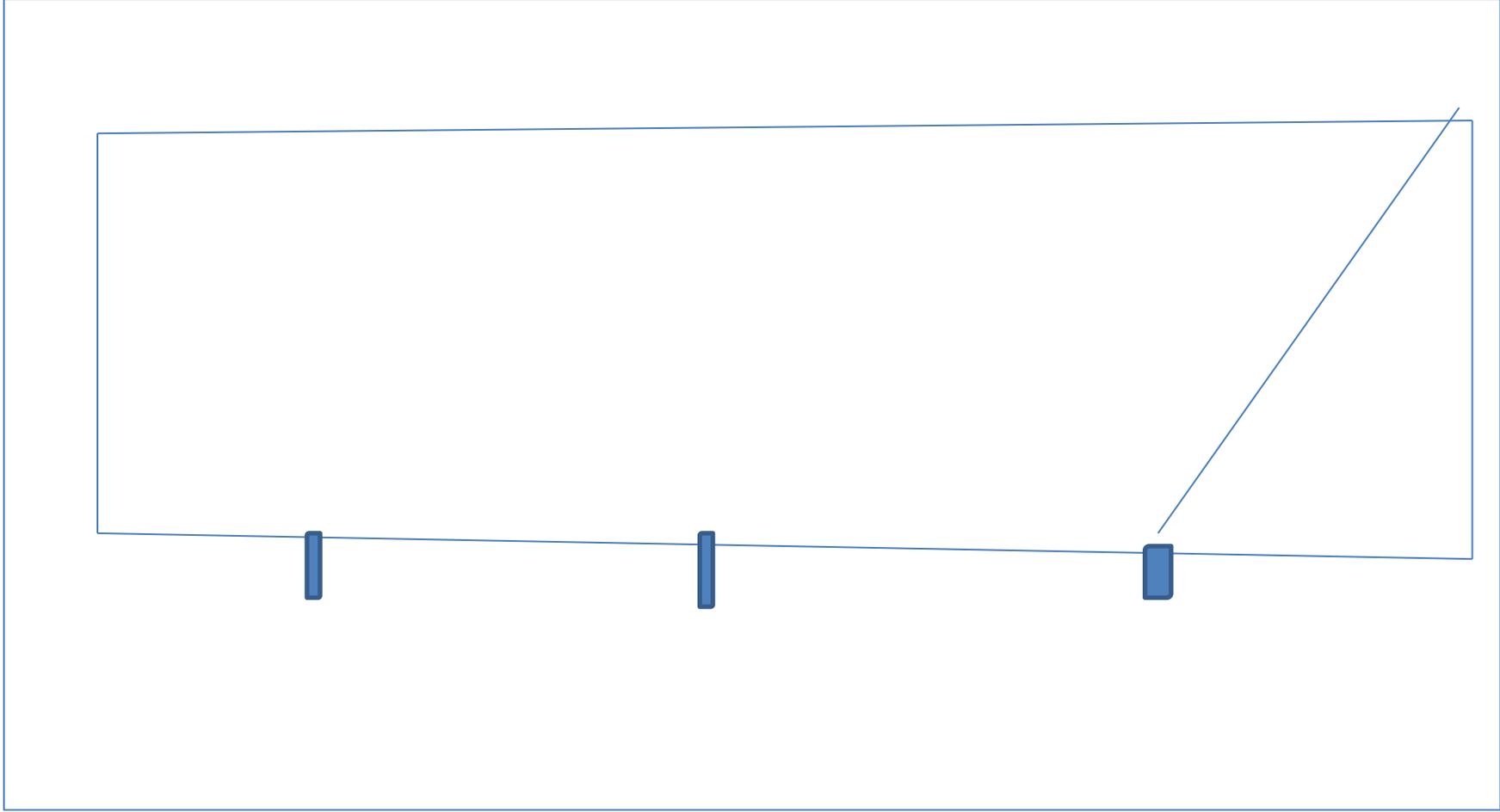
**Picture taken July 16/11**

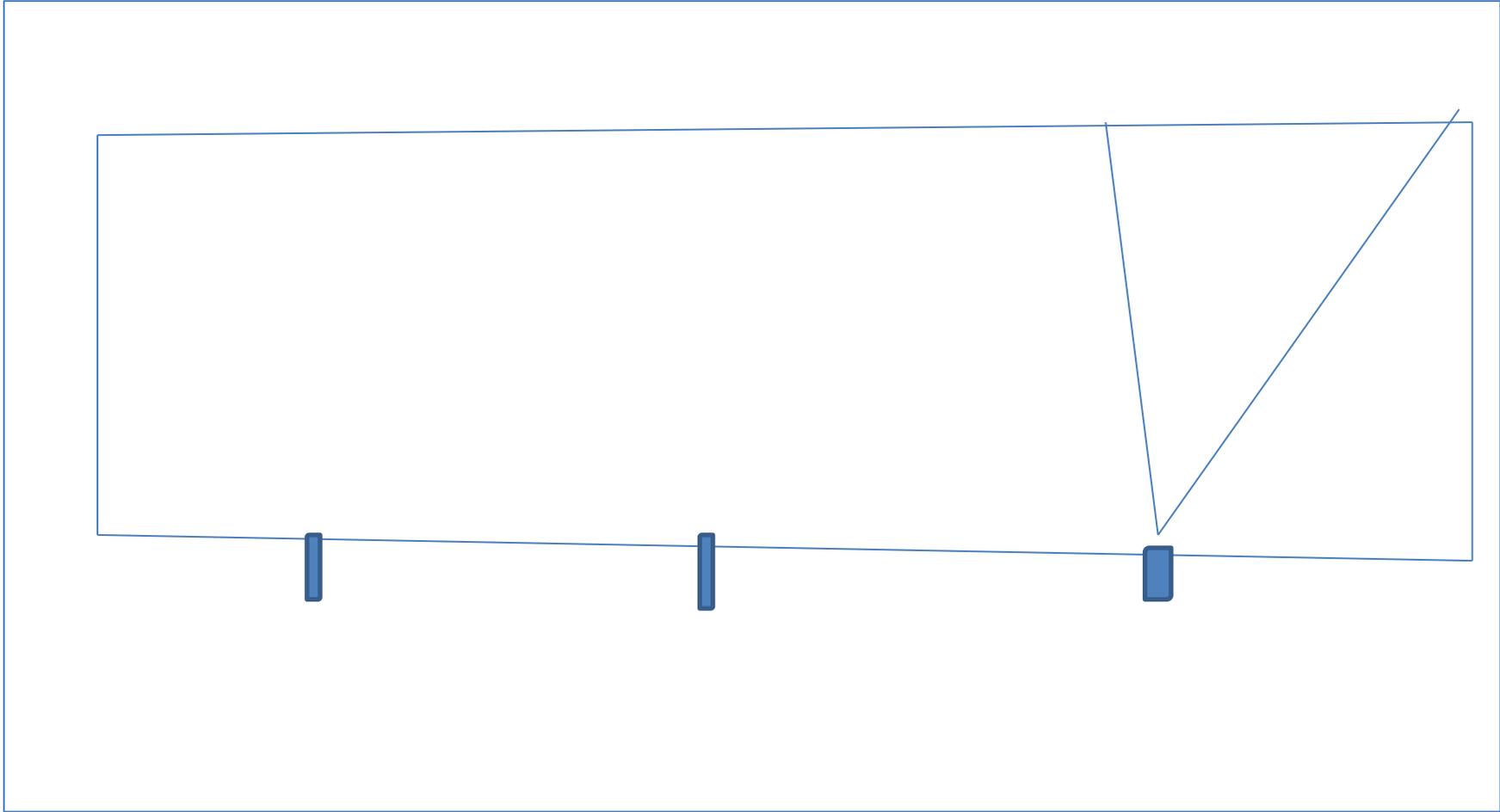
**Picture taken July 16**

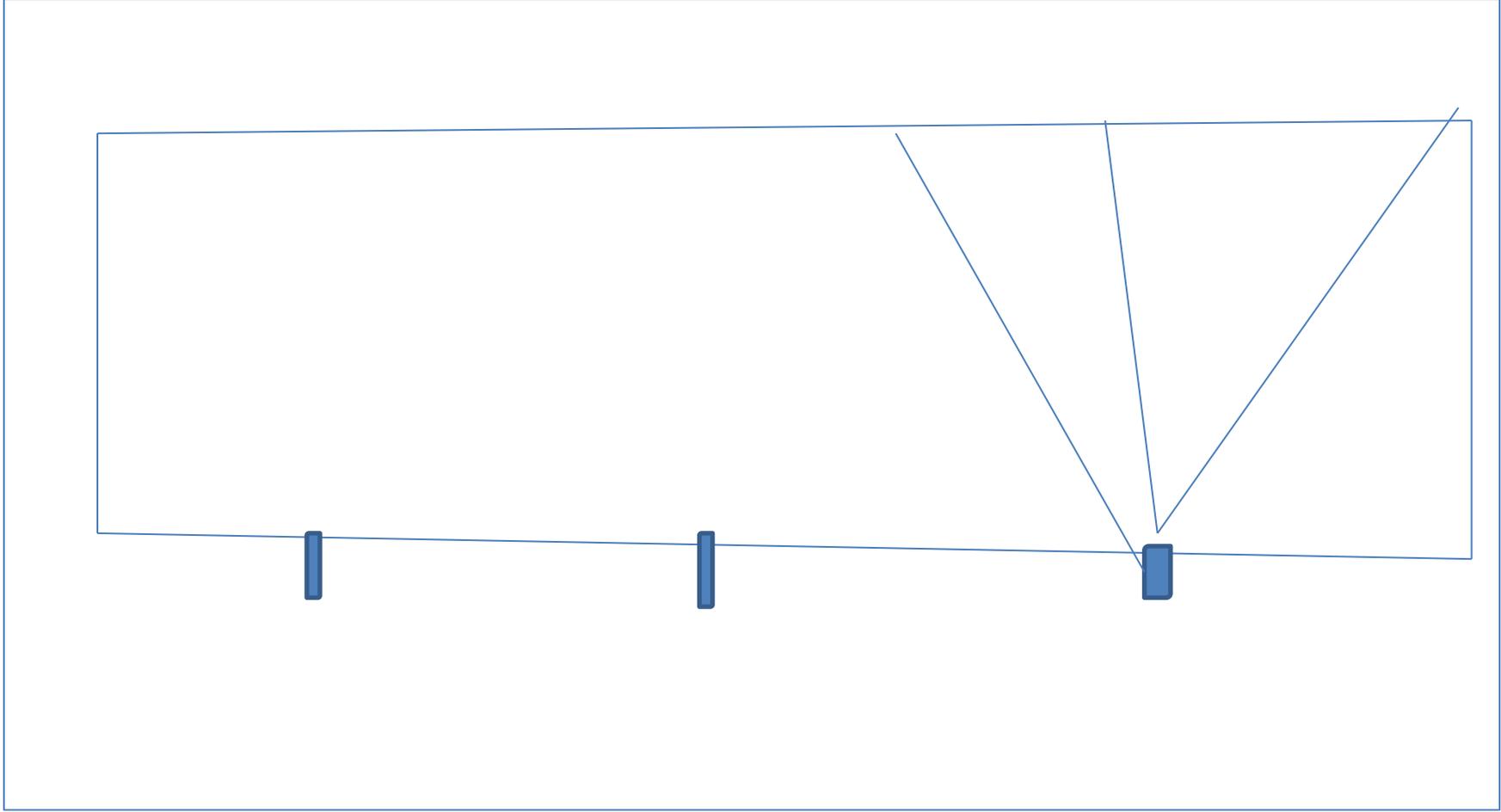
**60 days of recovery**

**Not Grazed**











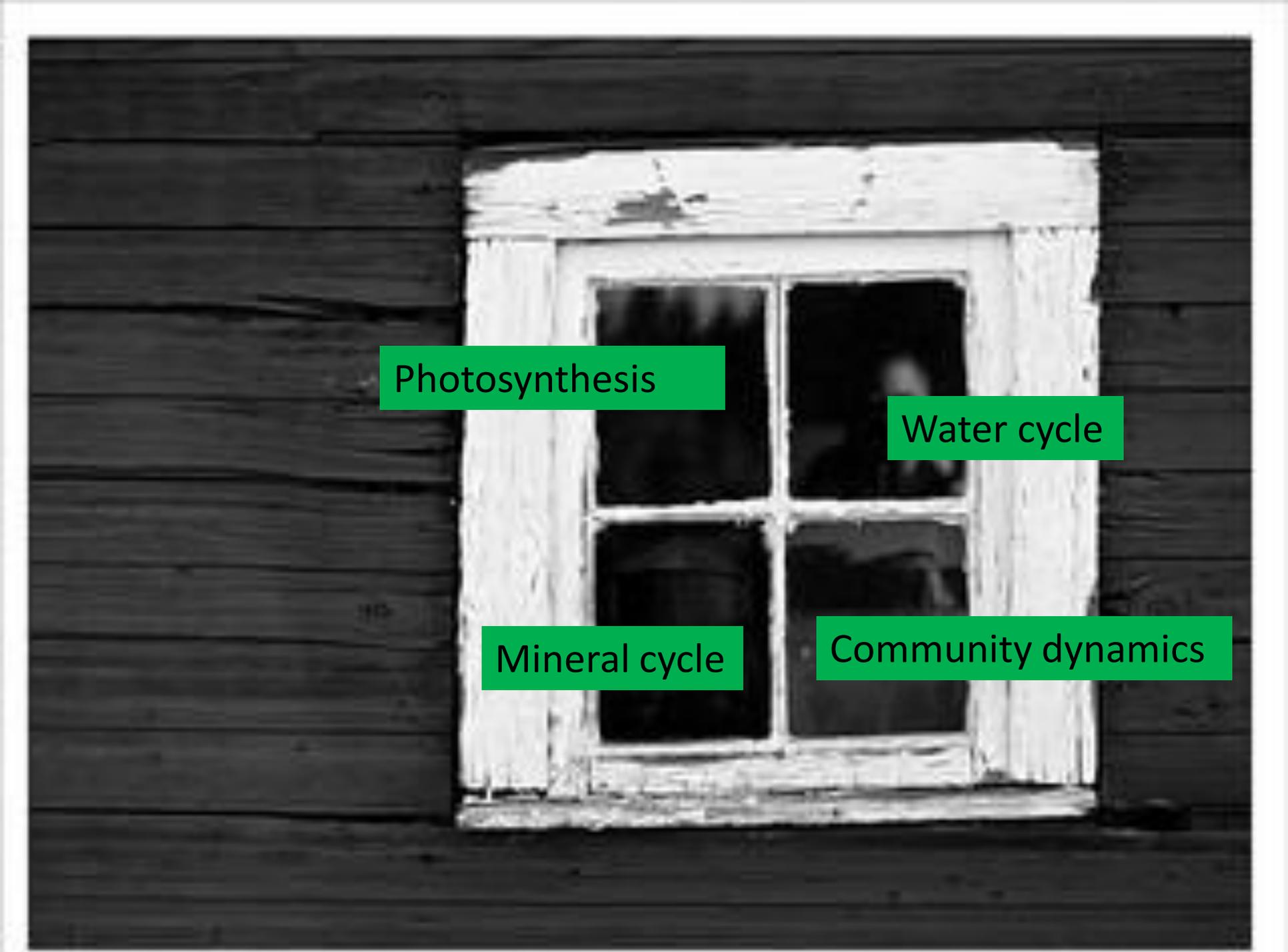












Photosynthesis

Water cycle

Mineral cycle

Community dynamics



