Rapid Ecological Assessments

A stepwise strategy to establish, measure, and report metrics of ecosystem health

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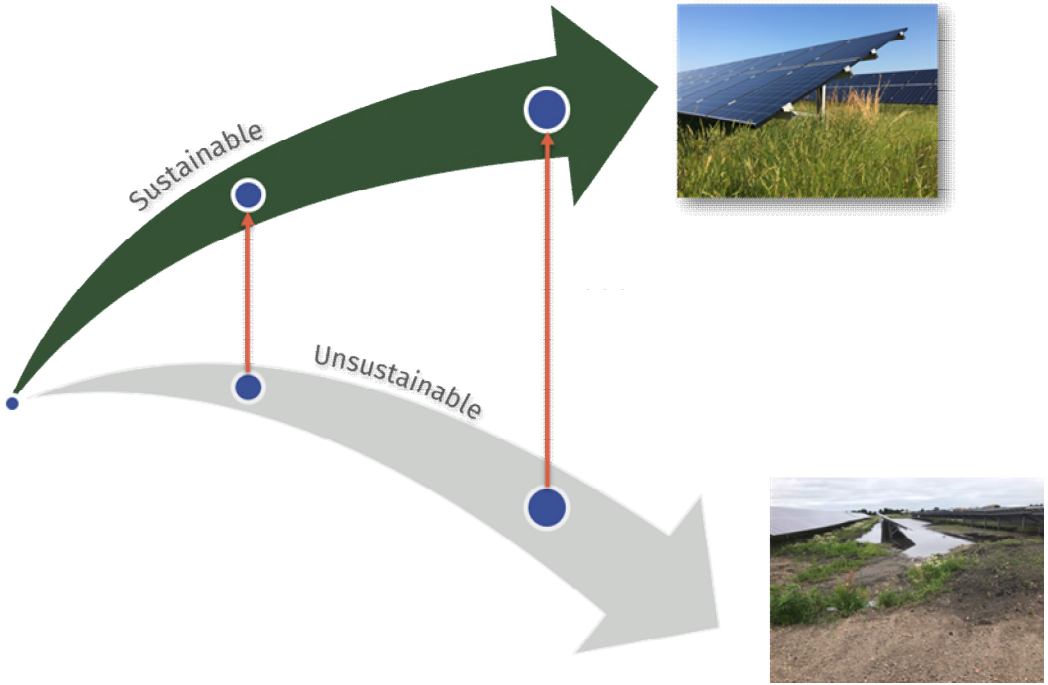
Introduction

- Sustainable vegetation
  - Regionally appropriate
- Environmental co-benefits
  - Carbon sequestration
  - Soil health improvements
  - Biodiversity uplift
  - Stormwater retention
- Lack of verifiable data



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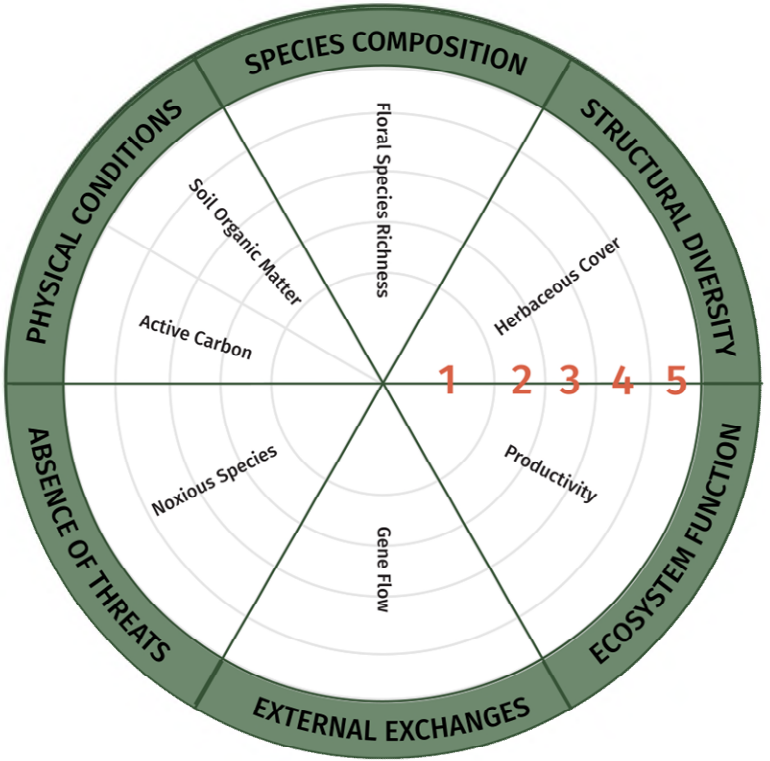
Background

- Society for Ecological Restoration (SER)
  - Standards and tools for measuring restoration success
- Outer attributes = six core aspects of ecological recovery
- Sub-attributes are modified to meet project goals and objectives
- Can be monitored over time using rapid ecological assessment techniques



Graphic adapted from SER

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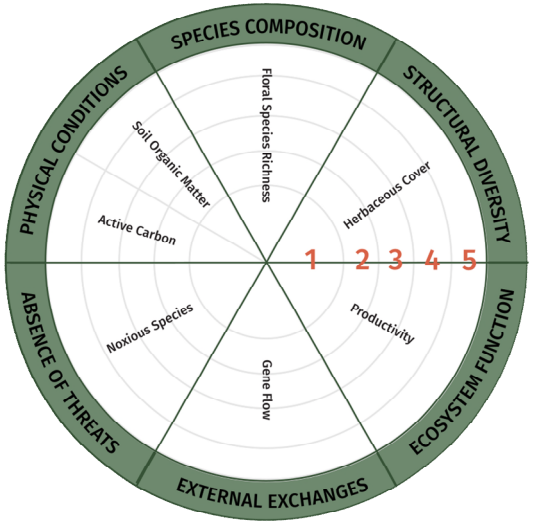
1. Gather long-term data

2. Flexible, rapid, and inexpensive methods

3. Repeatable and scalable



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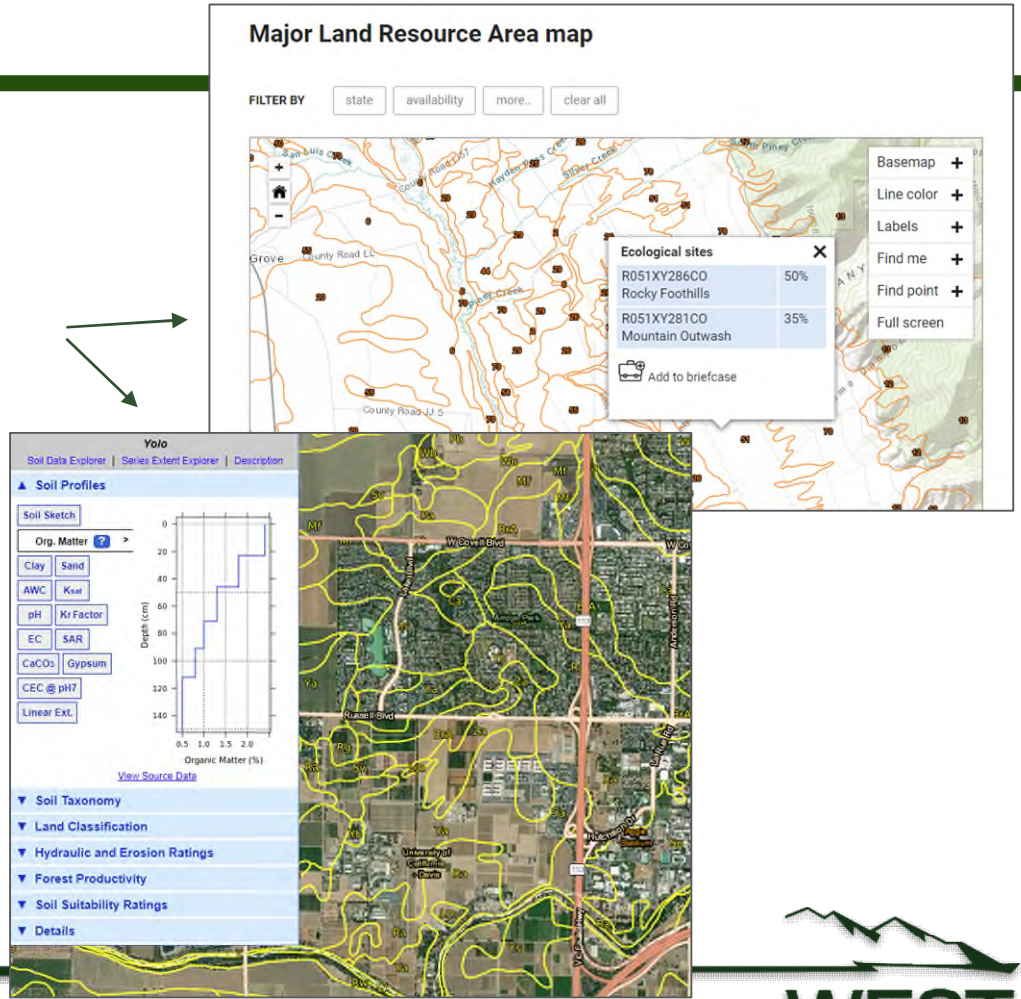
Implementation

1. Identify the reference model conditions for all sub-attributes
   - Review public datasets
   - Collect field-based reference model data
2. Determine monitoring methods
3. Develop project-specific scoring system based on reference model criteria



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Sub-attribute	Methods
Herbaceous cover	Quadrat sampling
Noxious species	Quadrat sampling and meander surveys
Floral species richness	Quadrat sampling and meander surveys
Gene flow	Quadrat sampling and meander surveys
Productivity	Quadrat sampling and meander surveys
Soil organic matter	Soil samples and lab tests
Active carbon	Soil samples and lab tests

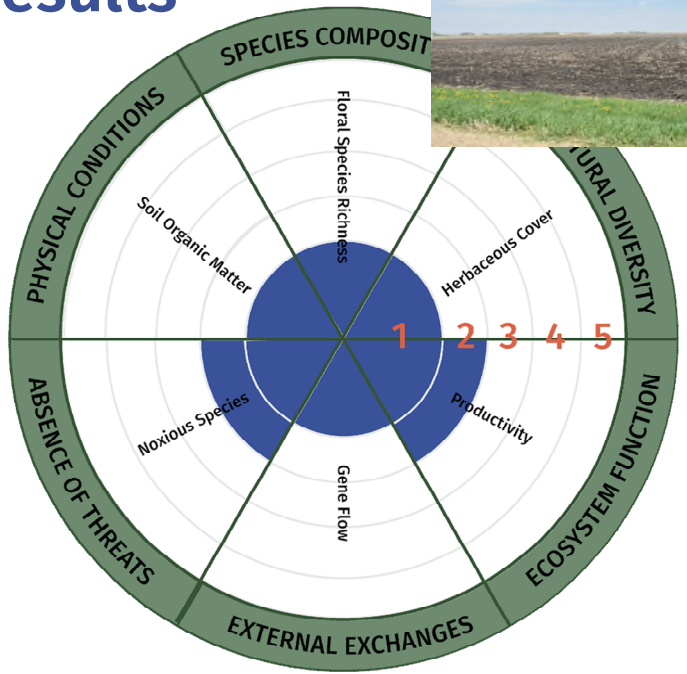
*Can sample a ~4,000-acre site in three to four field days using these methods

Floral Species Richness

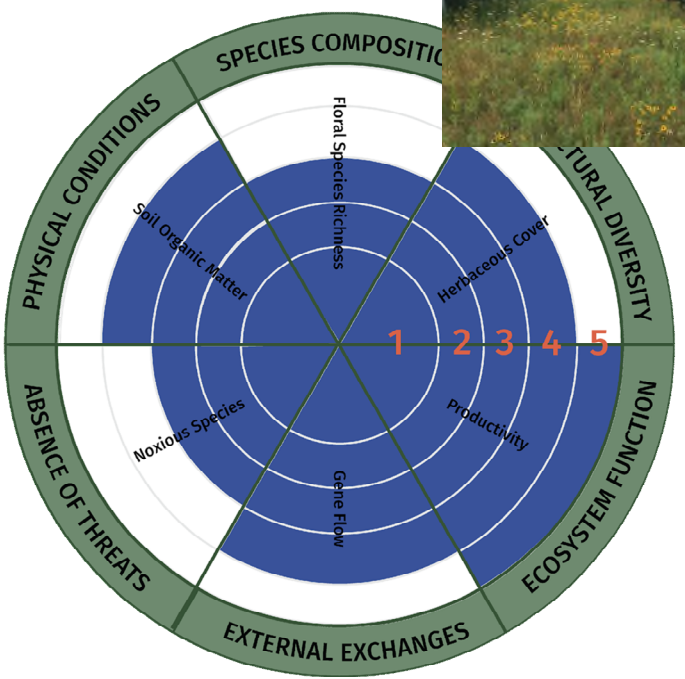
- ★ Target species colonizing
- ★★ Small subset of target species present
- ★★★ Moderate subset of target species present on substantial portions of the site
- ★★★★ Substantial diversity of target species present across the entire site
- ★★★★★ High diversity of target species present across the entire site

Photo provided by WEST field crew

Results



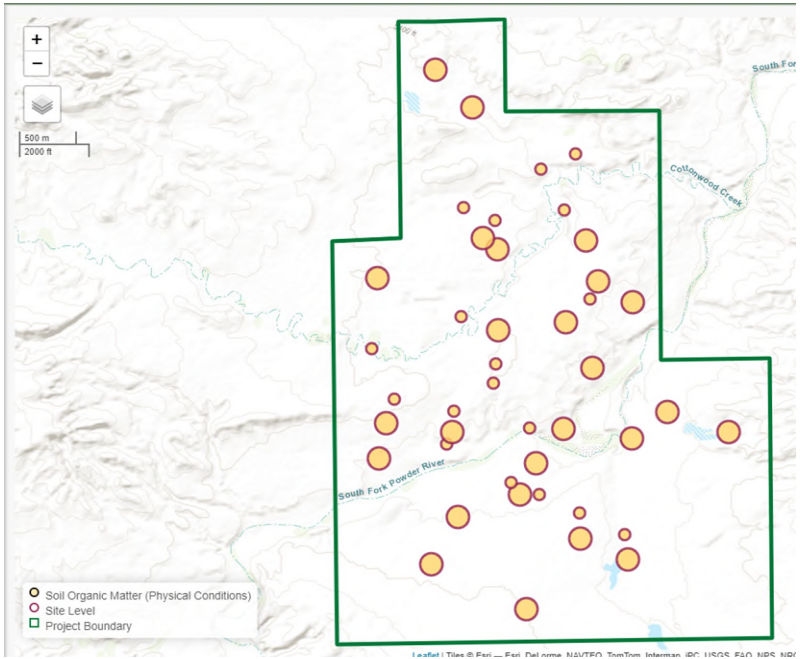
Pre-construction
(Baseline)



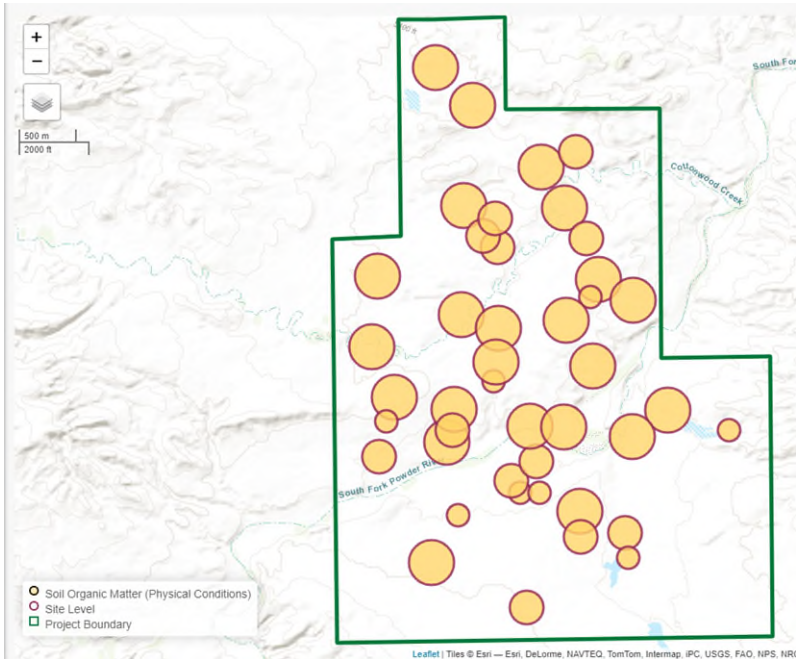
Post-construction
(5 years)

Photos provided by WEST, Recovery wheel adapted from SER

Data Visualization



Pre-construction
(Baseline)



Post-construction
(5 years)

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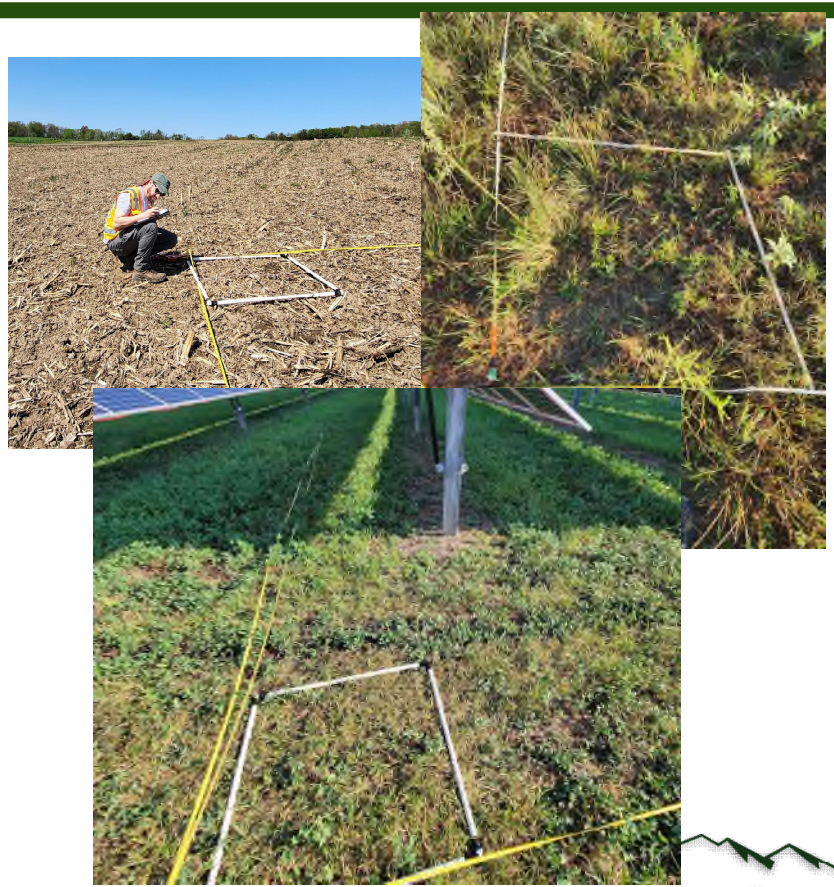
Conclusion

- Globally recognized method for uniform application across ecosystems
- Efficient data collection and evaluation
- Empirical evidence to illustrate ecological benefits
- Informs adaptive management decisions
- Commitment to entire project life cycle



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Thank You!

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