Who cares about Humus?

WE DO!

Local benefits of soil organic matter

- Fertility (yields!)
- Soil structure & aggregation
- Water holding capacity
- Binds toxins and pollutants

Sequestration Math

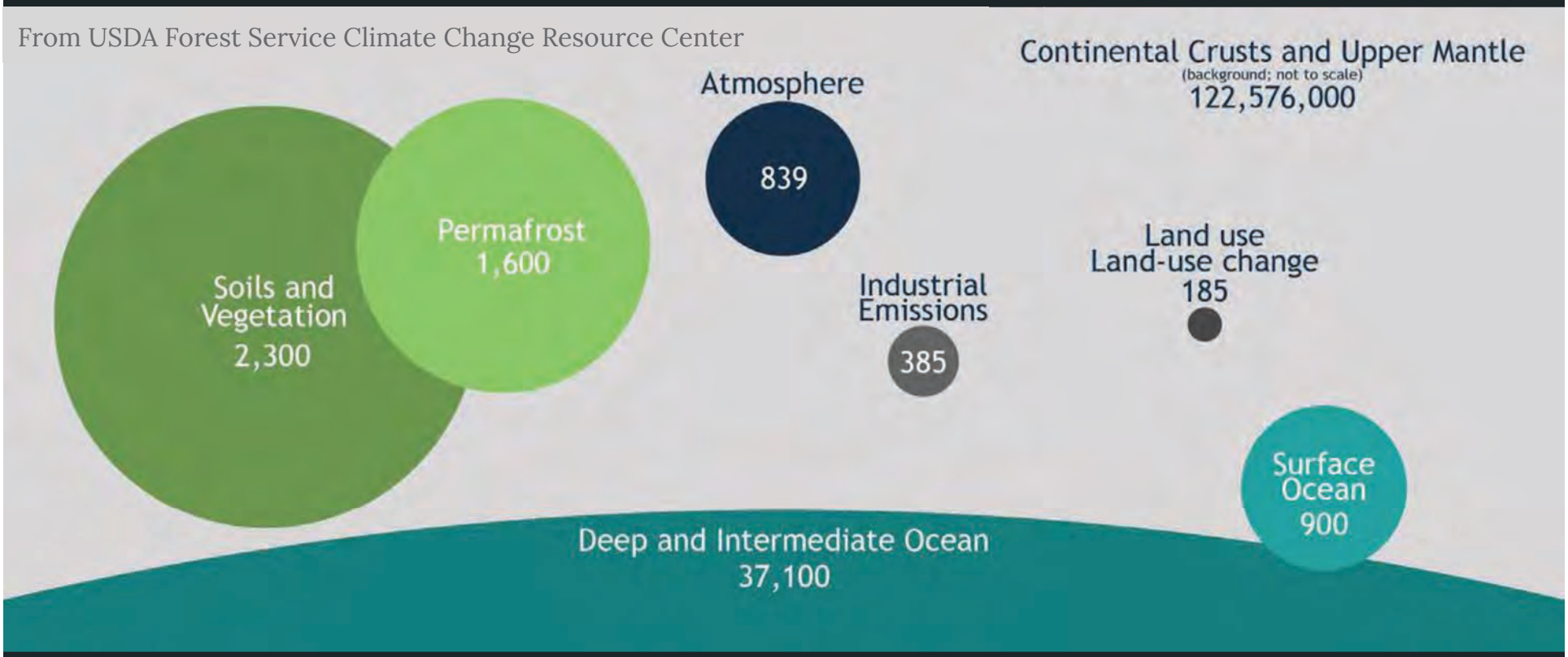
- 1% increase in soil organic matter = ~10 tons belowground C stored / acre. (And +35 tons/ac water storage in soil)
- Adding tree alleys = 50-100 tons aboveground C/ac in most climates (More complex agroforestry can store more)

Drops in the bucket: Scaling up

Why this? Why now?

- We have the tools now & they are not new
- Promotes ecological & social integrity, and community sovereignty
- Many co-benefits in addition to C sequestration
- This is our last window of opportunity

From USDA Forest Service Climate Change Resource Center



Need to sequester: 200 Gt

Soil & biomass max. potential: 320 Gt

Fossil Fuels
5,000-10,000

Sequestration applicability

- 800 million ac US cropland, pasture, & rangeland
- Worldwide: 7+ billion acres of crop & range land w/ degraded soils

4 per 1000 Initiative

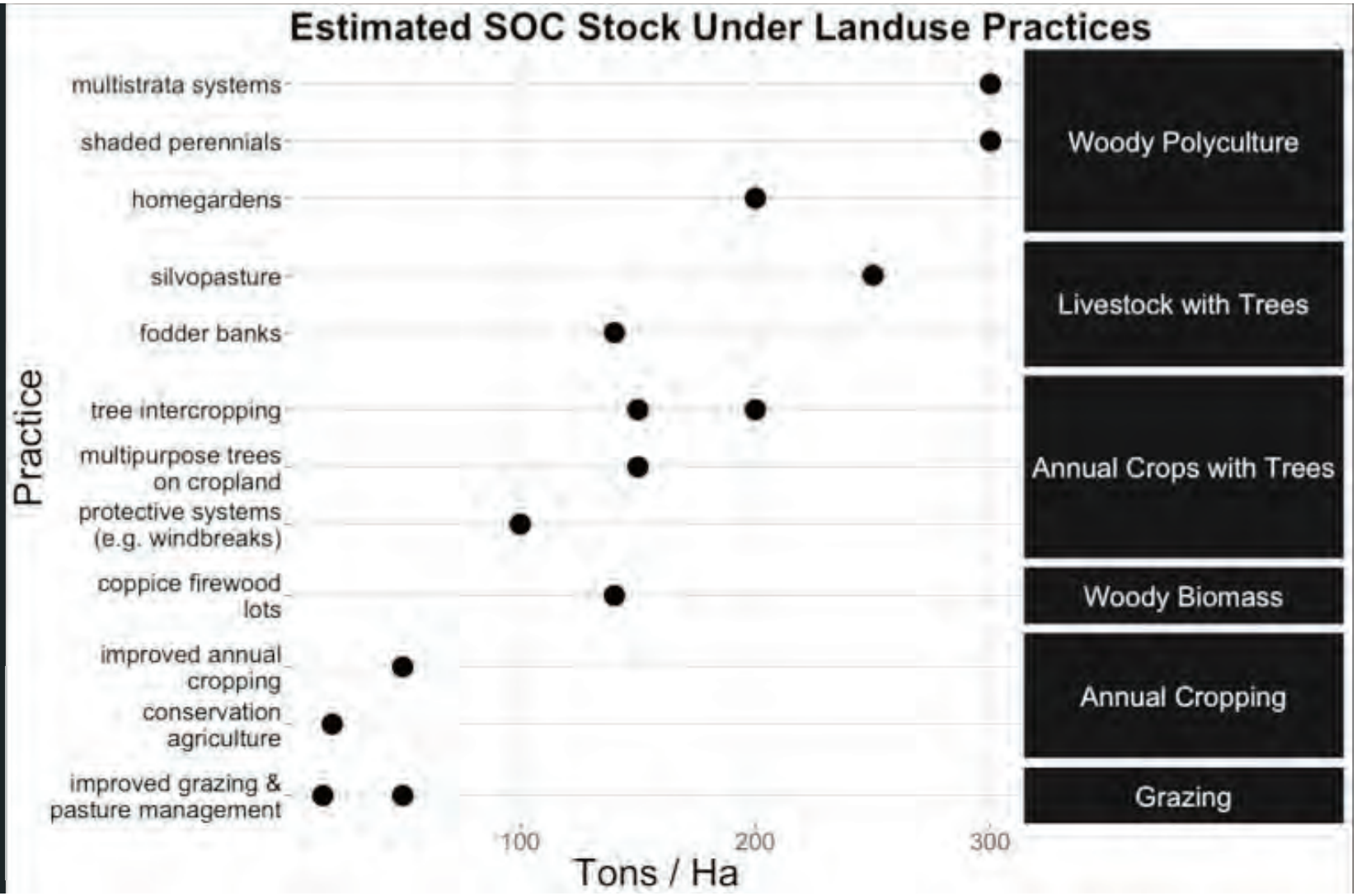
Soils for Food Security & Climate

www.4p1000.org

Increase soil C by 0.4% per year in the topsoil

So what can **we** actually do?



Data adapted from Eric Toensmeier
Data visualization by Rafter Ferguson

Convert Large Tillage Acreage to Organic No-Till

Practices (easy to difficult)

- Crop rotation & fallow/grass buffer strips
- Maximize cover cropping
- Minimize herbicides/pesticides & synthetic fertilizer
- Compost application
- Minimize or eliminate tillage
- Grazing integration

These practices don’t sequester as much C, but they are widely applicable → lots of C globally

- Crop rotation
- Fallow/grass/hedge strips
- Cover crops

These allow for same crops we’re used to

Convert Confinement Livestock Farms to Rotational Pasture

Principles:

- High animal density w/frequent rotations
- Short residence, long recovery
- Animals, forages, soils all managed together

Challenges

- New markets
- Landbase & forage quality
- Animal behavior retraining
- Management intensive

Convert Pastures to Silvopastures

Put trees back in pastures

Re-think wooded areas (eg. orchards) for grazing

“Homegardens”

Not your average garden...

Claire Gregory (2008)

- A.k.a. “Food forests,” “edible forest gardens”
- Primarily in the tropics, but possible in cooler climates
- Based on permaculture practices
- Integrating trees, perennials, non-food crops


Ready-to-grow.com

Support transition from conventional to CF practices

- Coordinated support is imperative
- Compensate farmers for CF service

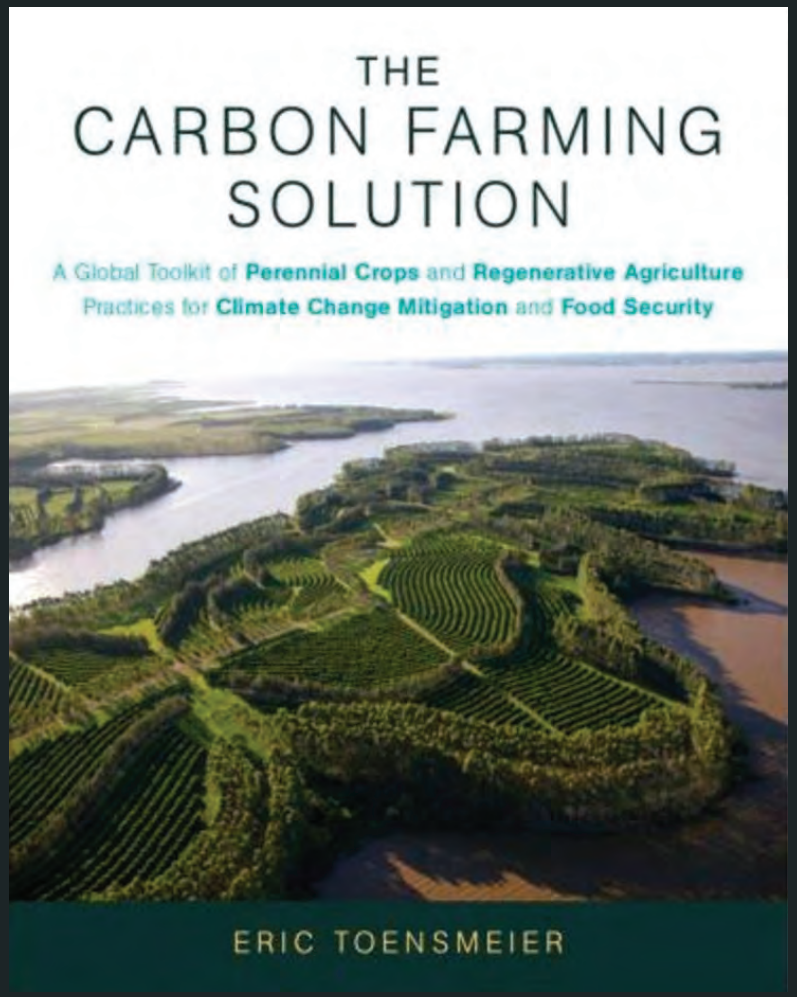
But others can start now…

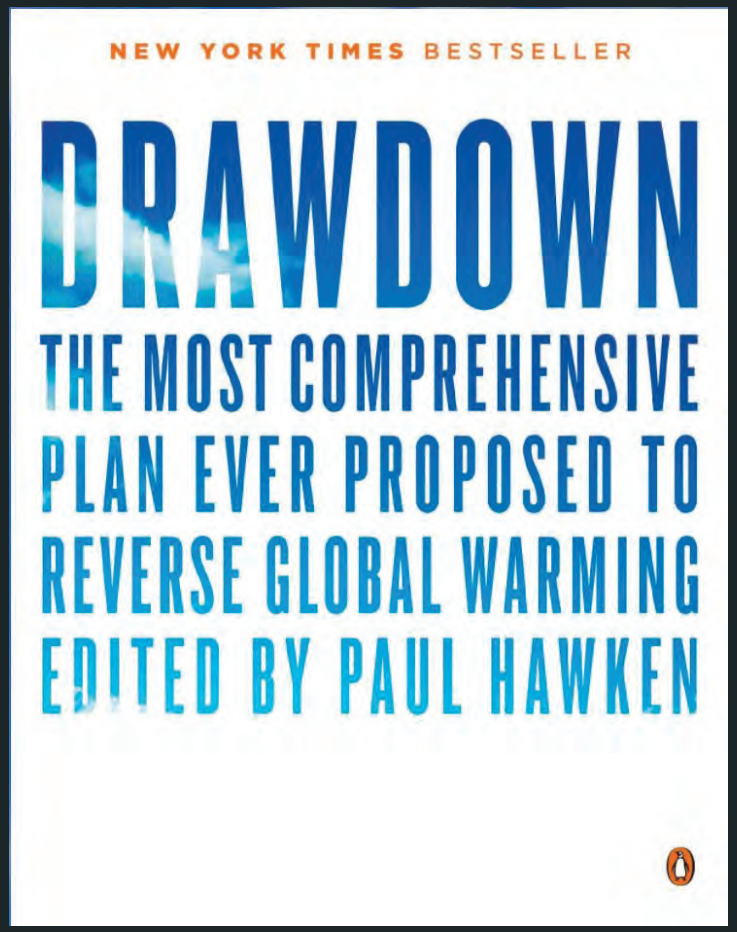
- Individuals
- Organizations/ Businesses

ECOLOGICAL LAND to MARKET VERIFIED 2018 OUTCOME

A NEW STANDARD FOR LAND HEALTH

Regenerative Organic Certified™





drawdown.org

Justice & integrity are non-negotiable

Thank you

Kelsey Bearden
kbearden@antioch.edu
www.AppleSeedPermaculture.com