

The California Climate Policy Summit 2022

Accelerating action for Natural Carbon Sequestration (Accrual)

the climate center

Regenerative Agriculture: Natural Carbon ~~Sequestration~~ Accrual

California Climate Policy Summit 2022

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California State University Chico

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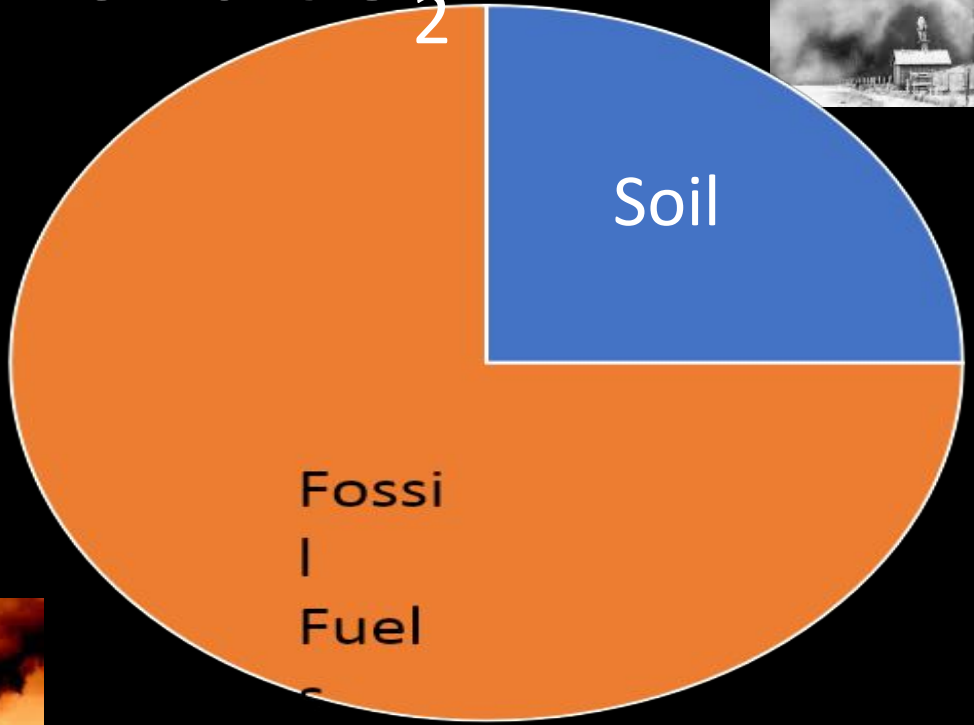
Atmospheric CO_2



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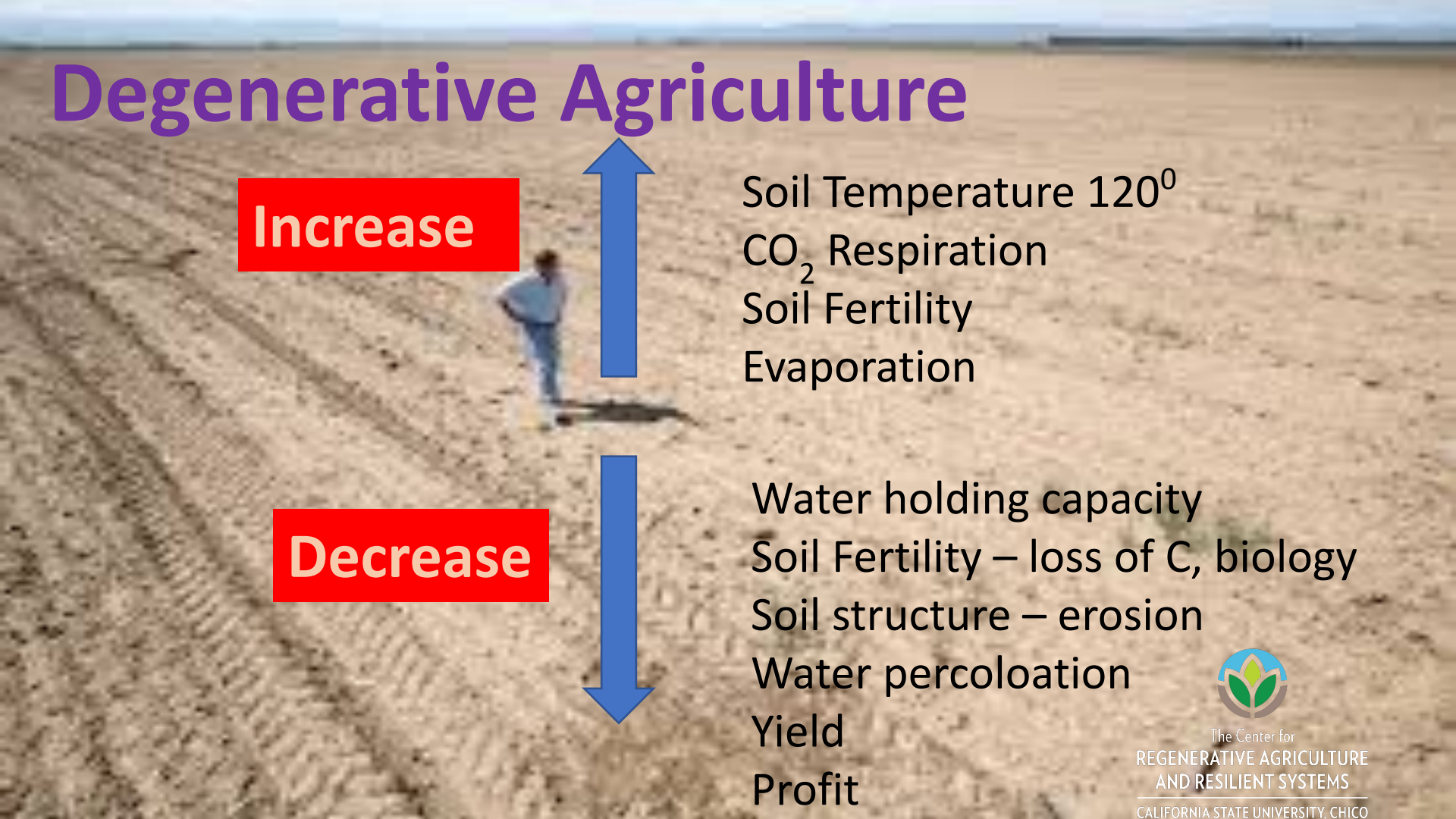
https://www.ipcc.ch/site/assets/uploads/2018/02/TAR-03.pdf

Degenerative Agriculture



Increase

Soil Temperature 120^0
CO_2 Respiration
Soil Fertility
Evaporation

Decrease

Water holding capacity
Soil Fertility – loss of C, biology
Soil structure – erosion
Water percoloation
Yield
Profit

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Reuters
SUSTAINABILITY

Only 60 Years of Farming Left If Soil Degradation Continues

Generating three centimeters of topsoil takes 1,000 years, and if current rates of degradation continue all of the world's topsoil could be gone within 60 years, a senior UN official said

2015

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The Erosion of Civilization

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Some essential principles

Regenerative Agriculture

- No-till, minimum disturbance.
- Soil cover – live root in the ground
- Diversity / Rotation
- If possible, consider inclusion of livestock

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Famine to Food Security

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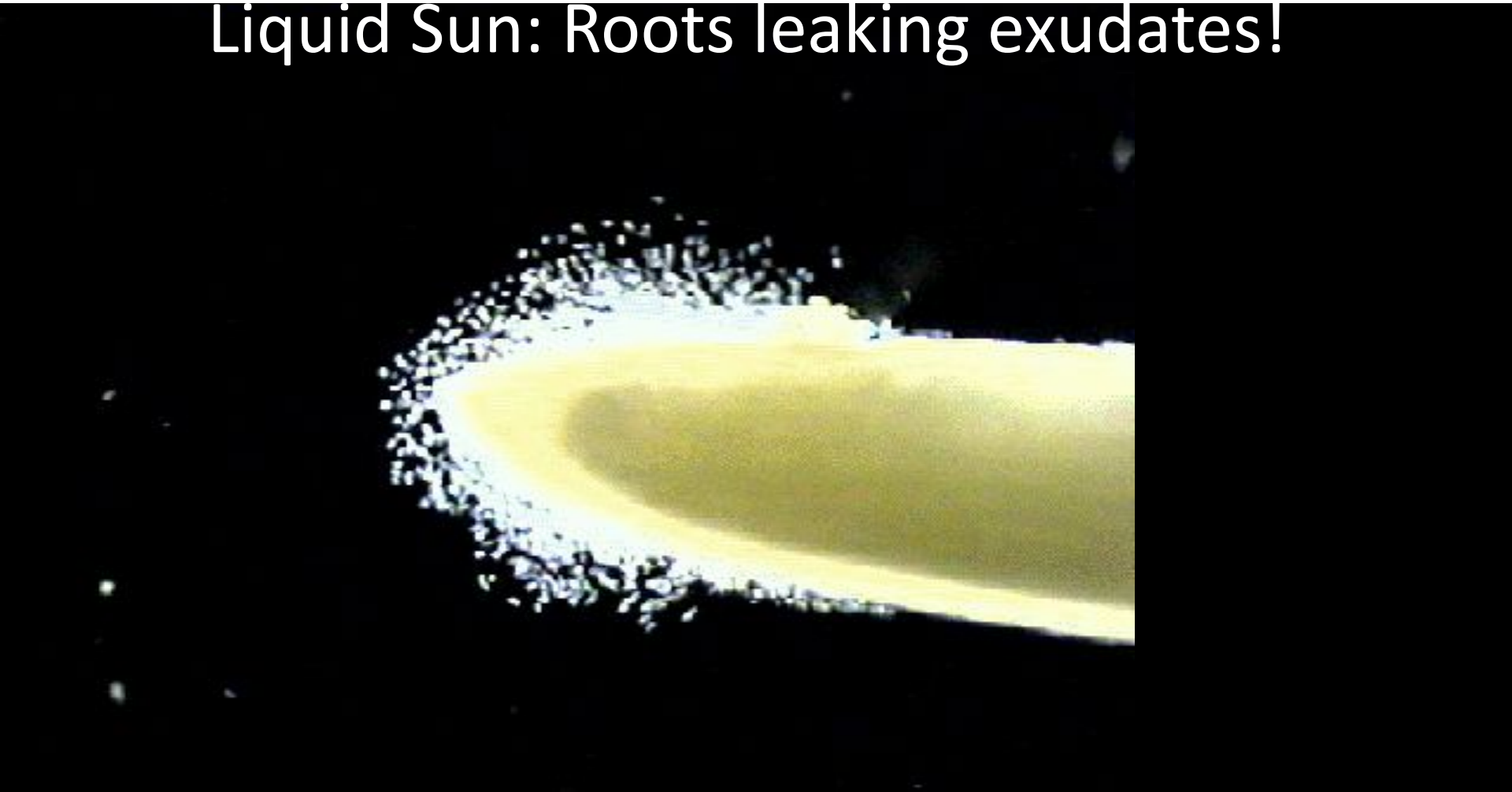
Liquid Sun: Roots leaking exudates!



1, 2, 4, 8, 16 Plant Species

0, 100, 200 N/ac/yr

22% more carbon

200#s N can not produce what diversity produces

Jena Studies on Biodiversity

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New Paradigm

CSU Chico, Willcox, AZ
10.8 tons of C/ha/yr

Average
10.5 tons C/ha/yr

Russell Hedrick, NC
8.5 tons of C/ha/yr

David Johnson, NM
10.7 tons of C/ha/yr

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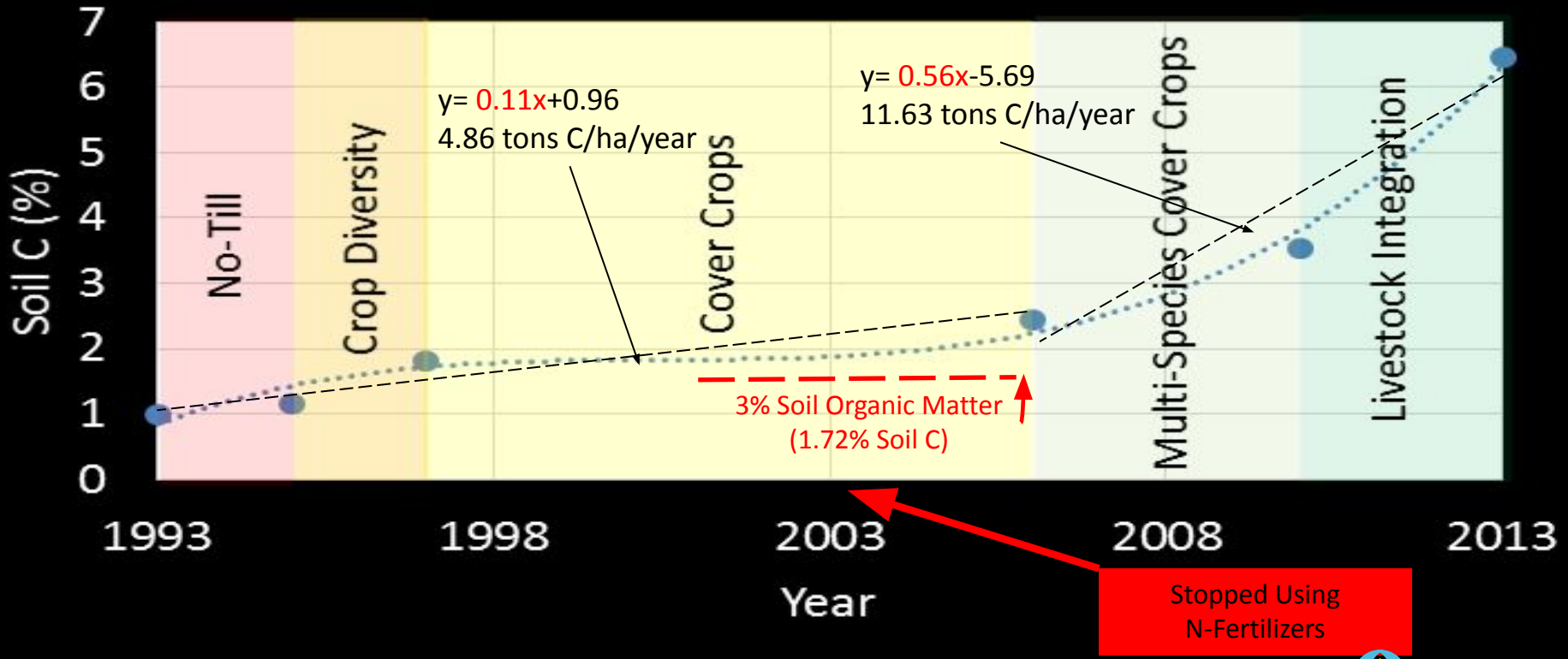
Gabe Brown, ND
11.6 tons of C/ha/yr

Gabe Brown's Soil Carbon Data



New Mexico State University

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David C. Johnson- NMSU Institute for Sustainable Agricultural Research (ISAR)

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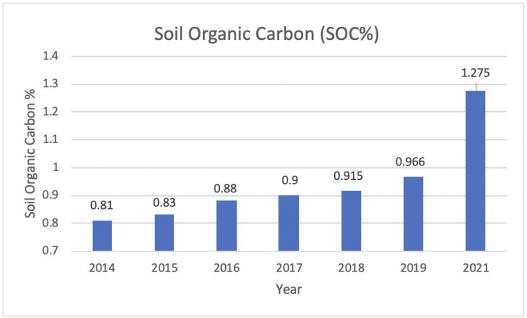
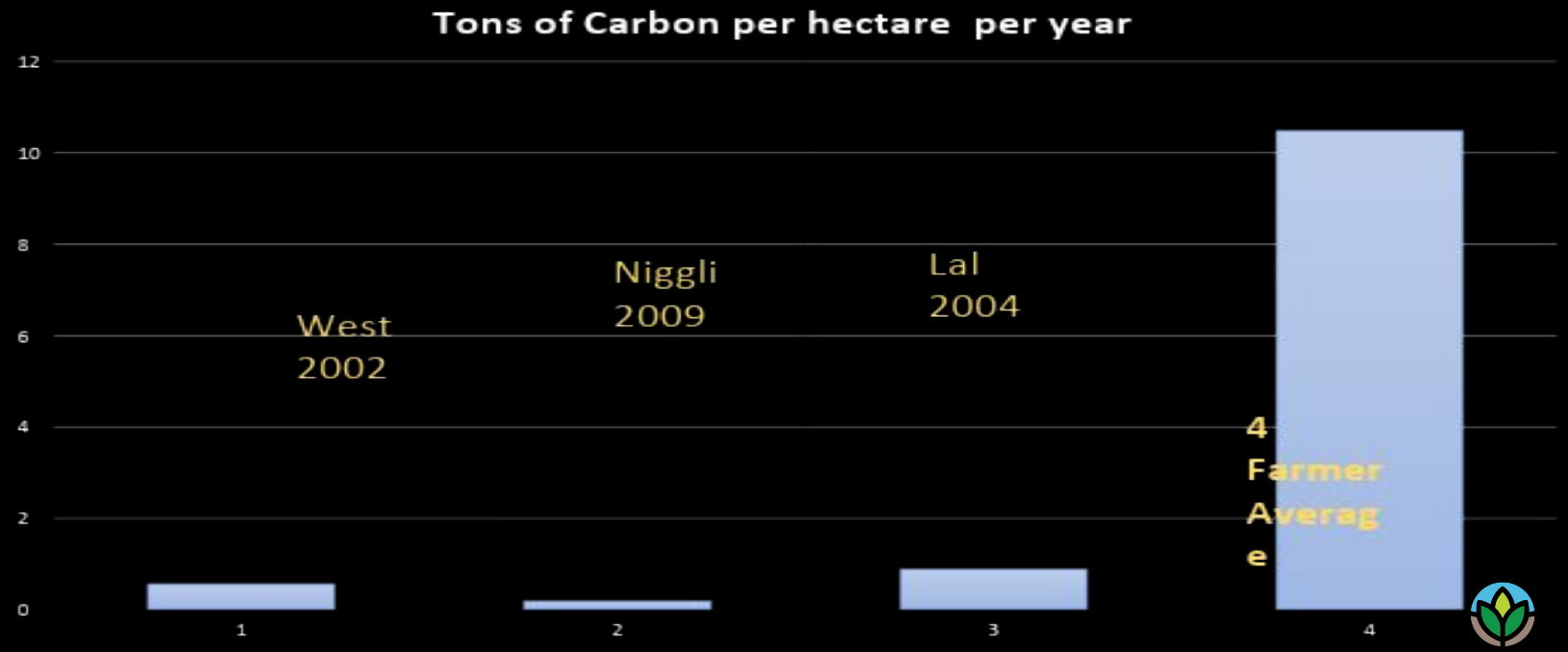
Figure 3: Change in soil organic carbon (SOC%) from 2015 to 2019 during adoption of no-till farming practices and after adoption of no-till farming practices + multispecies cover crops from 2019 to 2021.



Regenerative Agriculture = Future



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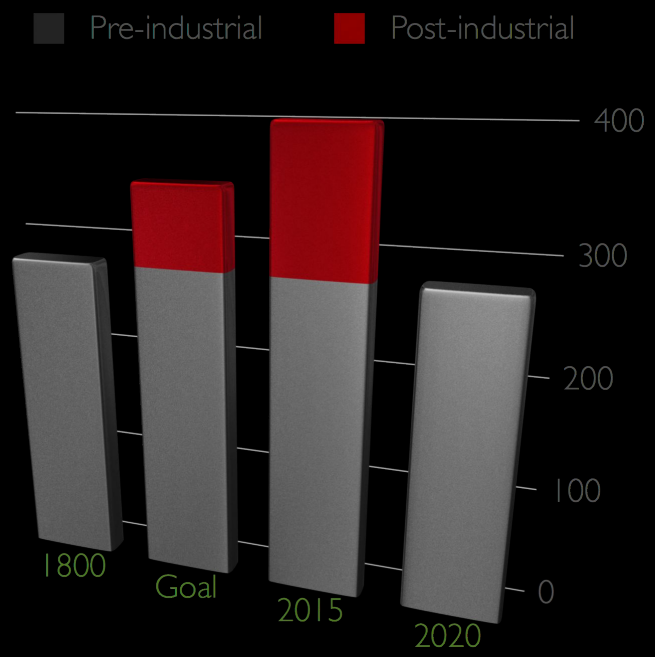
Regenerative Agriculture Can Get us Here



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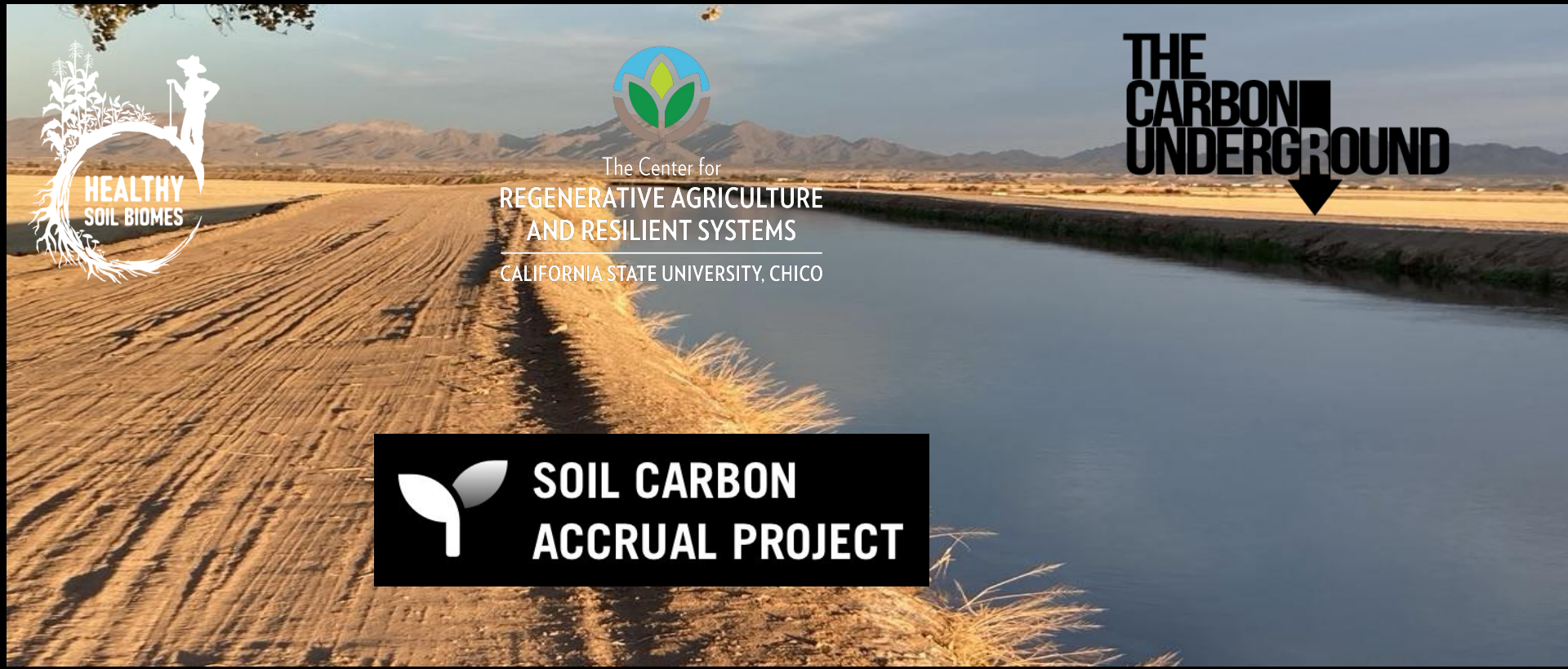
HEALTHY
SOIL BIOMES
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THE CARBON UNDERGROUND
SOIL CARBON
ACCRUAL PROJECT

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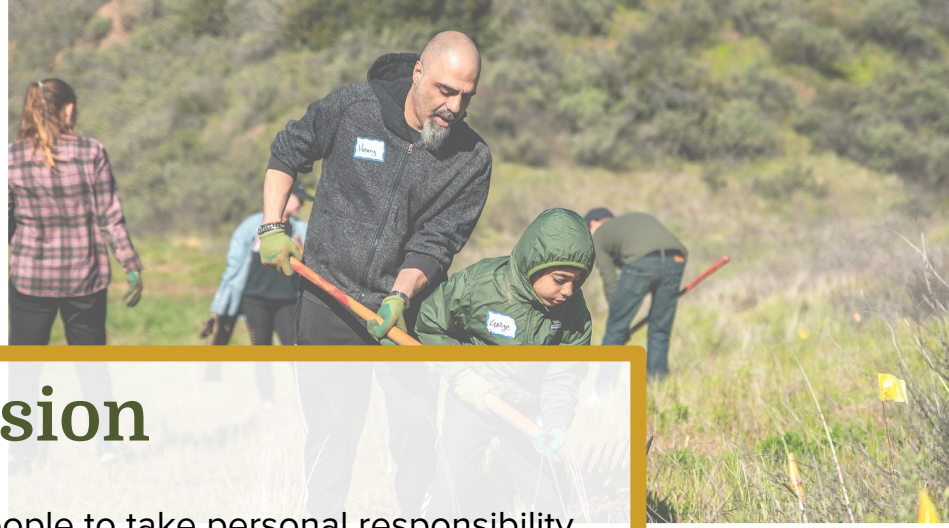
Community.



Mission

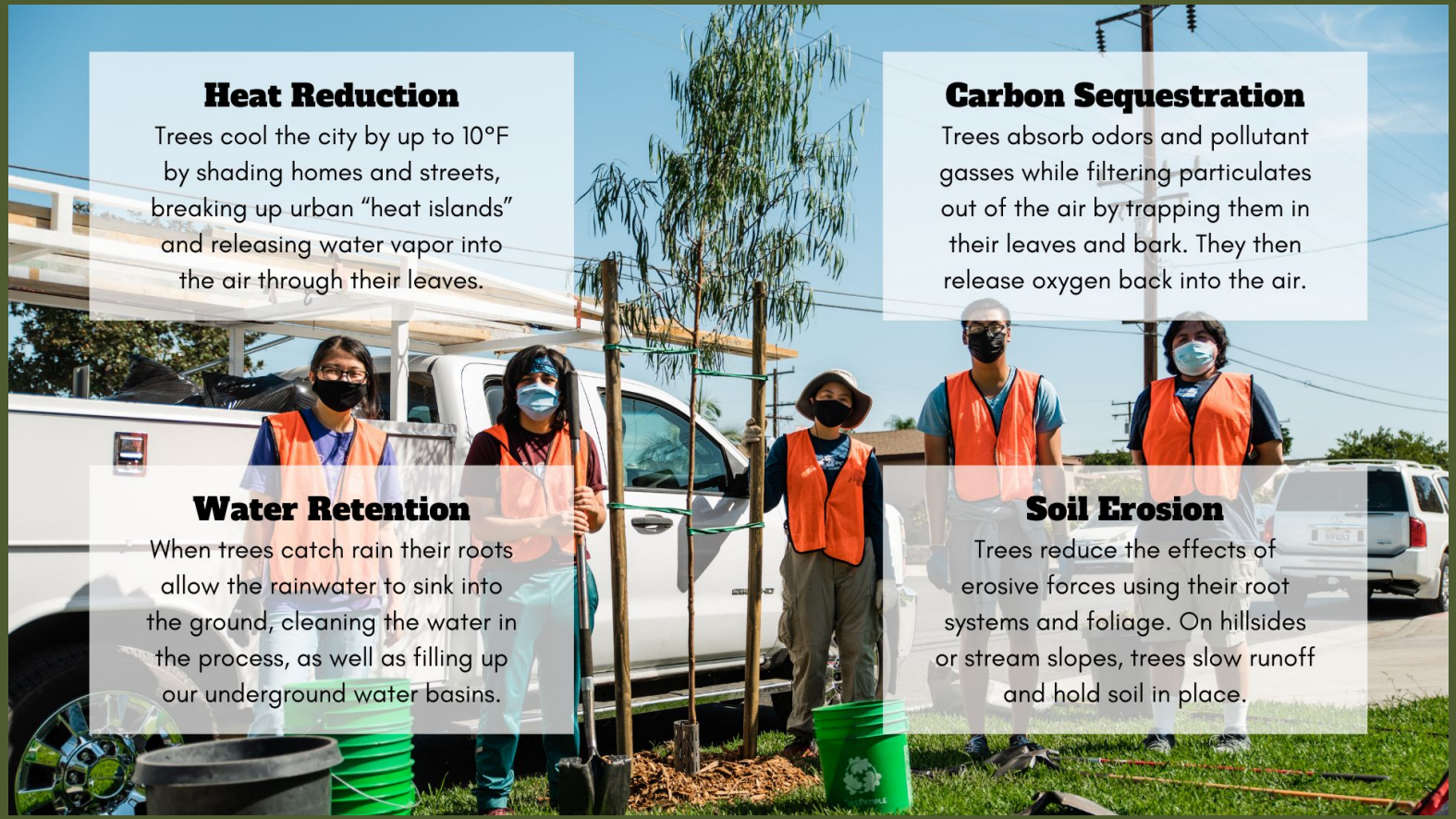
To inspire, engage and support people to take personal responsibility for the urban environment, making it safe, healthy, fun, sustainable, and resilient; and to share the process as a model for the world.

Our Mission is Centered on People

Equity and Environmental Justice

Mental and Physical Health

Benefits of Trees



Heat Reduction

Trees cool the city by up to 10°F by shading homes and streets, breaking up urban “heat islands” and releasing water vapor into the air through their leaves.

Carbon Sequestration

Trees absorb odors and pollutant gasses while filtering particulates out of the air by trapping them in their leaves and bark. They then release oxygen back into the air.

Water Retention

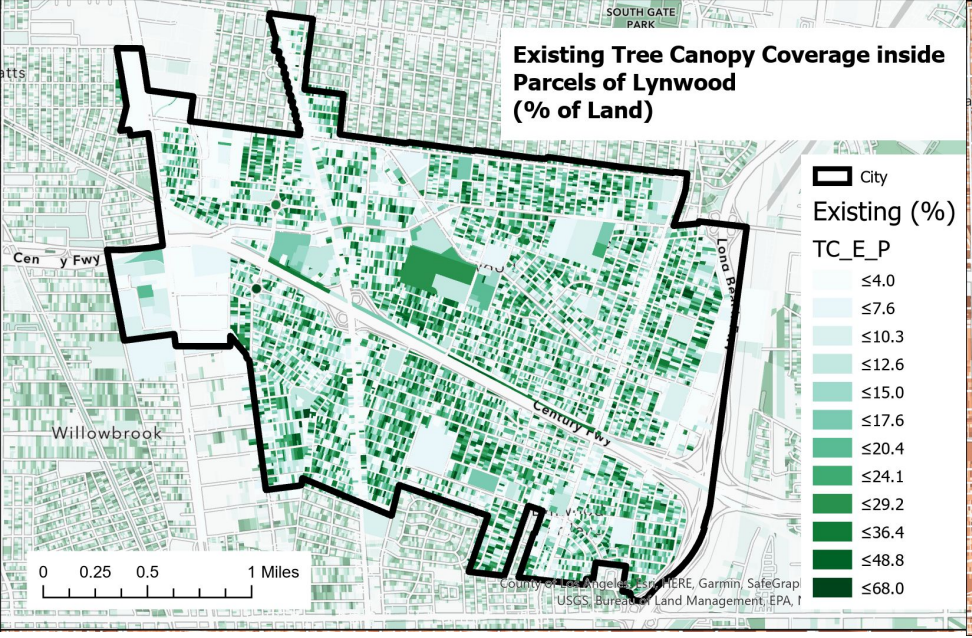
When trees catch rain their roots allow the rainwater to sink into the ground, cleaning the water in the process, as well as filling up our underground water basins.

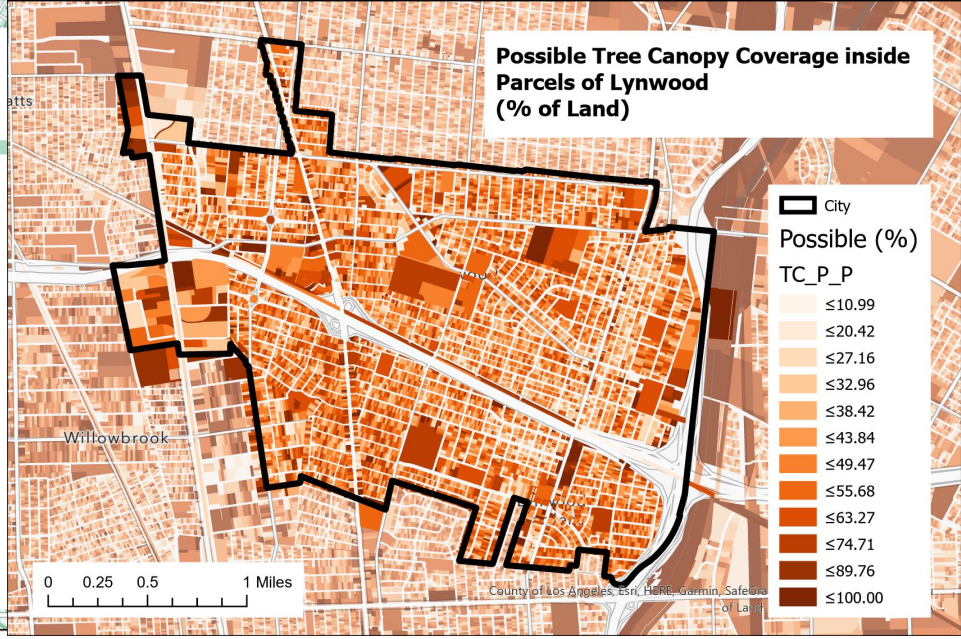
Soil Erosion

Trees reduce the effects of erosive forces using their root systems and foliage. On hillsides or stream slopes, trees slow runoff and hold soil in place.

SOUTH LA

STUDIO CITY

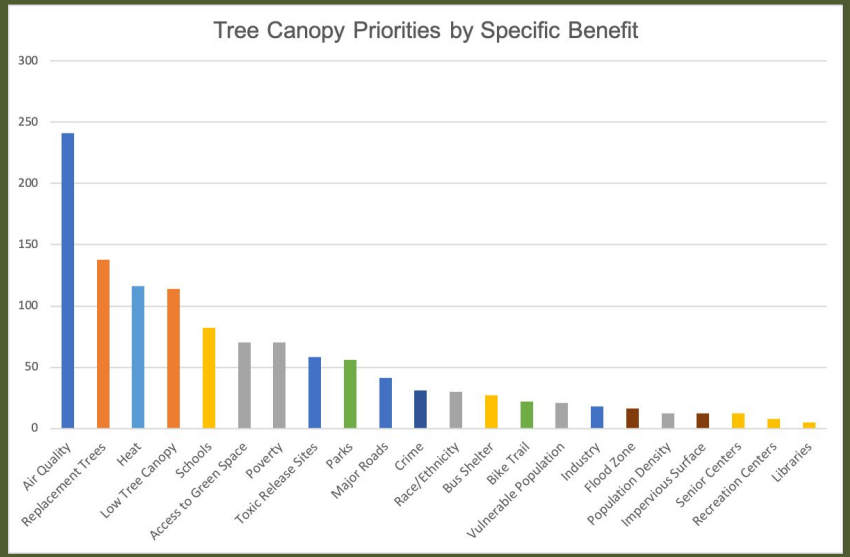




	Mean	Median	Min	Max
Los Angeles County	18%	16%	0%	84%
Gateway Cities	15%	15%	0%	46%
City of Lynwood	**16%**	**16%**	**8%**	**23%**
City of Commerce	8%	8%	3%	16%

	Mean	Median	Min	Max
Los Angeles County	43%	42%	16%	100%
Gateway Cities	44%	43%	21%	100%
City of Lynwood	**41%**	**42%**	**31%**	**55%**
City of Commerce	46%	45%	36%	52%

Tree Prioritization



Credits: Los Angeles County GIS Portal, Esri Living Atlas, U.S. Census American Community Survey, SCAG Open GIS Data Portal, and NASA SEDAC

Tree Planting Priority Level for the City of Lynwood at Block Group Level

Trees Need People

- Local community involvement, investment, and support are crucial to increasing urban tree canopy and is key to our model.
- Research shows that trees planted without community involvement will have a significantly higher probability of dying.

Bright Spots

- Southeast LA
- South LA
- Northeast San Fernando Valley
- San Gabriel Valley
- Riverside
- San Bernardino

School Greening

School Greening

WaterTalks

Youth Power

Nursery

- **Producing roughly 10,000 native trees and plants each year** to restore our mountains.

Mountain Restoration and Fire Resilience

Movement Building 2021

40,000 Youth

80,000 Trees and Plants Planted and Cared For

350,000 Directly Engaged

3.5 Million Web and Social Media


TreePeople
Thank you!