



## **Dan Fiscus**

**Guest Senior Research Scholar, Systemic Risk and Resilience Research Group, Advancing Systems Analysis Program and Research and Development Scientist with Berkeley Springs Instruments, LLC.**

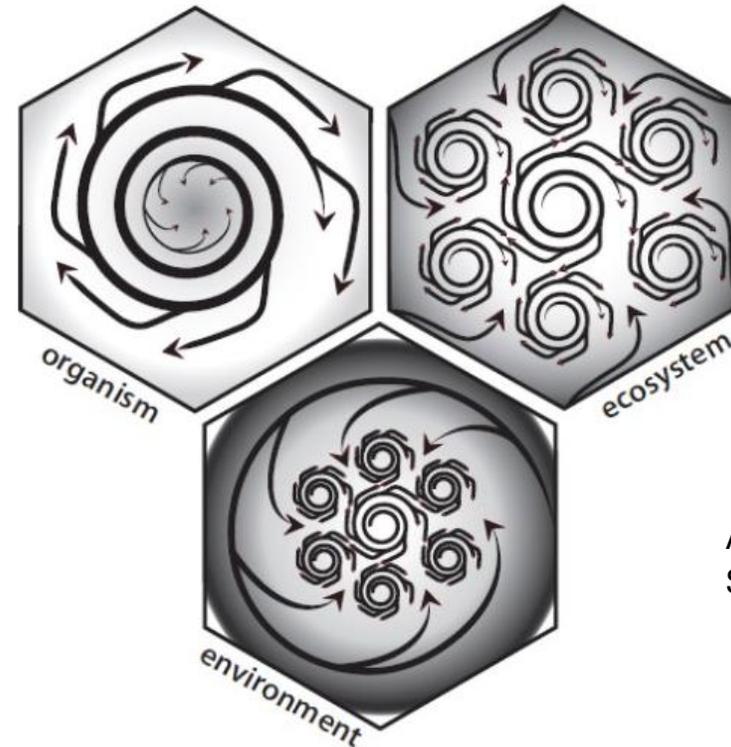
Panel 4

# Soils, Crisis, Narratives, & Cross-Disciplinary Learning

Vienna Soil Dialogue - March 23, 2026



Photo from Tatiana Morin, Urban Soils Institute



Art by  
Sarah McManus

**Dan Fiscus**

IIASA Guest Scholar, Berkeley Springs Instruments,  
Ecosystemics [www.ecosystemics.org](http://www.ecosystemics.org)

# Overview

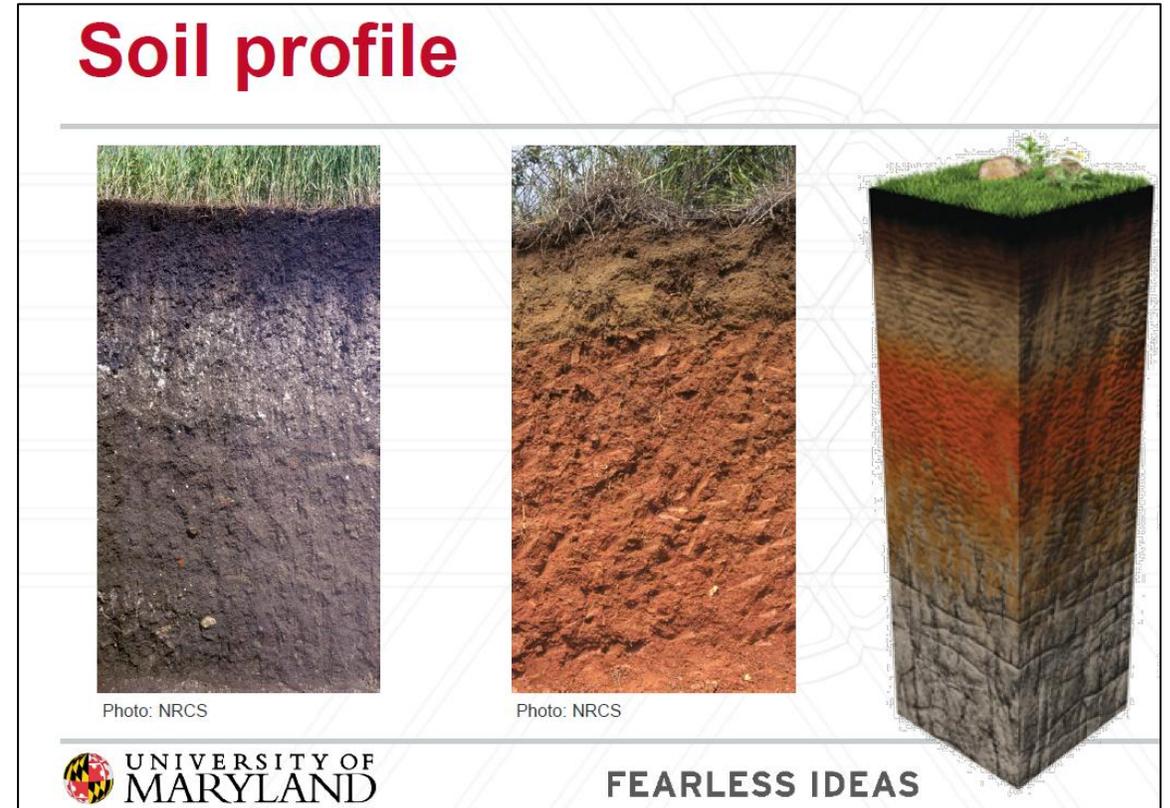
- Introduction – input for conference goals
- Soils
  - In the foreground – soils themselves
- Narrative shift as key to soil health
  - Focus on narrative in science
- Cross-disciplinary Learning
  - Action toward a shared agenda



# Recommendation – Narrative Shift in Science

Working hypotheses:

- Current narrative in science is causing soil devaluation and degradation
- Alternative narrative in science can lead to higher value placed on soils
- Better outcomes for soil health, security, improvement in quality



# Soils in focus

## Profound importance, multiple values

- Food supply, food sovereignty, climate resilience,
- Source of plant and animal nutrient density
- Hold & release nutrients & water for plants, microbes
- Key in carbon, water, nutrient cycles – regulate, purify, store, supply
- Medium for inter-species communication and symbiosis
- Foundation of plant health, resistance to disease and pests
- **Clothing comes from & returns to soils – linen, hemp, wool, leather, cotton**
- Sustainable science materials – paper, pencil, wood, soil, terraria, gardens
- Threats – industrial agriculture, climate disruption, invasive species, extreme rain / drought events, PFAS and toxins
- **Case study and living laboratory revealing science narratives, outcomes**



Photo: NRCS



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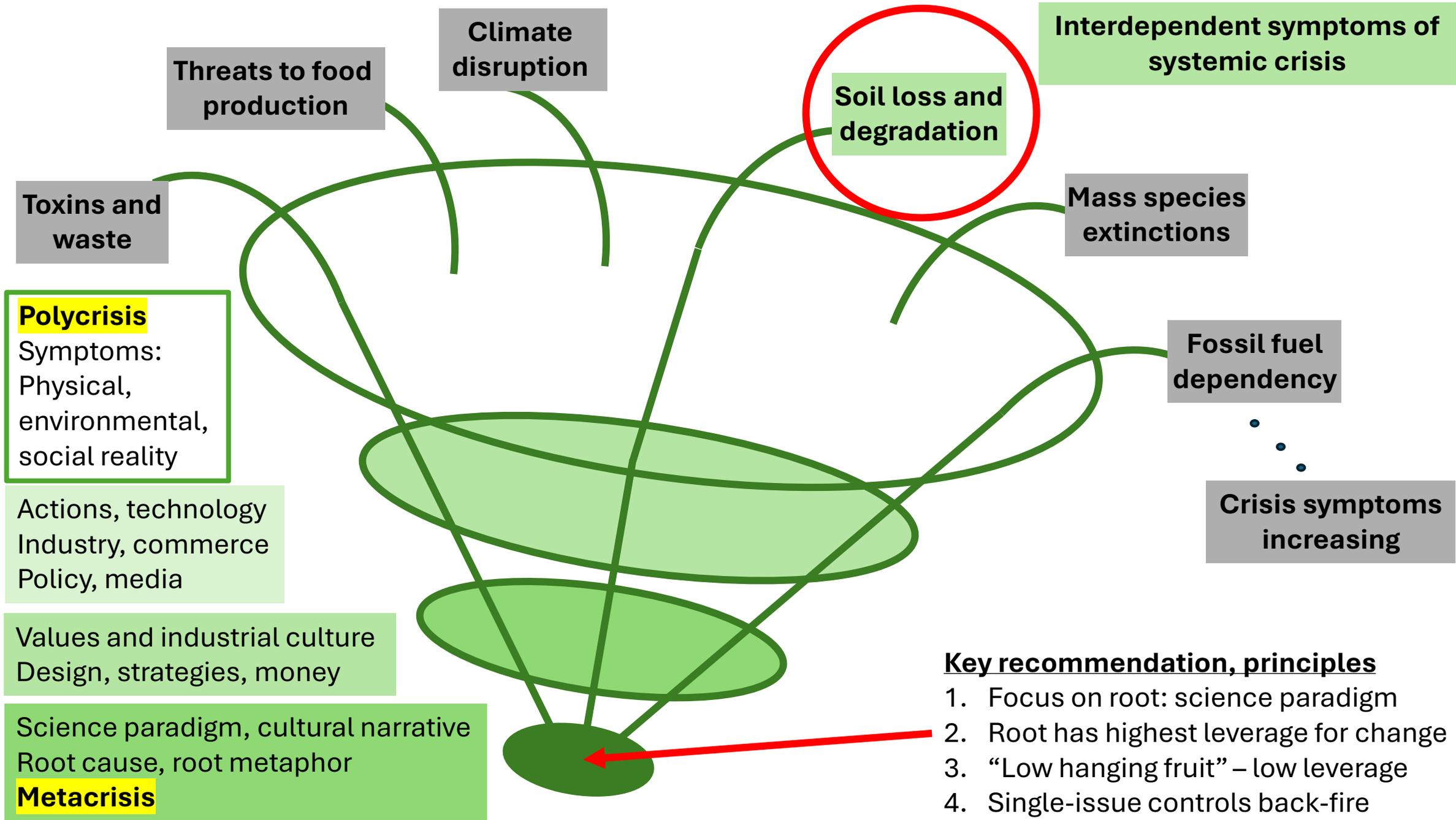
# Current Narrative of Science and Outcomes

## Mechanistic science narrative

- No value basis – importance of value neutrality
- Objectivity – science experiment has no impact on the world
- Mechanism as root metaphor – all systems modeled as mechanisms
- Analytical – system and environment split, fragmented
- Goals of system prediction and control, maximum efficiency

## Outcomes of science narrative

- Soils not primary value, degraded over time
- System & humans win, environment loses
- Dissipates / destroys functional gradients – soil profiles
- Self-degrading, depletes system capacity
- Non-renewable energy, linear materials process
- Depletes fossil energy, disrupts atmosphere



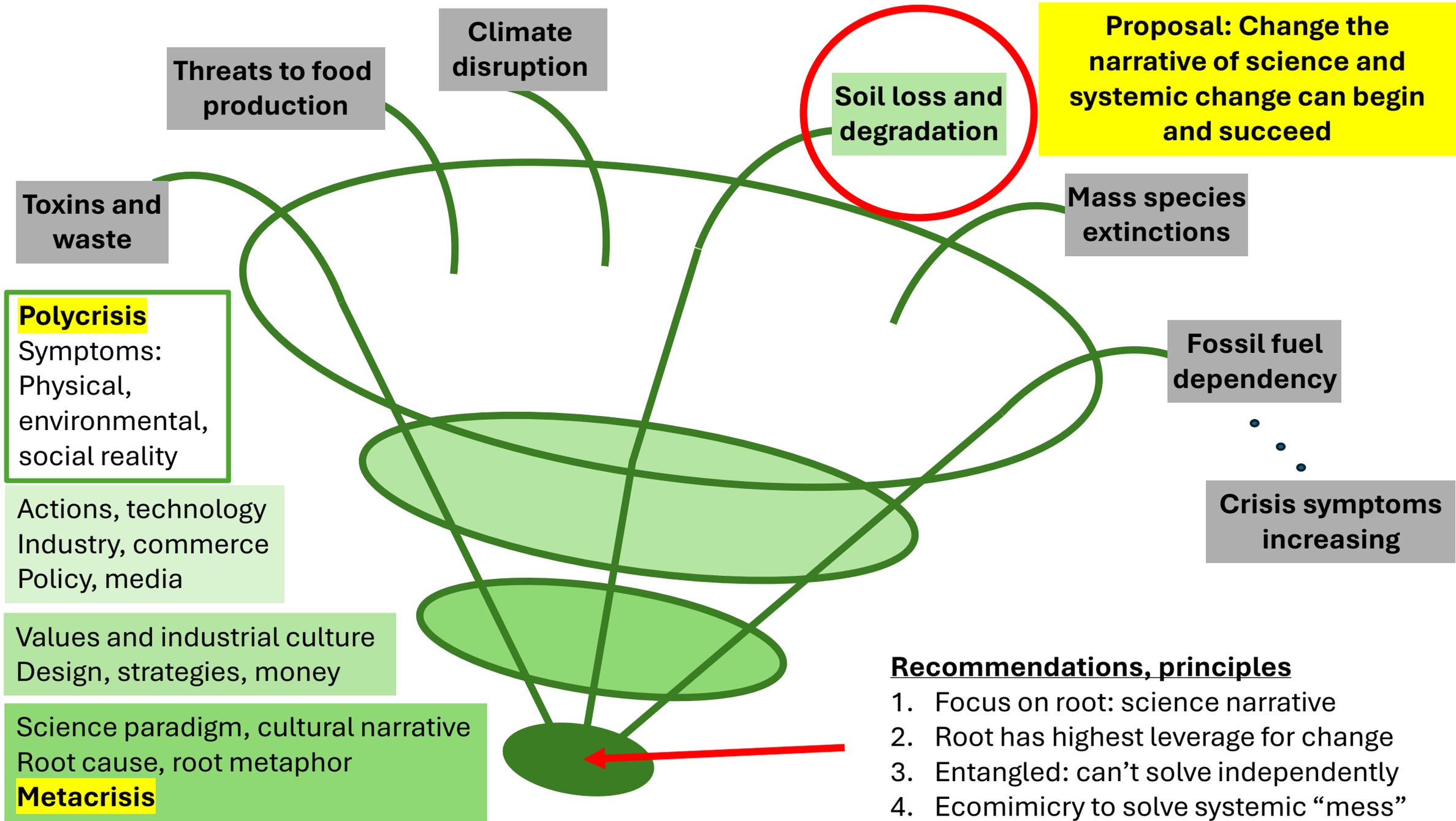
# Alternative Science Narrative and Outcomes

## Living system science narrative

- Value basis – Life (human and ecological) as primary value, including soils
- Inter-subjective – science integrated, participatory, aware of impacts on world
- Living system as root metaphor and categorical distinction with mechanism
- Synthesis-focus and holistic – system and environment whole, unified
- Goals of balance of efficiency and adaptability

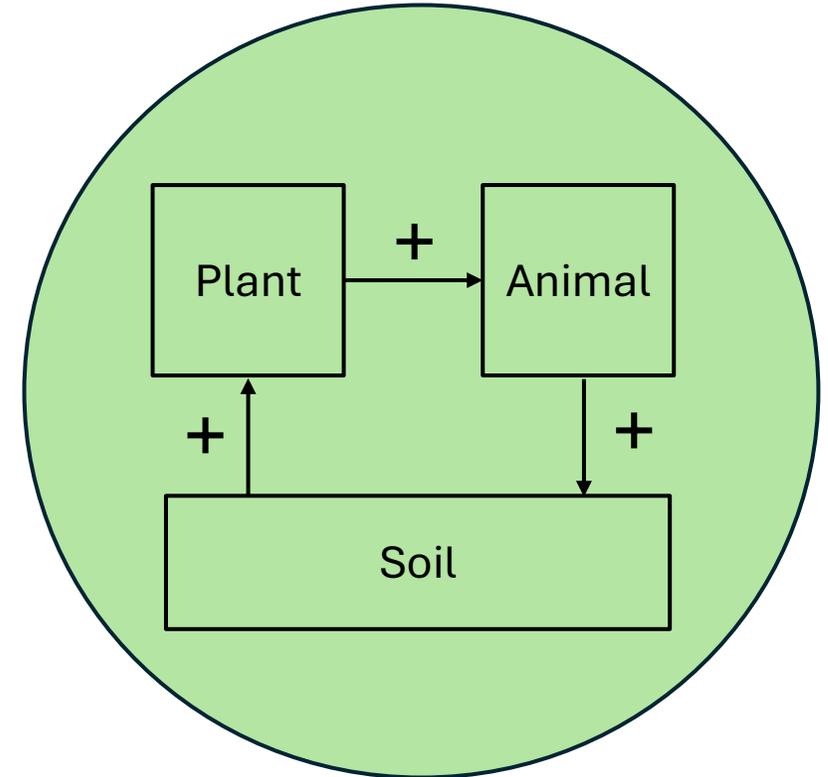
## Outcomes of science narrative

- Soils grow in depth, develop greater fertility
- Life and environment improve together (win/win)
- Builds functional gradients – soil profiles
- Self-sustaining, regenerates system capacity
- Renewable energy, circular materials process
- Life-environment system created fossil energy, O<sub>2</sub> atmosphere



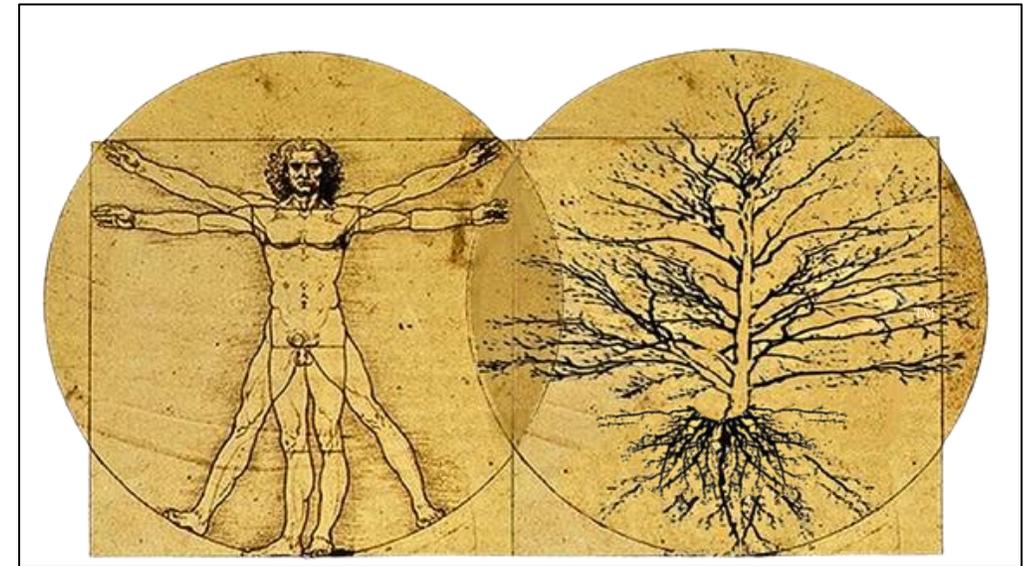
# Summary and Recommendations

- Study and promote soils as living learning laboratory of science narratives
- Seek ways for science to serve Life explicitly, and to mimic Life
- Examine science's tangible outcomes for solving the metacrisis
- Pursue direct actions for soil health – practices, incentives, new systems – in a shifted narrative of living systems



# Cross-Disciplinary Learning, Agenda, Actions

- Do we need a new kind of narrative?
- How to imagine & craft a narrative that embraces many diverse narratives? (A metanarrative?)
- Life offers a model – the narrative of Life is unifying (we are all the same) and thrives on diversity (we are all unique)



Soils are the common ground we all share

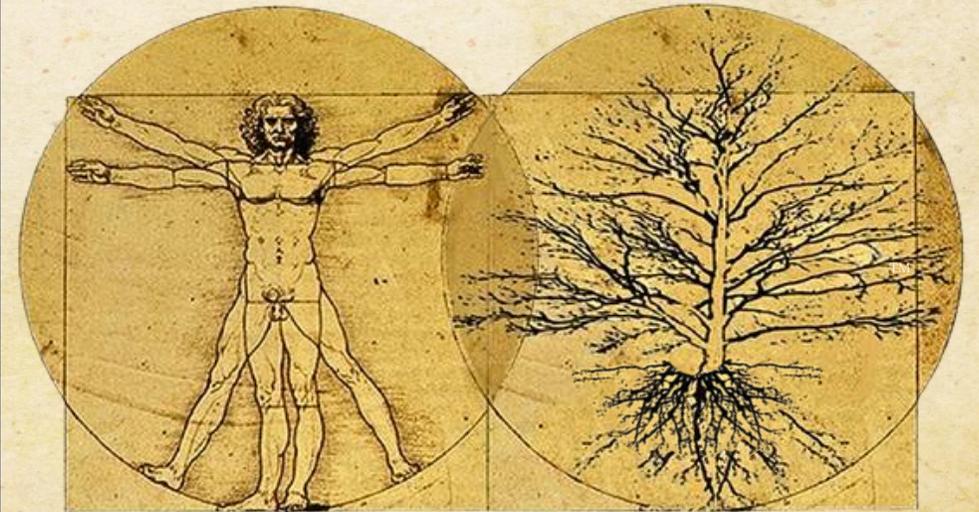
Thank you!



From Western Maryland, USA

# Foundations *for* Sustainability

*A Coherent Framework of Life–Environment Relations*



Daniel A. Fiscus, Brian D. Fath



**See Ecosystemics at [www.ecosystemics.org](http://www.ecosystemics.org)**