



LAND CORE

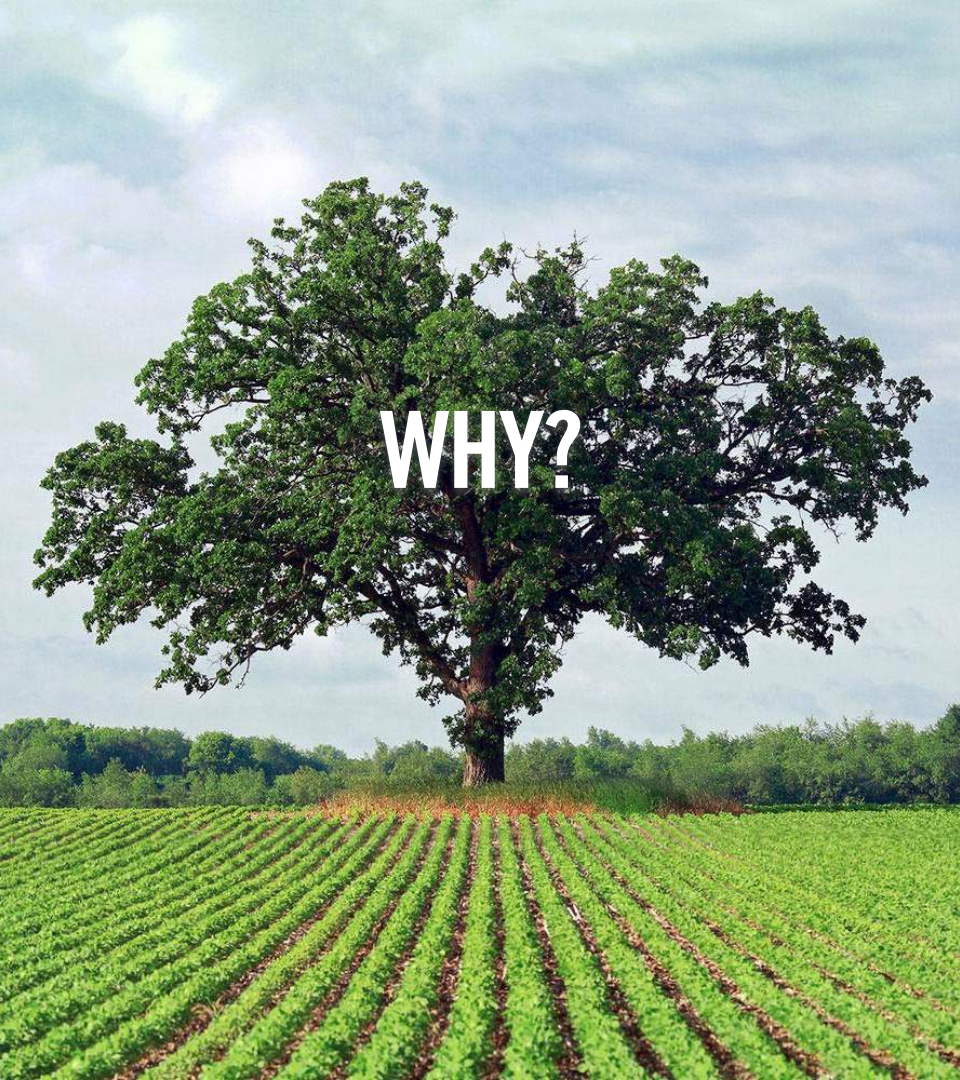
A 501c3 organization advancing soil health policies & programs that create value for farmers, businesses & communities.

LAND CORE RISK MODEL

quantifying the risk-mitigating impact of soil health practices to scale and de-risk adoption



There is broad scientific consensus that soil health practices mitigate risk in agriculture, yet the institutions that price risk, such as lenders and insurers, do not yet incorporate soil health into their risk pricing.



WHY?

Lenders and insurers lack effective, actuarially-sound models to determine the risk-mitigation benefits associated with specific soil health practices on any given piece of land.

lenders and insurers have a lot on the line

\$444 billion was extended in agricultural loans in 2021 ¹

Federally subsidized crop insurance costs taxpayers over \$9 billion annually ^{2 3}

SCALING REGENERATIVE AGRICULTURE

DE-RISK SOIL HEALTH PRACTICE ADOPTION BY DE-RISKING FINANCE

If lenders and insurers have the empirical data to value soil, then healthy soil is valuable and can be incentivized

Products & offerings such as reduced-rate loans, more flexible terms and lower crop insurance rates will de-risk a farmer's upfront investment in new practices

Economic incentives from finance and insurance don't carry the social stigma of government and NGOs, which will help overcome cultural barriers to behavior change



HOW?

Build a predictive, actuarially-sound modeling tool

- Model the risk-mitigating benefits of specific soil health practices
- Use remote sensing & biophysical data on cover cropping, tillage, rotational diversity & other practices
- Use those data to inform a statistical model that predicts outcomes such as yield variability and recovery time
- Assign a “risk score” for a farm or ranch based on existing conditions and future management plans
- Pilot + rollout at regional scale, beginning in the U.S. Midwest
- Design to be a pragmatic decision-making tool for lenders and insurers

CROSS-SECTOR WORKING GROUP

Land Core has convened a world-class group of modelers, statisticians, economists, soil scientists and farmers to build this model:

Tim Bowles, Ph.D., Assistant Professor of Agroecology and Sustainable Agricultural Systems, University of California Berkeley

Bill Salas, Ph.D., Interim CEO, CSO; Applied GeoSolutions, LLC; President, Dagan, Inc

Shefali Mehta, Ph.D., Founder & Principal, Open Rivers Consulting Associates, former Executive Director, The Soil Health Partnership

Jenette Ashtekar, Ph.D., Director of Product Management, CiBO Technologies, Inc.

Yvonne Socolar, Ph.D candidate, Agroecology, Department of Environmental Science, Policy and Management, UC Berkeley

Frederi Viens, Ph.D., Professor, Department of Statistics and Probability; Director, Actuarial Science Program; Adjunct Director, Center for Statistical Training and Consulting, Michigan State University; Chinook's Acres farm

David Krevitt, Independent Data and Risk Analyst; Technologist; former Financial Analyst at Blackrock Financial

Jessica Chiartas, Ph.D candidate, Soils & Biogeochemistry, University of California, Davis; Soil Life Services, LLC

Aria McLauchlan, Co-Founder & ED, Land Core

Harley Cross, Co-Founder & Director of Strategy, Land Core

PROJECT ADVISORS

These outstanding leaders in the field are generously advising the project:

Keith Paustian, Ph.D., University Distinguished Professor, Department of Soil and Crop Sciences, and Senior Research Scientist at the Natural Resource Ecology Laboratory, Colorado State University

David Lobell, Ph.D., Professor at Stanford University in the Department of Earth System Science, Stanford Earth; Senior Fellow, Stanford Woods Institute for the Environment; Senior Fellow, Stanford Institute for Economic Policy Research (SIEPR), Stanford University



FLAGSHIP PARTNERS



We're proud to partner with [Compeer Financial](#) to support model development and pilot incentives.

Compeer provides credit, insurance and financial services in Illinois, Minnesota and Wisconsin, has over \$25 billion under management, and is the third largest cooperative in the Farm Credit System.

Through this partnership, Compeer becomes the first major agricultural financial services provider to approach risk assessment through the lens of **soil health**.

Read more in our [press release](#).



PROJECT DEVELOPMENT

Phase One - Design Jan 2020 - Sep 2020

- Convene working group
- Project kickoff
- Project scoping & MVP design
- Fundraising & grant applications
- Initiate partnerships



Phase Two - Build Oct 2020 - Feb 2022

- Onboard project staff
- Scrub data
- Launch MVP development
- Model iteration
- Bayesian analysis



Phase 3 - Launch Mar 2022 - Nov 2022

- Ground-truth model
- Regional-scale pilot
- Model expansion by region
- Develop end-user tool
- Launch & adoption



PROGRESS

- Convened collaborative working group of experts
- Drafted MVP design & identified key data sets
- Raised \$450K in cash and in-kind commitments
- Established initial lending and insurance partners
- Launched MVP development



SUPPORT FOR THE RISK MODEL

“This partnership will allow us to support our clients by giving them tools to leverage their investments in soil health. This kind of model not only has the potential to increase sustainability and resilience, but can create an economic pathway to emerging carbon markets for US producers. It holds real promise for long-term increases in profitability.”

– Terry Hinds, Chief Asset Quality and Assurance Officer, Compeer Financial

“I’ve seen the benefits of cover cropping and other soil health practices in improving resilience on my farm over the last 15 years. It’s exciting to see an organization like Compeer acknowledging these impacts and to know that a whole new generation of farmers will benefit from this approach to risk assessment, reducing the barriers to adopting more sustainable practices.”

- Rick Clark, Clark Land & Cattle





JOIN US

1. Recommend advisors representing lending, investment and insurance to provide feedback and inform model development
2. Suggest additional field-level data sources across different regions and crops/livestock
3. Funders are invited to support model development

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