

# The Promise and Pickle of Compost

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# Who is the MEC?




- Six leading environmental organizations came together in 1980 to create a new non-partisan non-profit charged to be the voice for Michigan's environment in the state Capitol.
- Today, we have a staff ~ 13 and represent 65 organizations across the state. Board is a mix of member organizations and at-large leaders.
- We do mostly policy with just a hint of politics.
- Striving to be a positive, forward-looking instrument for innovative policy solutions to statewide challenges.



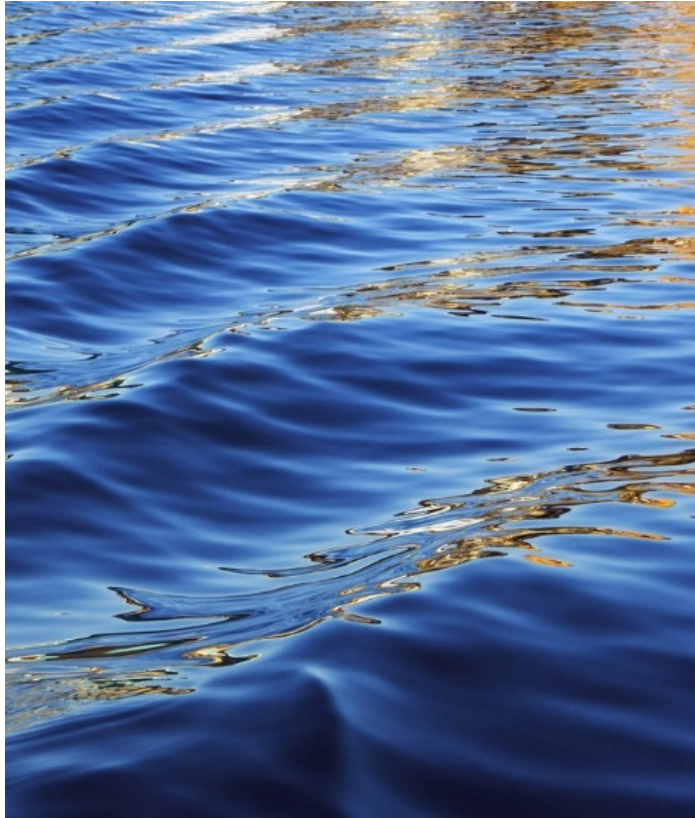
# Opinions and Observations....You may disagree, and that is fine 😊

- Compost is generally understood to offer beneficial qualities to soil
- Many land managers (and every day citizens) do not care much about soil health...AKA do not understand soil health
- Compost struggles to compete with other low cost, organic alternatives (i.e. manure)
- The value of compost is poorly quantified
- Outcomes of better soil generally lack predictability
- Compost faces several barriers to market entry

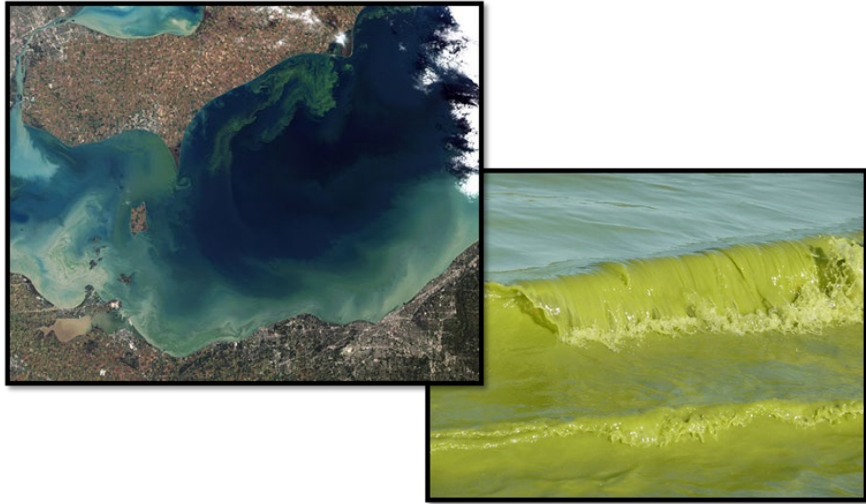




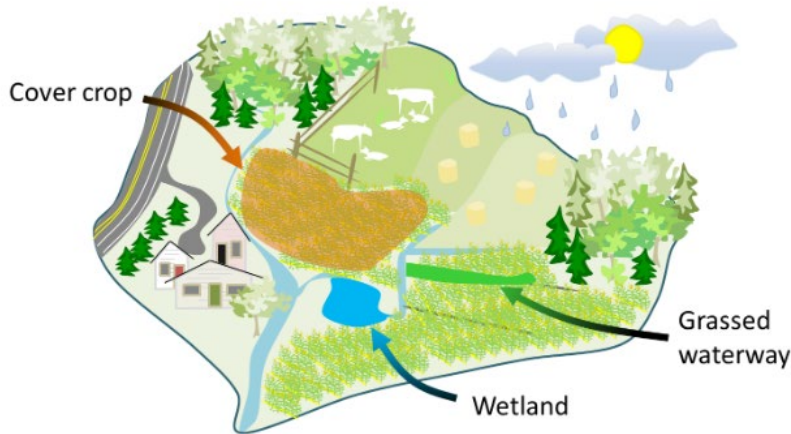
Integrating  
compost/soil health  
into regional water  
quality planning



# Soil Health and Water Quality: Engaging Researchers



*Improving models of nutrient loading and HABs through a watershed-scale approach that emphasized soil health and upland farming practices*

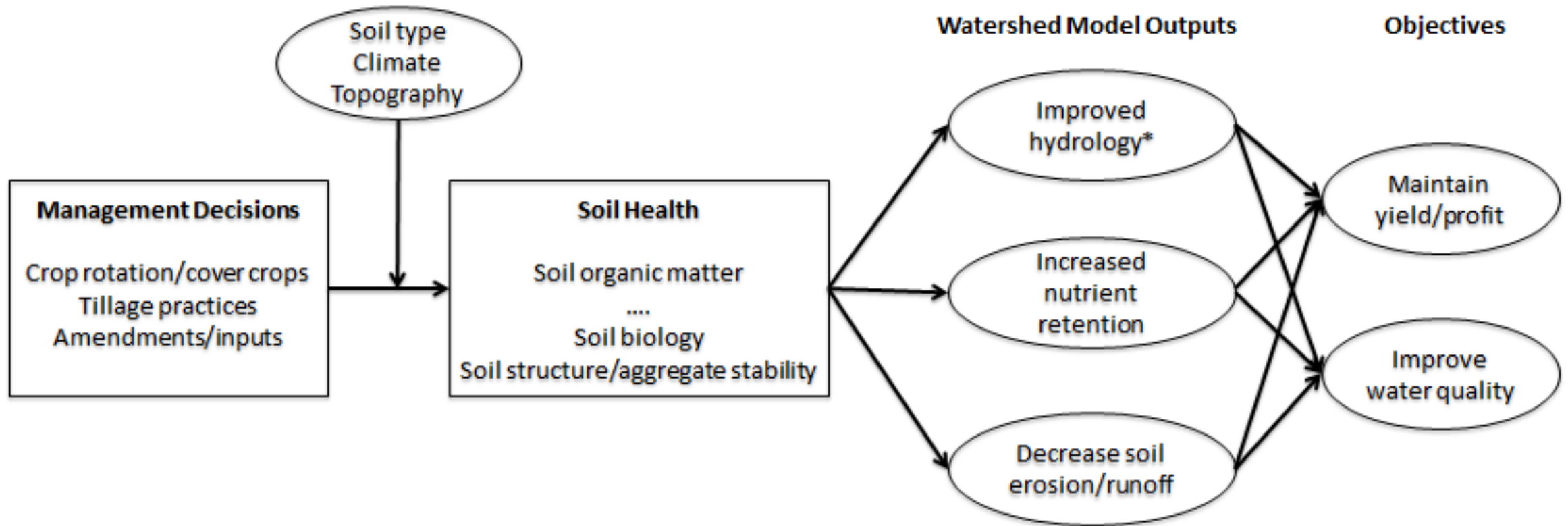


- Watershed modeling predictions and capabilities



- What is 'soil health'
- What models are most appropriate
- Gaps in our understanding for connecting soil health with watershed models
- Research needs

# Conceptualizing Connections

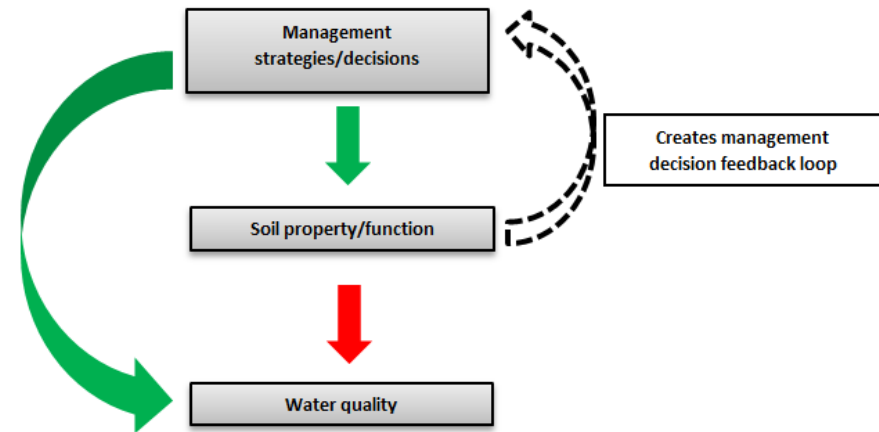


\* Water holding capacity, infiltration, plant available water

# Brief Summit Outcomes

- Soil Health according to USDA: “continued capacity of soil to function as a vital living ecosystem that sustains plants, animals and humans”
  - Improved soil health leads to improved function... but there are many functions of soil
- Primary functions
  - Hydrologic capacity: Infiltration/storage
  - Nutrient retention/cycling: N/P
  - Crop yield: Or yield stability/sustained resilience
- Understanding the temporal aspect of BMPs on soil function
- Spatial vs temporal variation Important consideration for farmers

- Datasets connecting management strategies, soil function, and water quality in varied systems



- Better understanding of farmer adoption preferences for 'innovative' practices

# Conservation Adoption and Farmer Roundtables

- Science and modeling results are only as good as what you can implement
- Grant from the MI Department of Agriculture and Rural Development to explore opportunities to expand soil health (management) practices
- Rationale for grant
  - Decades of extensive technical and financial resources for conservation practices like cover crops and no-till → relatively low adoption rates across the Midwest
  - Strong relationships are documented between a grower's willingness to adopt a new conservation practice and their environmental attitudes
  - More research is needed to explain how social and institutional networks actually function in practice



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# Roundtable Discussions and Questions to Consider

- Risk > Cost

*"I farm 1000+ acres...every acre in 'innovative' conservation practices is risky"*

*"Farmers, especially young farmers are under immense pressure from lenders to turn profits on land **now** due to high debt. Using practices that build long-term soil health isn't attractive to lenders so the farmers are locked in on conventional methods"*

- Conservation programs generally believe that subsidizing costs will improve adoption

*"Cost is only a short term barrier to adoption...the cost argument is shortsighted when looking at the long term value of conservation on improving efficacy of your farm"*

*"Current programs don't actually shift change, we're just renting conservation"*

*"Why don't we focus more on the (avoided) cost of not losing 1/2inch of topsoil?"*

- Return on investment

*"...For compost, prove to me the ROI on compost compared to raw manure. I look at manure as a nutrient (NPK) additive, I know the biology stuff is there with both, but its not my primary concern. As long as the added NPK from manure is more valuable than the trucking costs, its worth it."*

- Logistics

- Nutrient value?
- Rate of application?
- When do I apply this in my rotation?
- What equipment do I use to spread this?
- Will I need new equipment? Can I use a manure spreader? Will a manure spreader impact effectiveness?
- How many years do I need to spread?
- Federal requirements (FSMA)?

# Opportunity for compost and soil health in state and regional conservation planning?

- Yes, but it will require some leg work
- Consider the key questions from Ag producers
- Targeting the right type of agriculture
  - Traditional row crop vs. specialty (vegetable)
  - Size of farm (i.e. who will absorb more risk)
- Growing this market may require the compost industry to more freely share information... which is scary, but necessary
- Long-term Vision
  - Data sharing and information platform
    - Physical site characteristics (i.e. soil type, precipitation, slope, etc)
    - Farm operation (i.e. rotations, acreage)
    - Soil parameters- chemical, biological, physical (pre and post compost application)
    - Compost integration (i.e. volume used, feedstock, application rates)
    - Pre and post changes in:
      - Hydrologic capacity: Infiltration/storage
      - Nutrient retention/cycling: N/P
      - Crop yield: Or yield stability/sustained resilience



Functions identified in CIGLR Summit

Thank you!



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