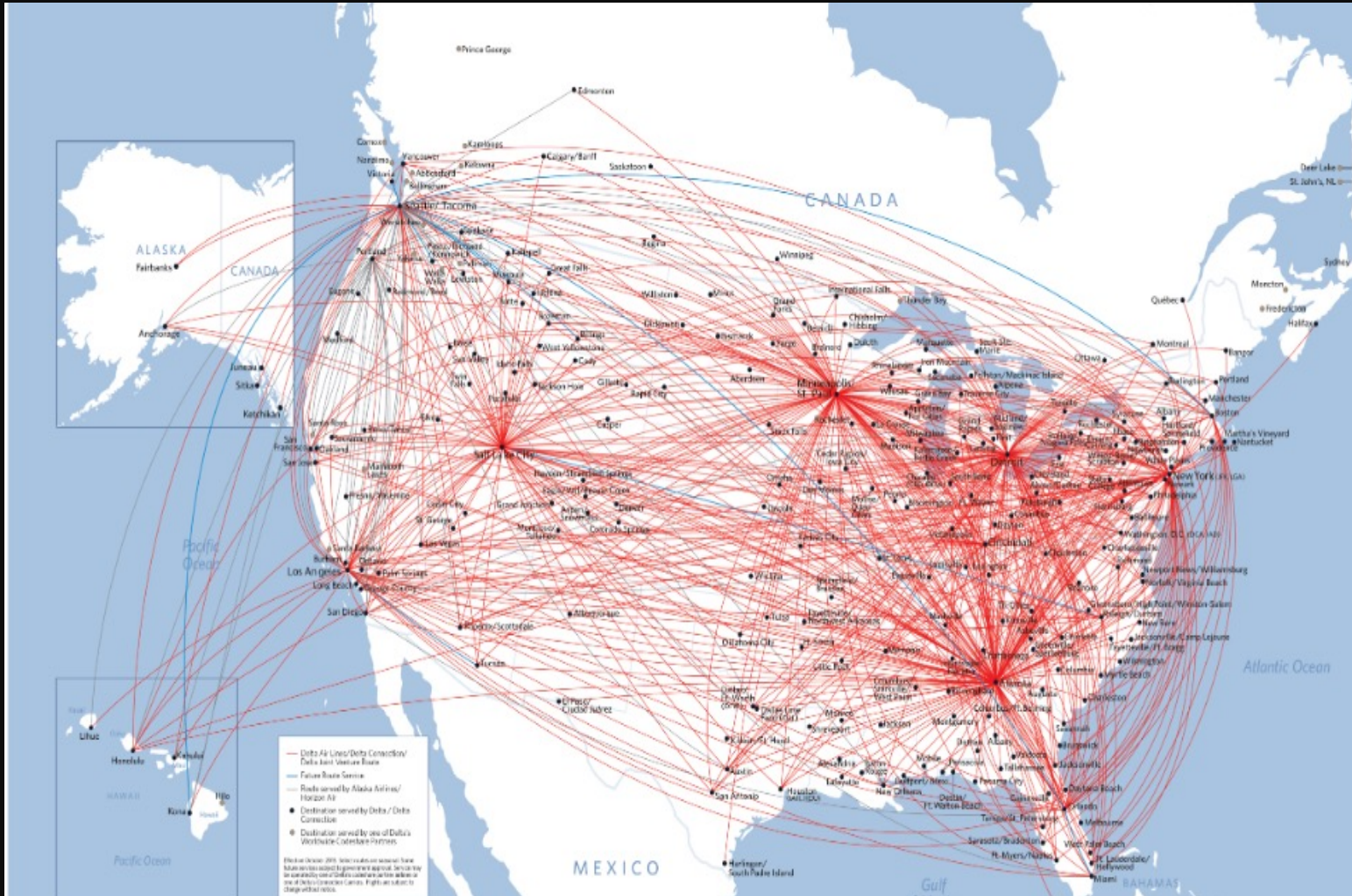


Regenerative Agriculture-The Power of the Plant!

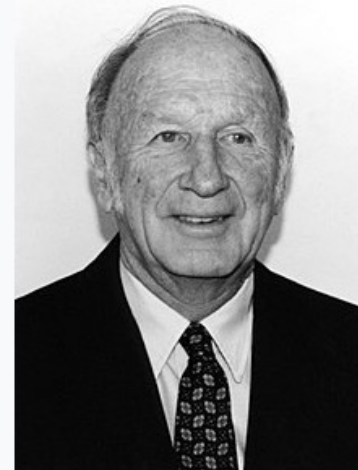
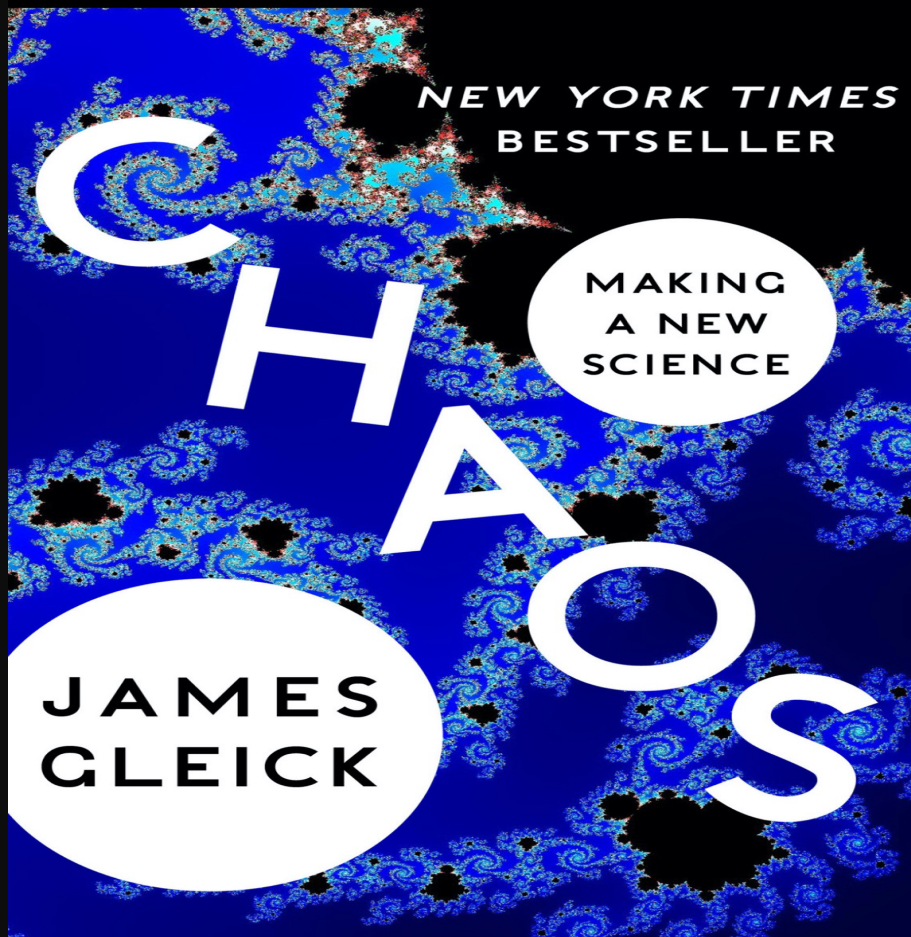
Ray Archuleta

My Soil Health Journey 2007-2023: Millions Of Miles-



Critical Concepts to Understand:

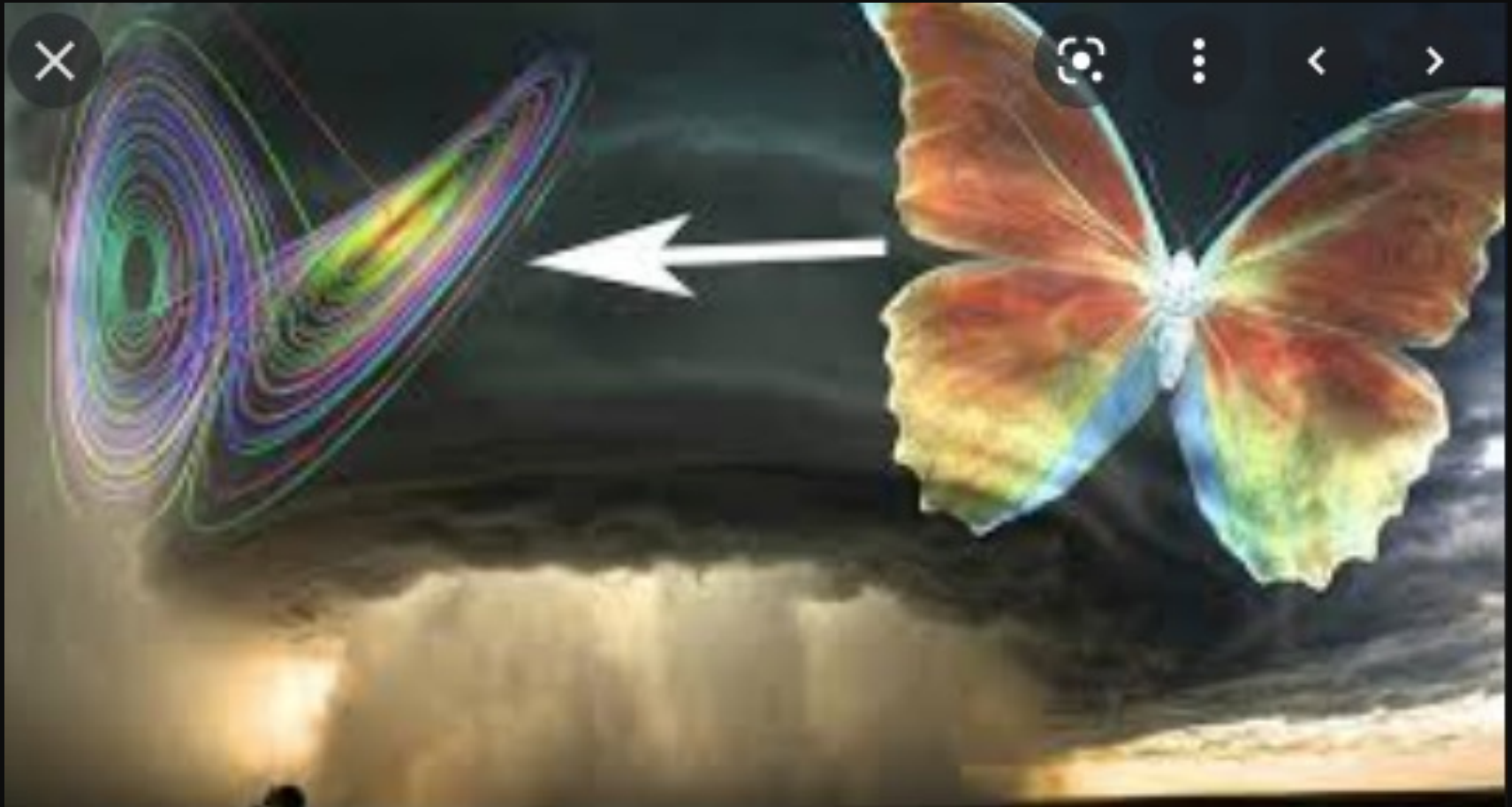
1. All is ONE! SEE THE WHOLE-Relationship and connectedness....”**Butterfly effect**”
2. The Soil is Alive-focus on the Plant!
3. Understand the goal: Mimic Nature’s Design Principles and Patterns.(“**Biomimicry**”)
4. Regeneration Starts with the Mind and Heart.



Edward Norton Lorenz

- Born** May 23, 1917
West Hartford,
Connecticut, United
States
- Died** April 16, 2008 (aged 90)
Cambridge,
Massachusetts, United
States
- Alma mater** Dartmouth College (BA,
1938)
Harvard University (MA,
1940)
Massachusetts Institute
of Technology (SM, 1943;
ScD, 1948)
- Known for** Chaos theory
Butterfly effect
Lorenz attractor
Lorenz energy cycle

The Butterfly Effect





Friden Flexowriter SPD



Chaos: Sensitive Dependence of Initial Condition:

Printer went **3 decimals** and Computer calculated to **6 decimals-1 part in a thousand**

>>>

25	0.210937	-12.249408	24.120034	5.728927	14.312447	30.260715	2.965322	0.136018	21.81
50	1.677274	-1.982322	13.497450	-0.798984	-5.560391	17.228423	-1.546169	1.388104	19.81

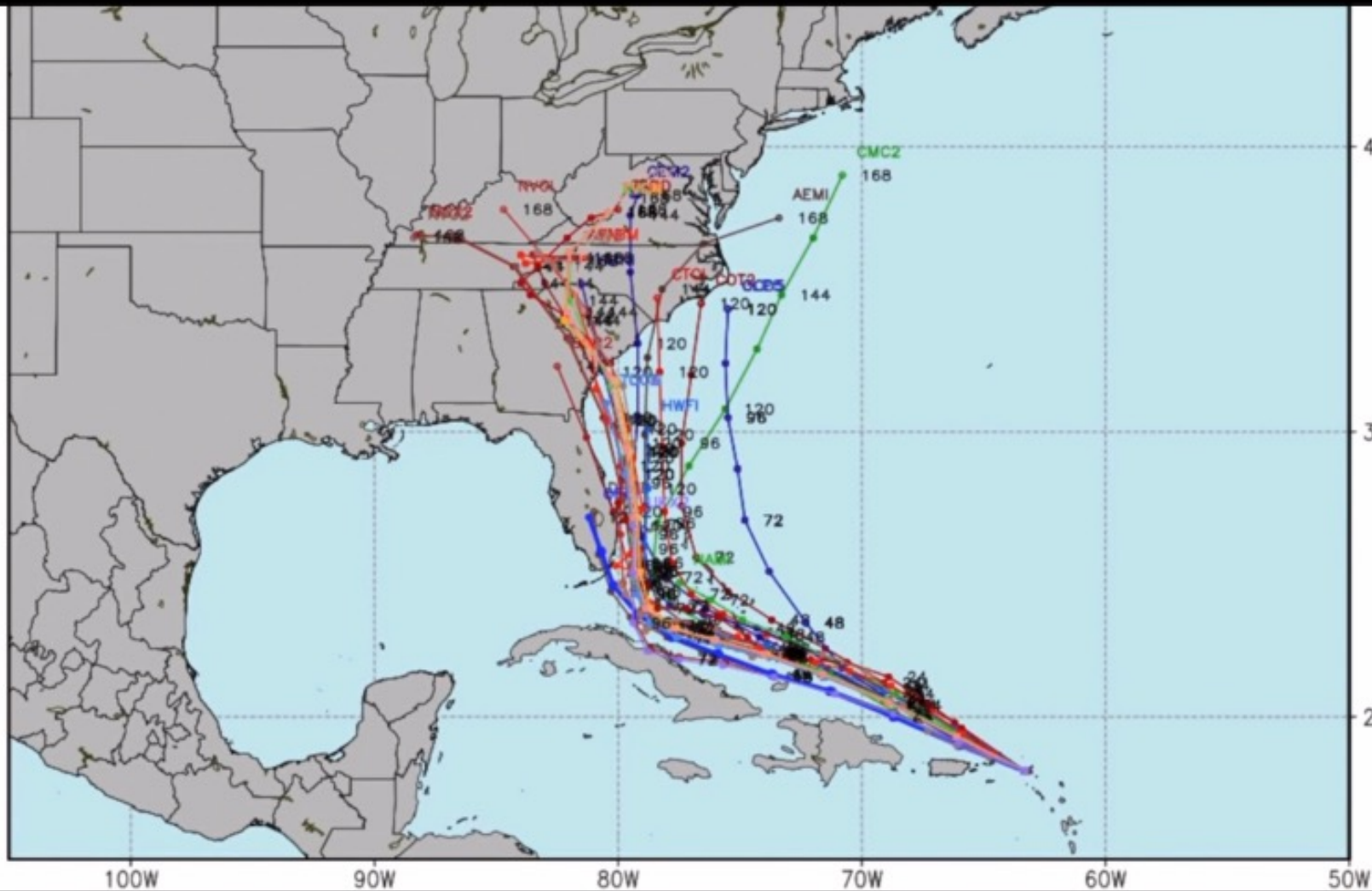
>>>

25	0.211	-12.249	24.120	5.727	14.312	30.260	2.965	0.136	21.81
50	-7.183	-11.345	18.224	-13.864	-3.694	41.232	12.213	17.178	26.81

Predicted **totally different** weather outcomes







- GEN2
- CLP5
- CMC2
- COT2
- CTCI
- DSHP
- EGR2
- HMNI
- HWFI
- NAMI
- NGX2
- NVG2
- NVGI
- OCD5
- OFCI
- RVCN
- TABD
- TABM
- TABS
- TCOA
- TCOE
- TCON
- TVCA
- TVCE
- TVCN
- TVCX
- TVCY
- UKX2

40N

30N

20N

100W

90W

80W

70W

60W

50W

Chaos: Sensitive Dependence of Initial Condition

For want of a nail the shoe was lost.

For want of a shoe the horse was lost.

For want of a horse the rider was lost.

For want of a rider the message was lost.

For want of a message the battle was lost.

For want of a battle the kingdom was lost.

And all for the want of a horseshoe nail.

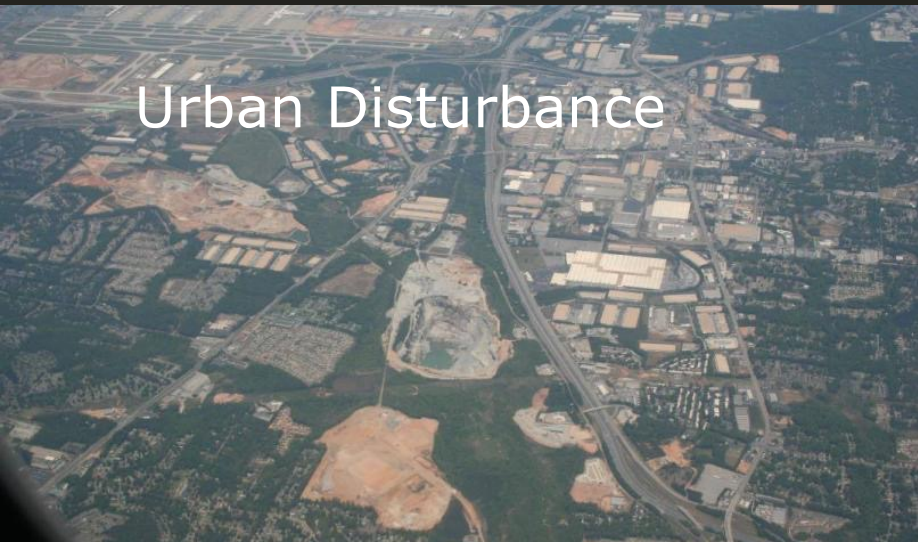
We Humans do Not Grasp the Power of the Plant!



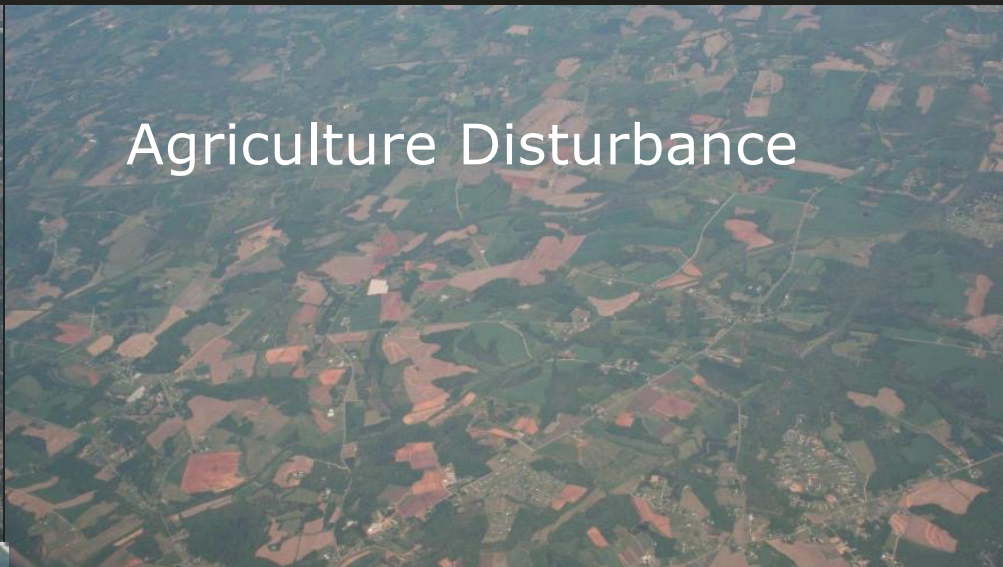
Land is 20-29 percent of Earth Surface- 1/3 is in desert



Urban Disturbance



Agriculture Disturbance




What Have WE Learned In 87 Years?

**Timpas, Colorado,
Jan 12, 2014**



**April 14, 1935
Organic System**



RTA Video

Dust storm in South Dakota, USA (May, 13, 2025)

Pause (k)



0:00 / 3:10



Global Ignorance Global Disconnectedness



Sensible
Heat



Latent
Heat



**This soil is naked, hungry, thirsty
and running a fever!**

**40% Rain-Inland (Plants) 60% Rain
Comes from Ocean**



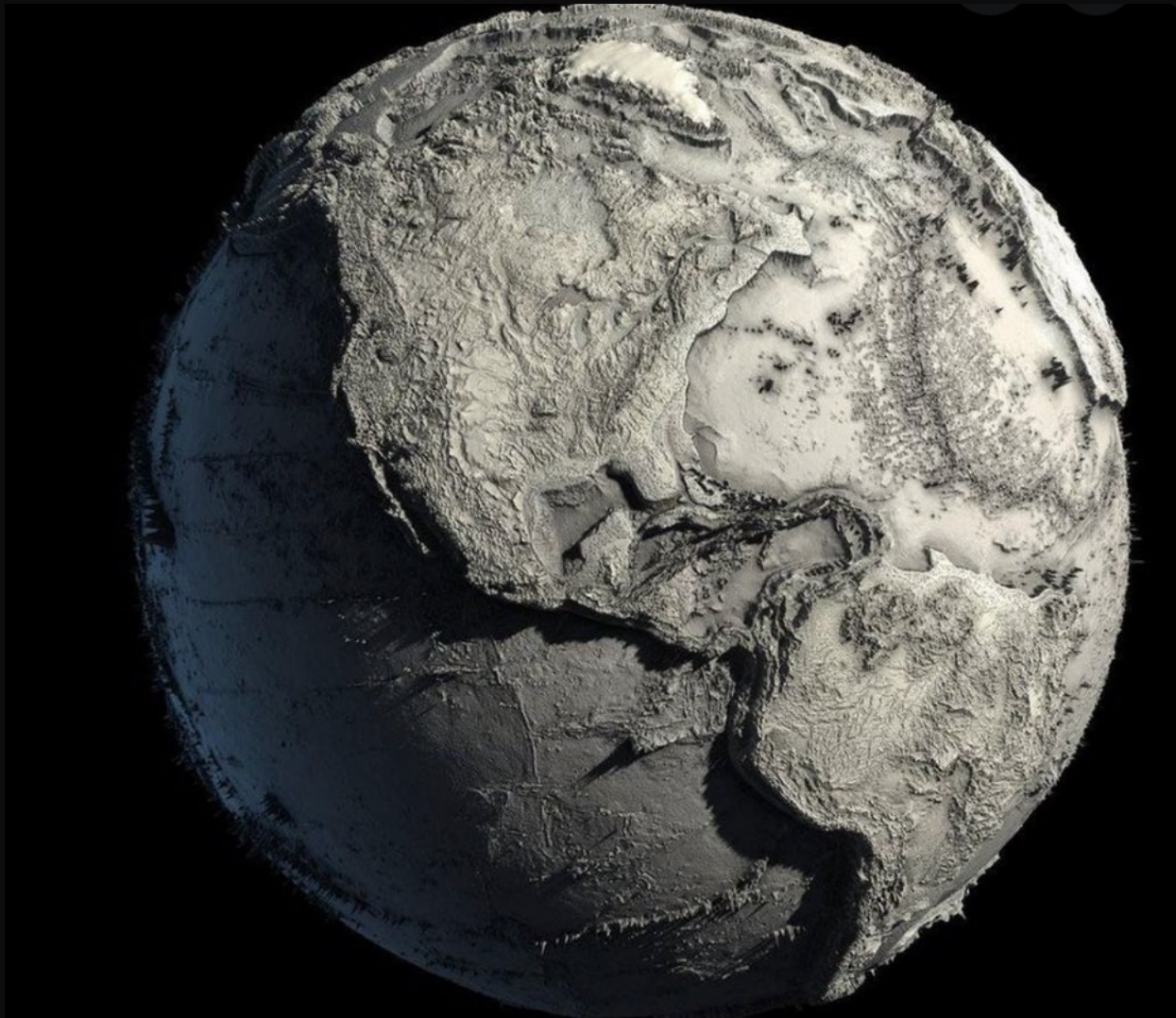


A WORLD WITHOUT PLANTS



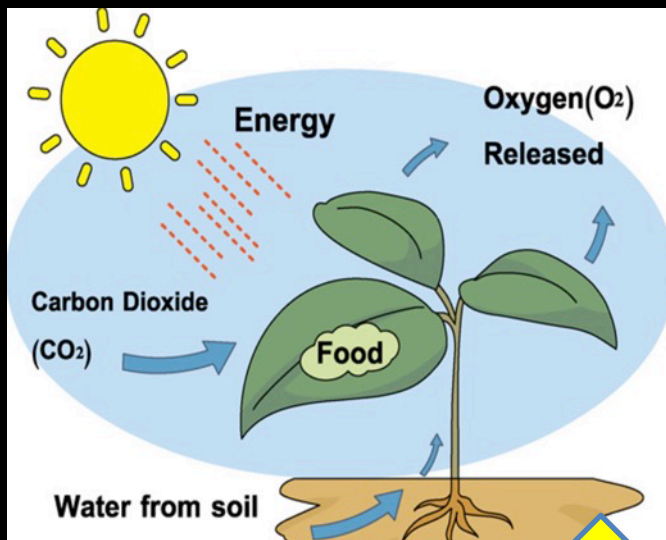
www.indieseducation.com/blog

Minus 243 degrees Fahrenheit (minus 153 degrees Celsius)

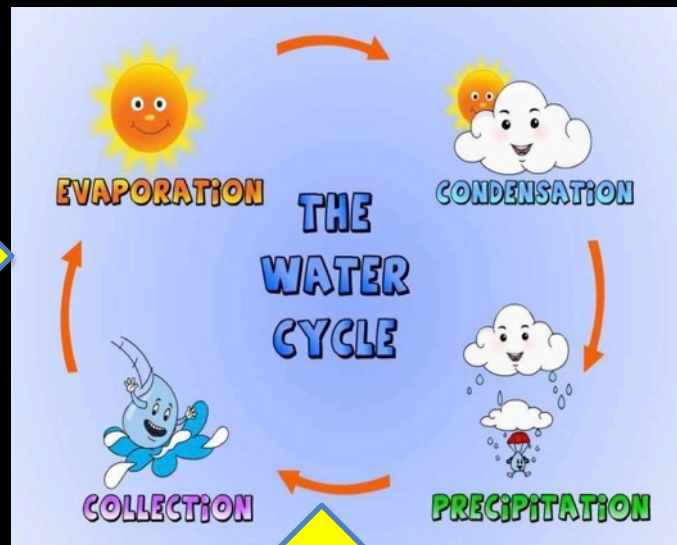


The Four Ecosystem Processes:

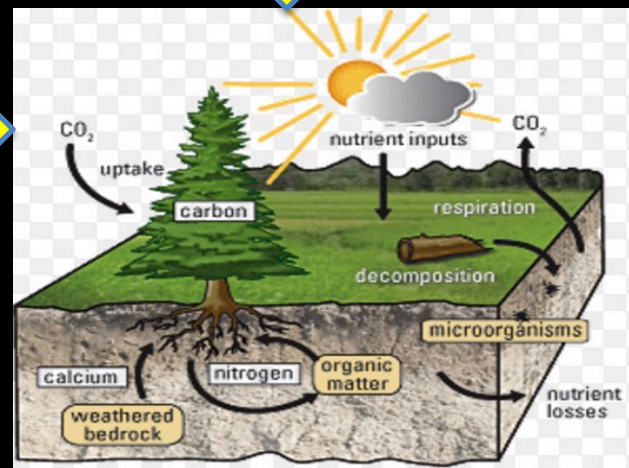
Solar Energy- Chemical Energy



Water Cycle



Community Dynamics-Diversity



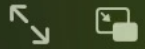
Biogeochemical Nutrient Cycle



Plant and Soil are One

Ray Archuleta

Stomata: Mouth of the Plant



625489248



ASK A BIOLOGIST

ARE PLANTS MADE FROM THIN AIR?

THE STORY OF HOW PLANTS USE CARBON TO GROW

ASKBIOLOGIST.ASU.EDU



Redwood Trees: 4.2 million lbs.
3.99 millions lbs. from air!

95% of a plant's entire biomass on a dry matter weight basis: **Hydrogen, oxygen, nitrogen, and carbon.**

Micronutrients are present in plant tissue in quantities measured in parts per million, ranging from 0.1^[3] to 200 ppm, or **less than 0.02% dry weight.**¹

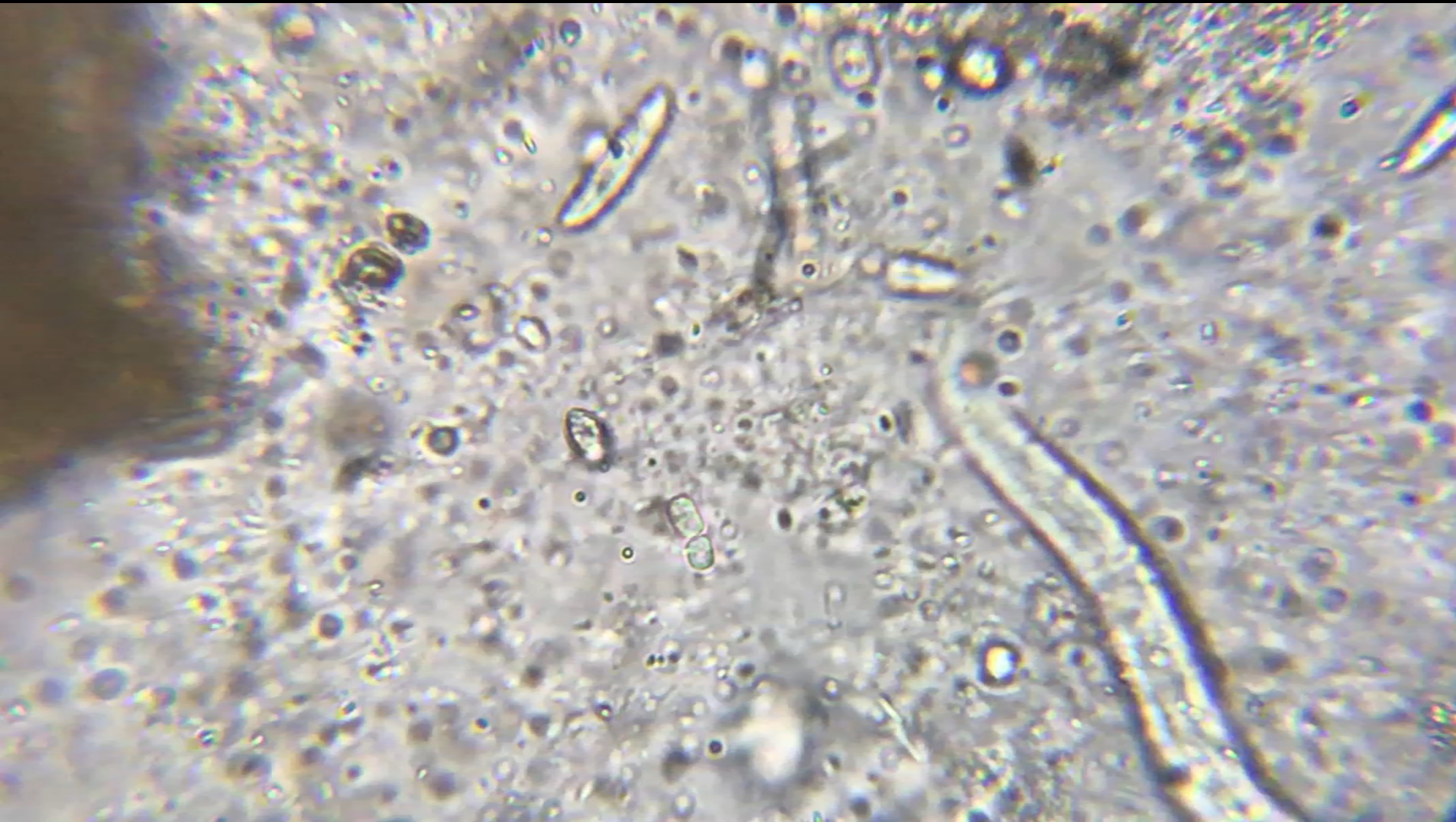
Marschner's mineral nutrition of higher plants (3rd ed.).
Amsterdam: Elsevier/Academic Press.

Natural Grassland Systems



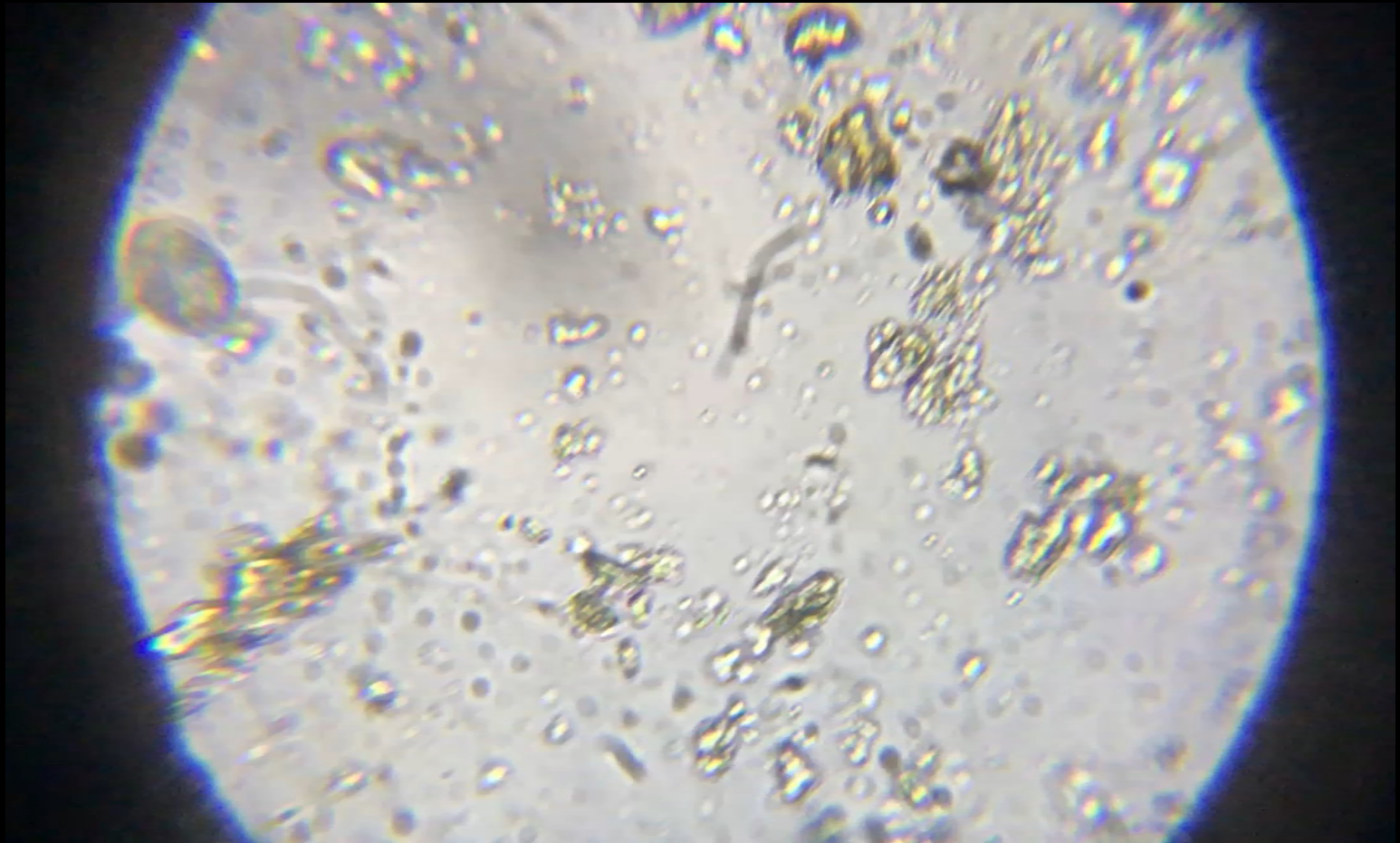
Current Cropping Systems





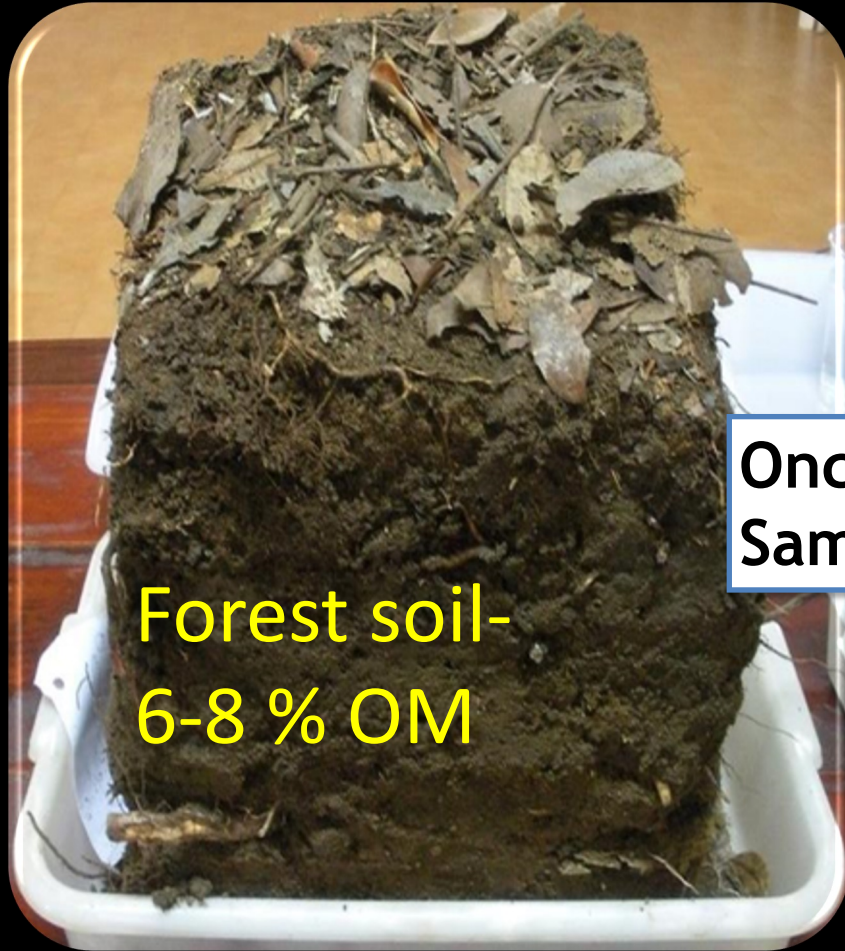
Michael Thompson

High Input No-Till



Michael Thompson

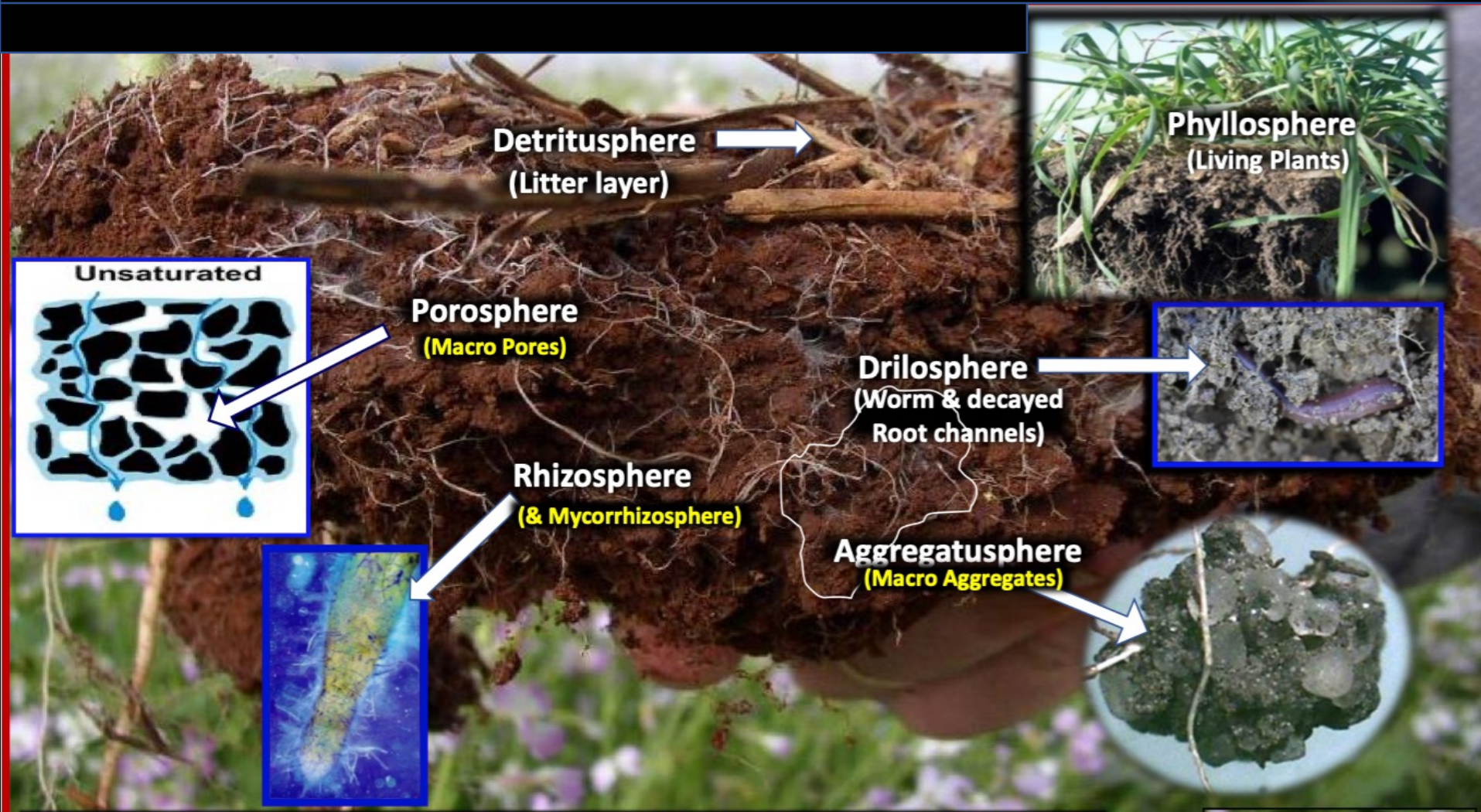
Context: All Soils were Initial Vegetated,
healthy, and functioning!



Once The
Same Soil



Soil Has Design and Order



Coffee County TN: No-till with 3 years of Cover crops

Fall 2014 to Spring 2017

NT without Covers

No-till with Diverse Covers





Same Soil

Soil Organisms take care of Stratification!

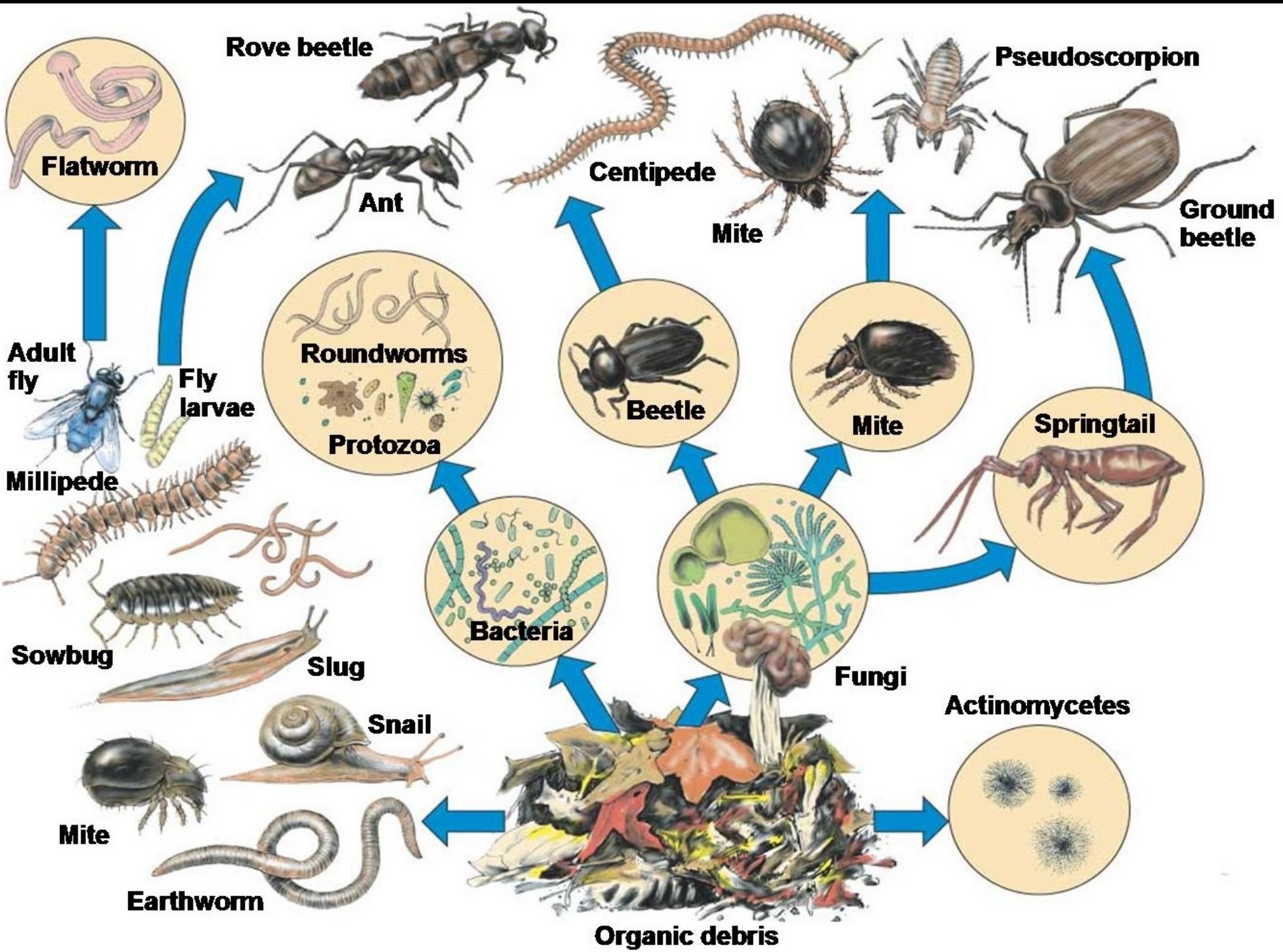
 Paleontology
on Wednesday

Bioturbation with and without soil fauna



 Like  Comment  Share

1.4K Reactions 275 Comments 359K Views



TOTAL VIDEO CONVERTER
HTTP://EFFECTMATRIX.COM



Odette Manard

Aggregates: Microbes and Plants make biotic glues to fuse- Sand, Silt, and Clay to create little marbles (**aggregates**) which make pore-space in the soil. This increases infiltration and water retention.



Death By Tools



TILLAGECIDE



THE HEARTBREAK OF HAYING

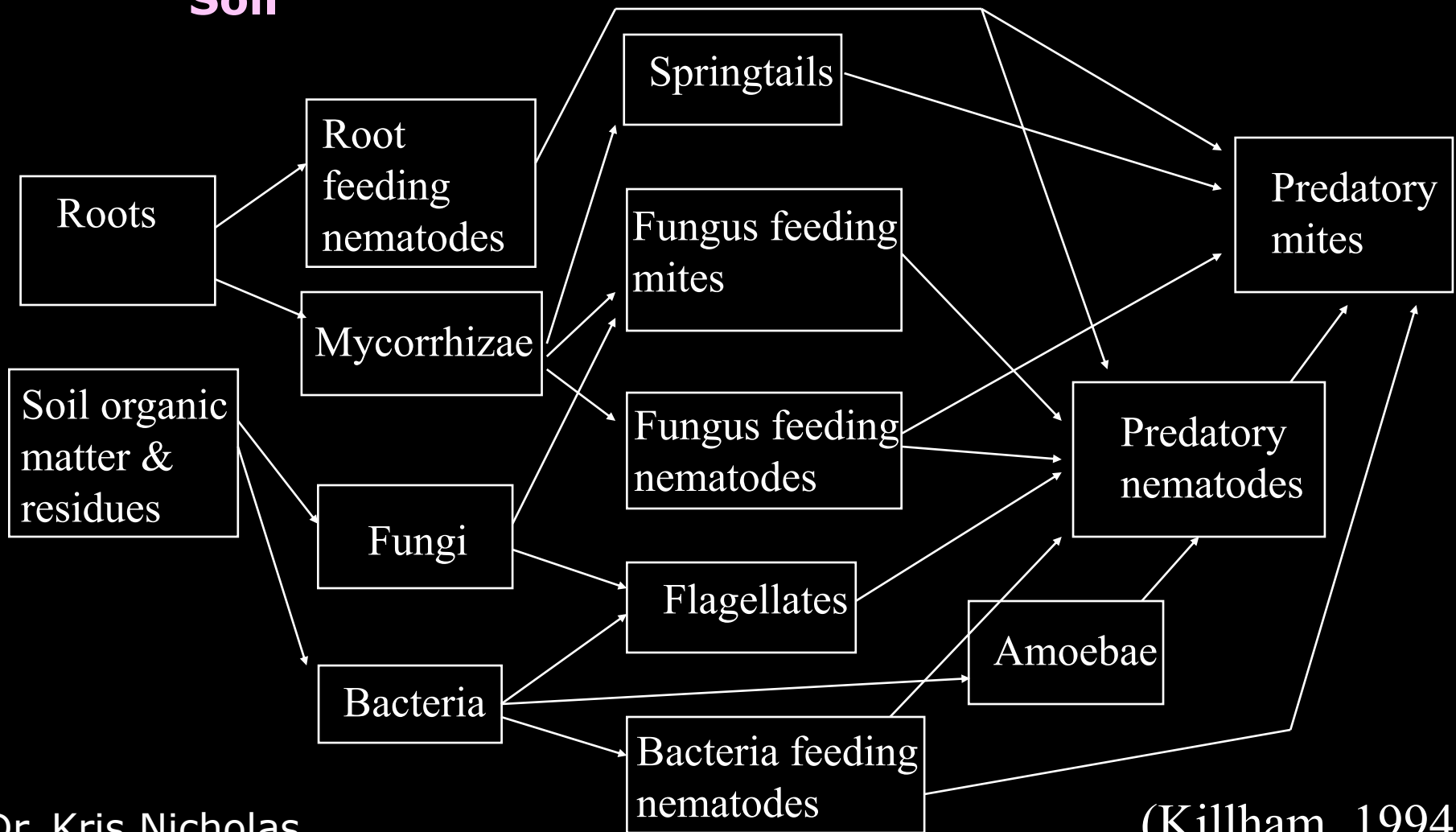


PESTICIDIES

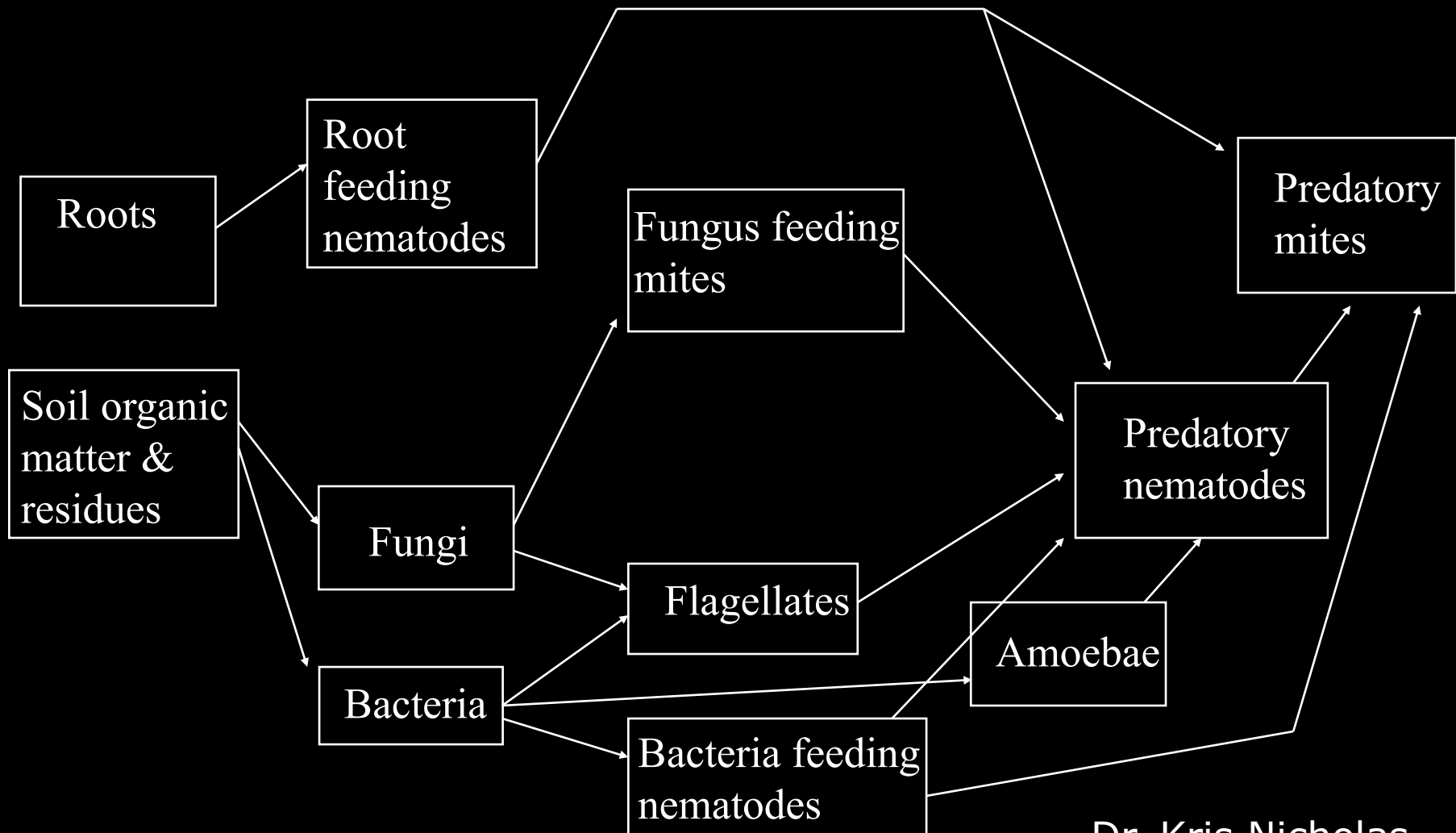


Acute Stress Vs Chronic Stress

The Microbial Food web of Grassland Soil



What happens when an organism is missing?



150 Plants & Animals
24 Hours - Forest



Cape Town, South Africa
100 Plants & Animals
24 Hours - Grassland



Iowa Corn Field
8 Plants & Animals
24 Hours



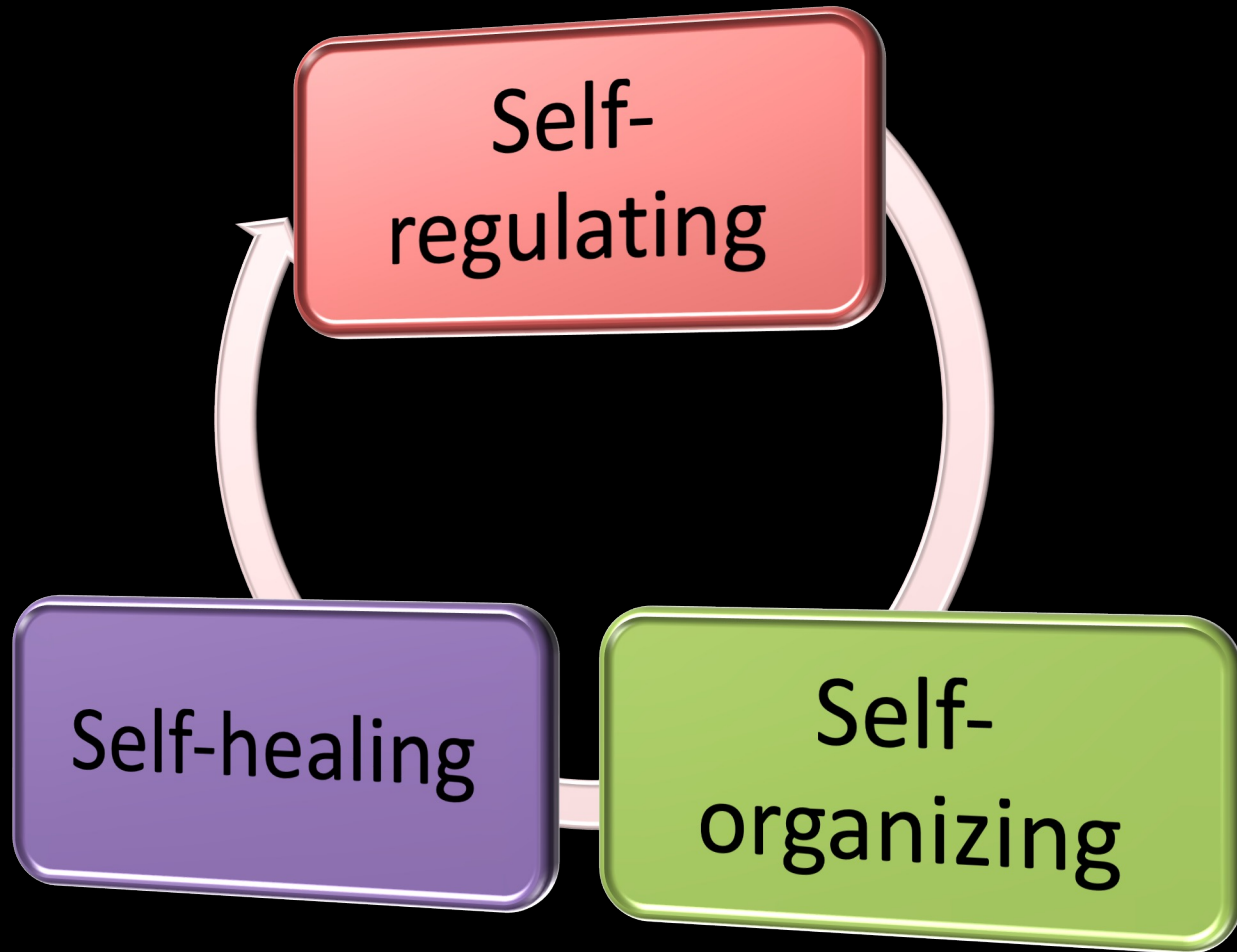
Shovel Test: Where is Your Organic Matter?

Fence row soil test



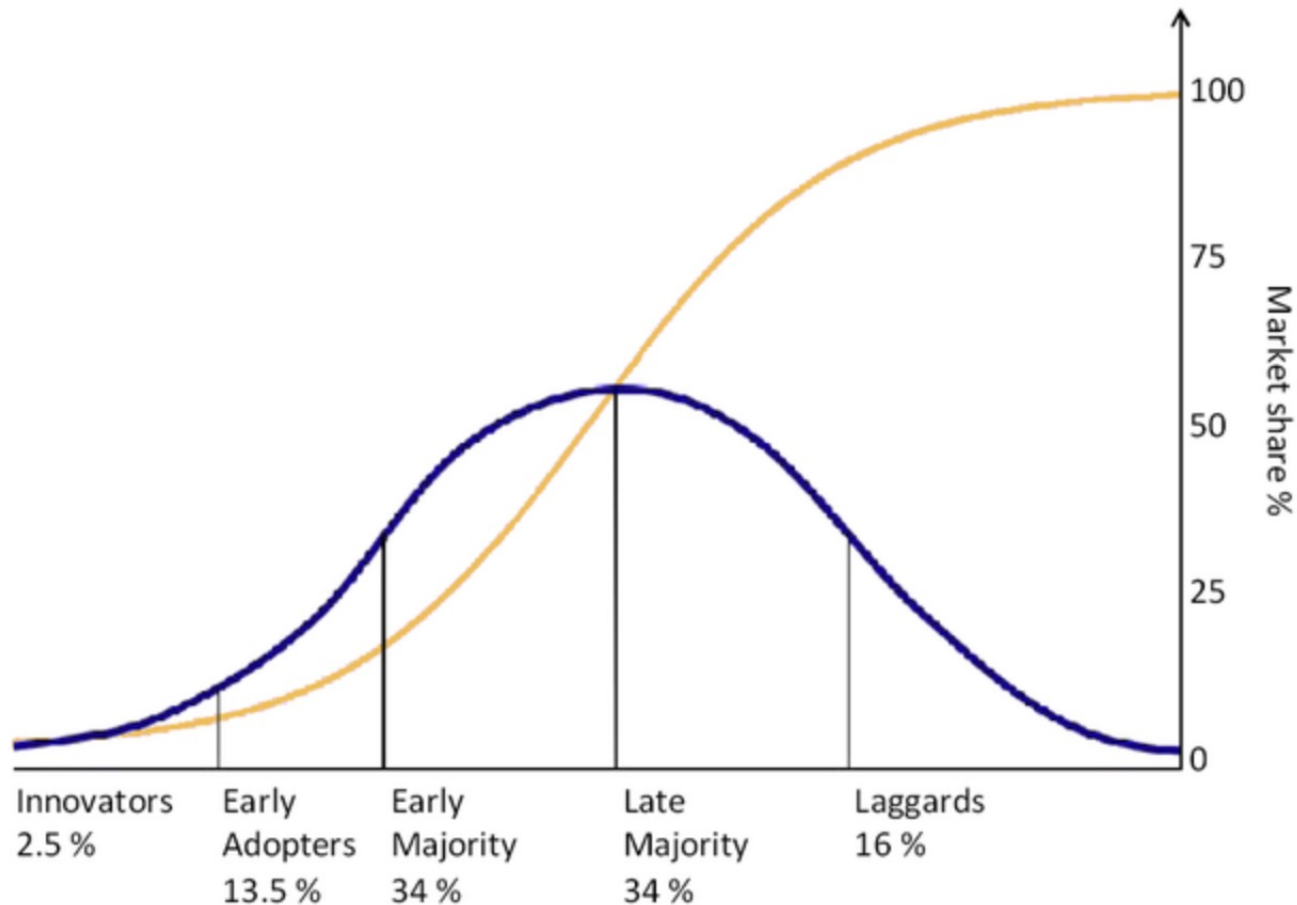
The fence row soil test at Cedara clearly showed that the never-tilled soil (left) was healthier than the soil (right) that had been tilled annually for 38 years.

Understand that the Creation (nature) Is:



Future Agricultural Systems- The Power of **Bio- Communication!**

Regenerative Ag. Movement Diffusion of Innovation



York Farms: Adam York-"I just want Pickup Back"!



BIOMIMICRY: Mimic Life! **How does nature do it?**

Prairie



Forest



Carbon mat (skin): feeds soil, keeps it cool, suppress weeds, and protects from rain drop









10-24-2012

Creating a Skin.....



3 Bales Per Acre





York Farms: Adam York-"I just want Pickup Back"!



Las Damas Ranch-25,000 acres in Chihuahuan Desert



**600 COW-CALF
OPERATION**

**AVERAGE RAIN:
6-11 IN./YR.**

**4TH GENERATION
RANCHING**

The Problem



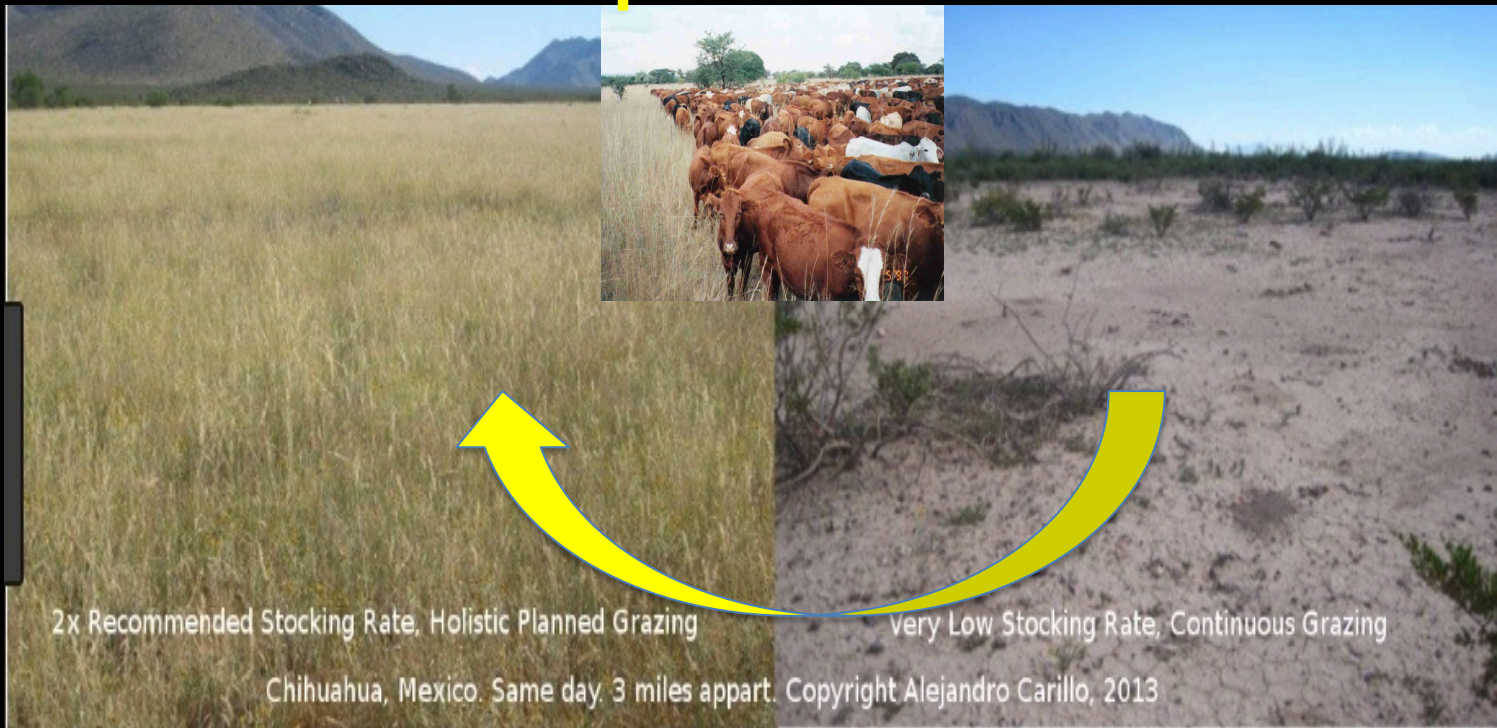
Cattle: Mobile Link-spread seed, Genetic resource Linkers





Bio-communication actively connect habitats in space and time...are termed mobile links!

Mobile Link Species



Tarahumara Cowboys Moving Cows 800 times a Year!



Biomimicry: Emulating Nature's Grazing Patterns



2022 Same Rain, Same Time, Same Area, -Different Mindset!



One cow 250 acres



One cow for 20 acres



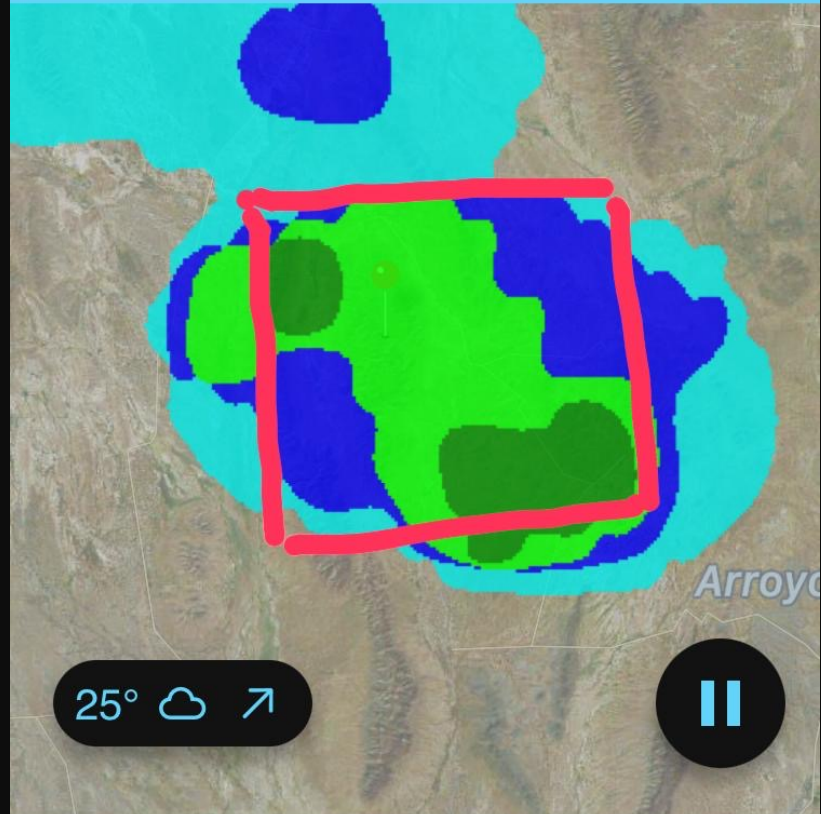
Rain Alarm



Light  Heavy

Aldama

Extra features



25°  



9:00 PM

de manera gratuita por esta Institución y el uso que se le dé, así como su inter



EP Fitness
El Paso Strong For 36 Years

SIGN UP



”It was in an American desert that I suddenly realized that rain does not fall from the heavens—it comes from the ground. Desert formation is not due to absence of rain, but the rain ceases to fall because the vegetation has disappeared.”

—Masanobu Fukuoka

Our RESILIENCE is
built on ANIMAL
IMPACT, LONG REST
PERIODS, AND
ADAPTED GENETICS!

THE BIGGEST OBSTACLE IN LIFE: **ITS' THE WAY WE LOOK AT THE WORLD!**

MINDSET:

A lens or frame of mind which orients an individual to a particular set of associations and expectations



1. Goal- Mimic Life's Intelligent Design and Patterns!

Prairie



Forest



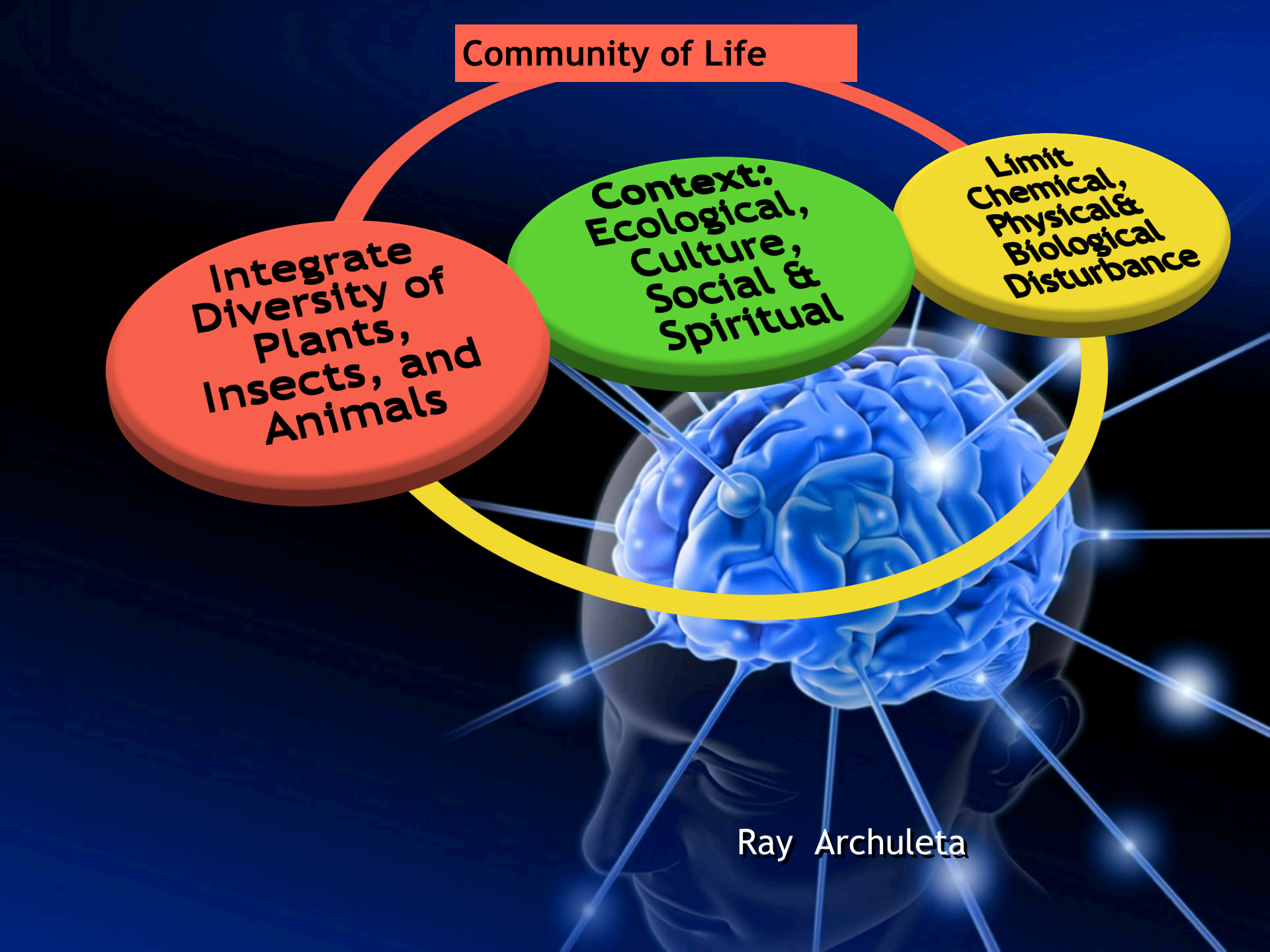
Community of Life

**Integrate
Diversity of
Plants,
Insects, and
Animals**

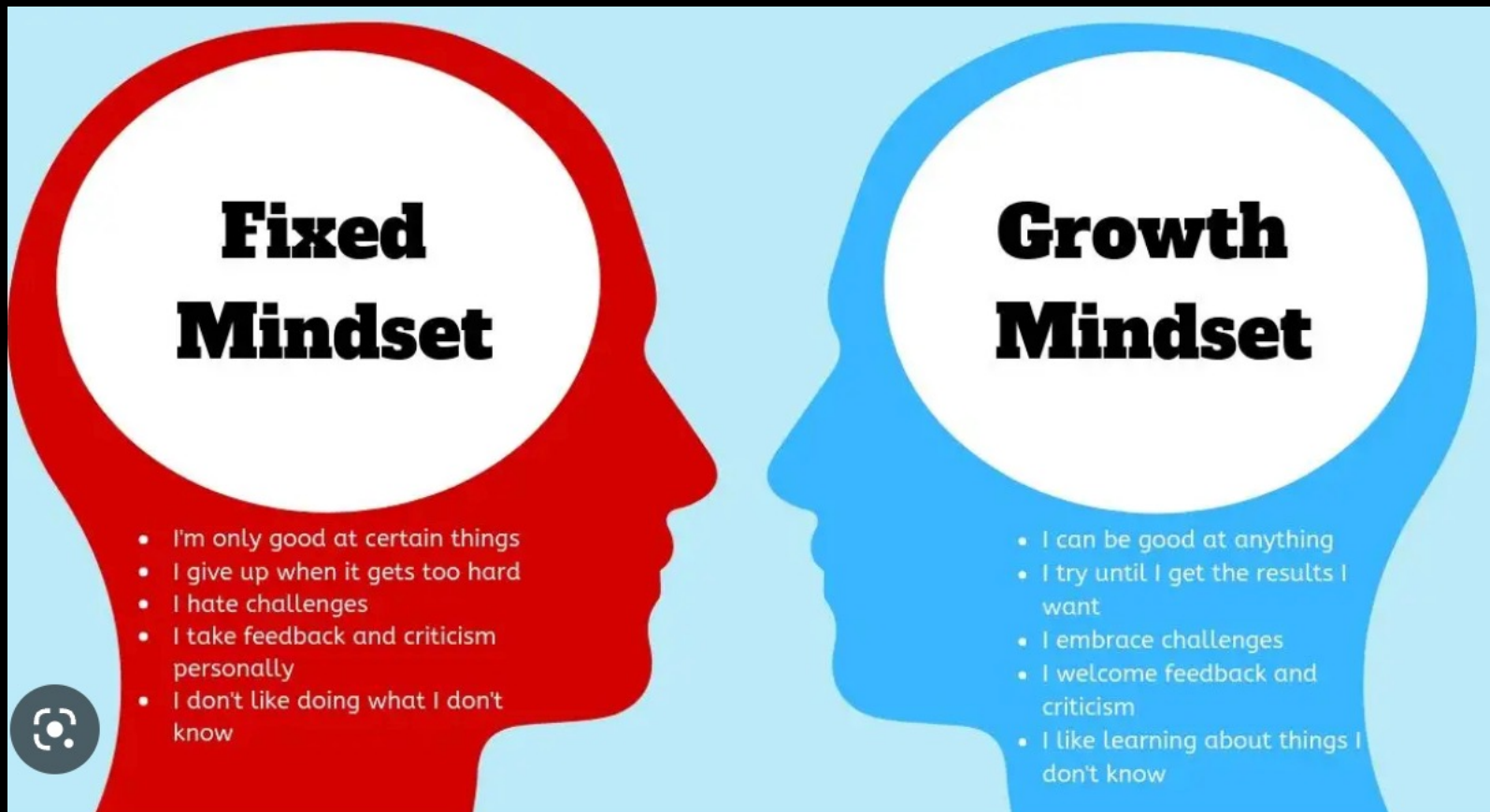
**Context:
Ecological,
Culture,
Social &
Spiritual**

**Limit
Chemical,
Physical &
Biological
Disturbance**

Ray Archuleta



2. Humility! Do You have a Growth Mindset or Fixed mindset.



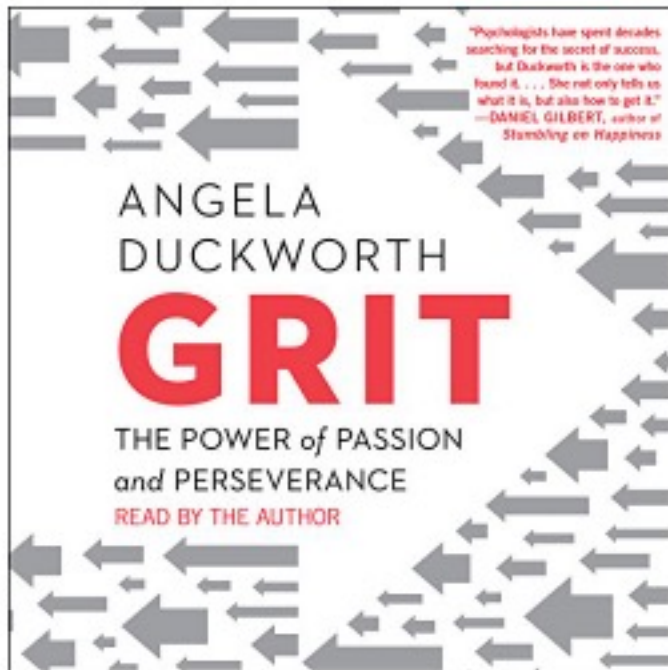
Les Seiler-Fulton County Ohio- Great Example of Humility!



Three Pillars of **LEARNING**



◀ Back to results



▶ Audible sample

◀ Back to results

UPDATED EDITION

CAROL S. DWECK, Ph.D.

mindset

THE NEW PSYCHOLOGY OF SUCCESS

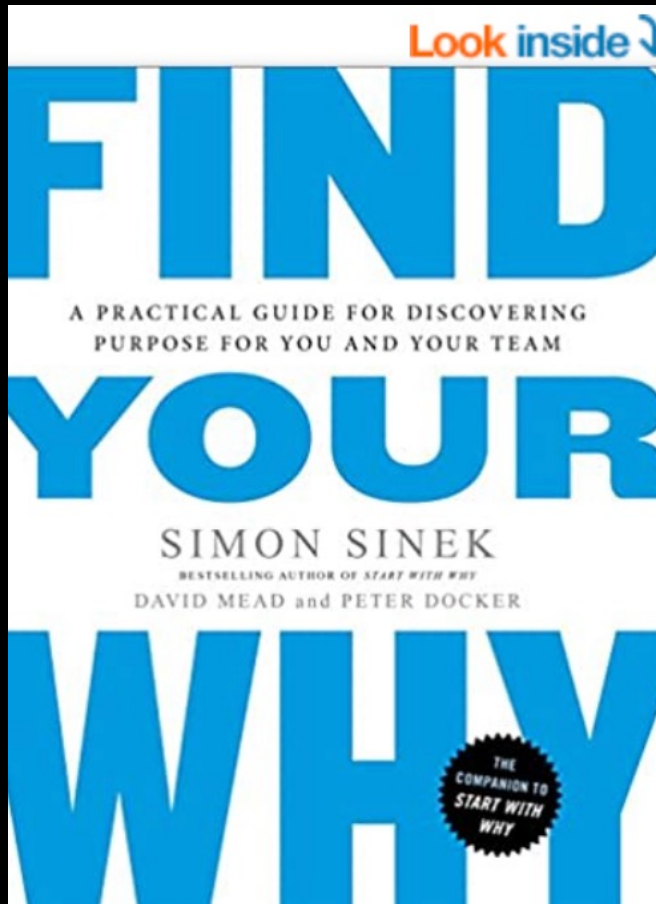
HOW WE CAN
LEARN TO FULFILL
OUR POTENTIAL

- *parenting
- *business
- *school
- *relationships

2
MILLION
COPIES
IN PRINT

"Through clever research studies and engaging writing, Dweck illuminates how our beliefs about our capabilities exert tremendous influence on how we learn and which paths we take in life."
—BILL GATES, *GatesNotes*

▶ Audible sample



German philosopher Frederick Nietzsche once said, “He who has a why can endure any how”.

Only when you know your ‘why’ will you find the courage to take the risks needed to get ahead, stay motivated when the chips are down, and move your life onto an entirely new, more challenging, and more rewarding trajectory.

3. Do your own research! And work with a group of farmers-that drank the soil health Kool-Aid!

**A Guide to On-Farm
Demonstration
Research**

How to Plan, Prepare, and Conduct
Your Own On-Farm Trials

**You have only 60
Opportunities!**



Russ Hedrick (NC):2022 National Dryland Corn Champion: 459.51bu./ac

Why?

1. He do not grow up farming-
2. He is a farmer Scientist- Always learning-ask questions. He networks .
- 3.He is intentional-Manage the details
- 4.He is Tenacious-does not give up
5. Understand how the soil works



Russ Hedrick (NC):2022 National Dryland Corn Champion: 459.51bu./ac

Logistics?

1. Careful with Physical and Chemical disturbance- (great nutrient mgmt.)
2. No-till (over-10 years)
3. Cover crops-diversity
4. Haney Soil test-PLFA
4. Community



GREEN PLANTING



https://www.youtube.com/watch?v=en_WpA9th0E

Jay Young-Kansas-207 bu./corn-No Nitrogen and Phosphorus



TRIBUNE

Kansas Farmer Raises 207 Bushel Corn Without Applying Fertilizer!

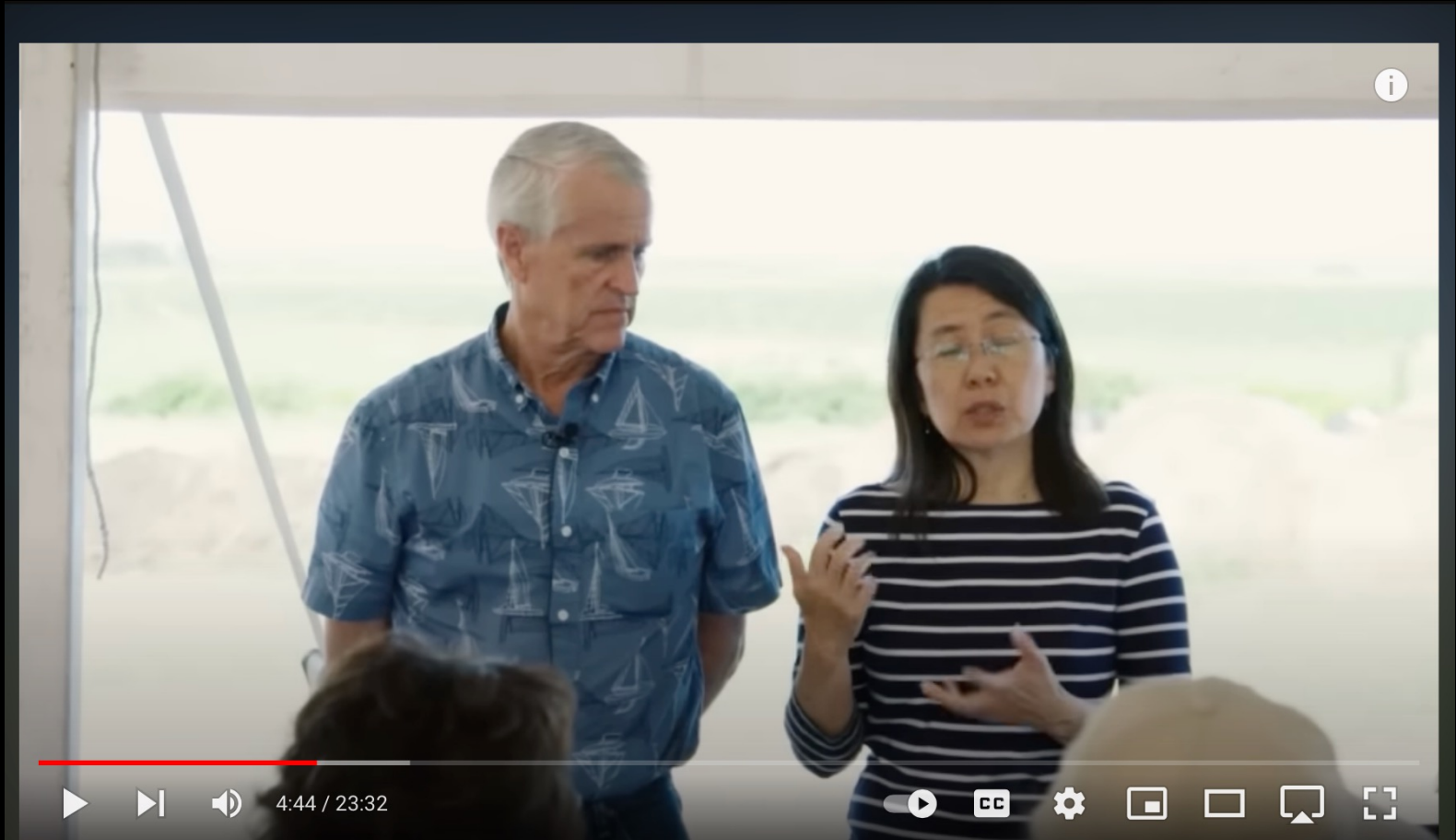
Tribune, Kansas-17.86 avg. rain.

Jay Young-Kansas-Makes Johnson SU Bio-Reactor



Tribune, Kansas-17.86 avg. rain.

Jay Meets David and Hu-Chin Johnson



Tribune, Kansas-17.86 avg. rain.

Jay Young-Attends YouTube University and Conferences-Plus Inspired By Others and Farmers

Michael Thompson



Jimmy Emmons



Dr. Christine Jones

3) Understand your Context: Breaking The Spell of Social Conditioning:

That we learn from our families, Schools, Jobs,
Church's, jobs, and our communities....



Social Conditioning

Pause (k)



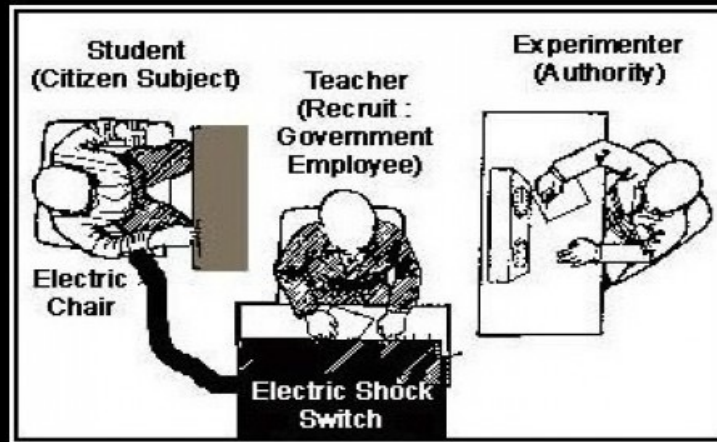
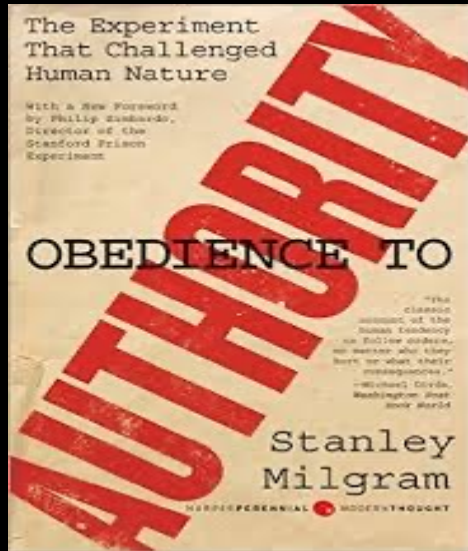
0:00 / 1:25



YouTube



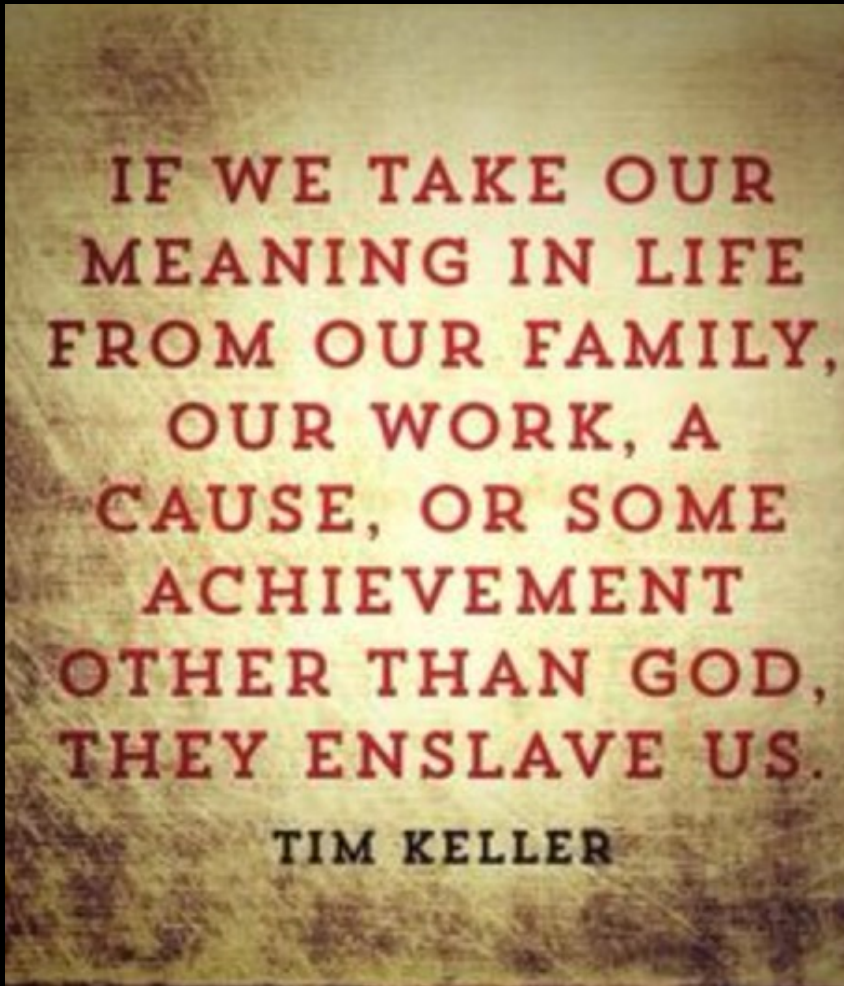
The Man that shocked the World: Uncovers truth about human nature



THE MILGRAM EXPERIMENT

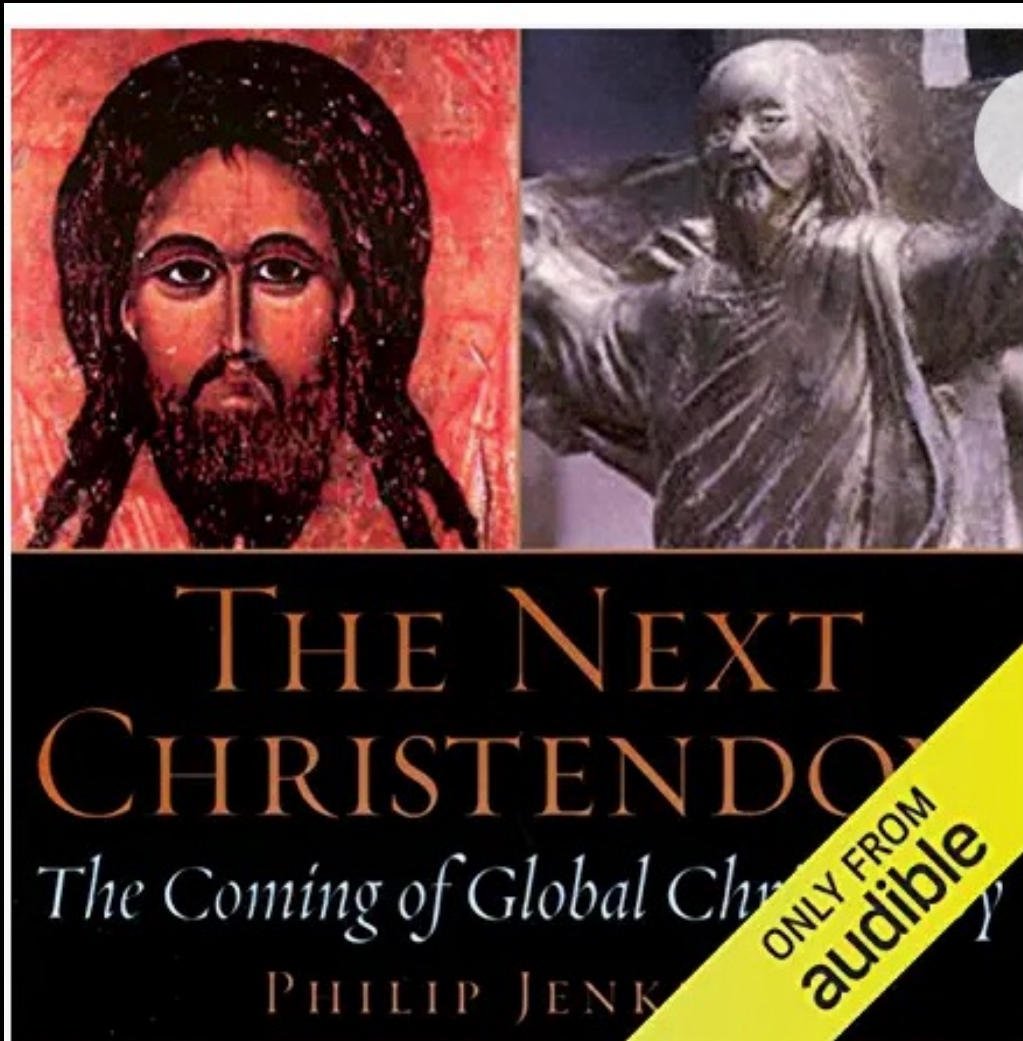
Dr. Stanley Milgram (August 15, 1933 – December 20, 1984)

4) Have the right Identity



Dr. Timothy Keller

The Next Christendom



Christian Film Festival September 2022
'Dominion' by Lindsey Ward



Wrong Paradigm:
Wrong teaching-
wrong Results!

Dominion

End Times



*“Regenerative Agriculture is a journey for Life!
It’s a renewal of the human heart and mind. A
new way of thinking that loves and emulates
Creation intelligent design that heals human and
biological communities !”*



Ray Archuleta