Outcome:

Resilient Economic Agricultural Practices that revitalize soil health and resiliency; thereby, enabling the soil resources to meet expanding societal demands while addressing global environmental concerns

Cover the soil, protect the water

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ARS National Program Linkages
www.ars.usda.gov/research/programs.htm

REAP cross-location research is closely aligned with goals and objectives of the ARS National Program for Soil and Air (NP 212), but problems associated with Water Availability and Watershed Management (NP 211), Biorefining (NP 213), Agricultural System Competiveness and Sustainability (NP 216), and Crop Production (NP 305) are also addressed by team members.

USDA United States Department of Agriculture

ARS MISSION

The Agricultural Research Service conducts research to develop and transfer solutions to agricultural problems of high national priority and provides information access and dissemination to

- ensure high-quality, safe food and other agricultural products,
- assess the nutritional needs of Americans,
- sustain a competitive agricultural economy,
- enhance the natural resource base and the environment, and
- provide economic opportunities for rural citizens, communities, and society as a whole.

August 2016

Healthy Soils → Healthy Landscapes

Resilient Economic

REAP

Agricultural Practices

Vibrant Economies

REAP recognizes and strives to enhance our diverse and precious soil resources through trans-disciplinary, multi-location research and technology transfer.

"Soil organic matter is the nation's most precious resource."

William A. Albrecht, 1938, "Soils and Men"

ARS – REAP

A Cross-Location Research Team

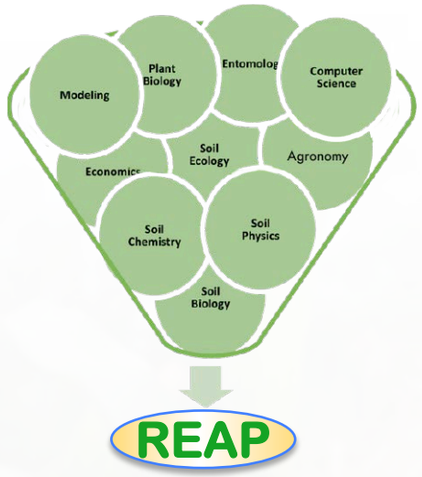
Initial Vision and Outcomes

- Formed as the Renewable Energy Assessment Project
- To identify biomass feedstock harvest rates and management strategies that would sustain soil resources
- Outcomes
  - Recognition of SOC as a key sustainability indicator
  - Enhanced collaboration
  - Guidelines for sustainable corn stover harvest
  - Improved national biomass supply assessments

Current Vision and Focus

- Responding to stakeholder input REAP was redefined as the "Resilient Economic Agricultural Practices" team
- Soil health and resilience became the focal point to sustainably intensify the provision of food, feed, fiber and fuel.
- Desired outcomes include increased soil carbon improved soil health, efficient nutrient cycling, improved water quality, and economically sustainable agricultural opportunities.

New Vision:
Healthy Soils – Healthy Landscapes – Vibrant Economies



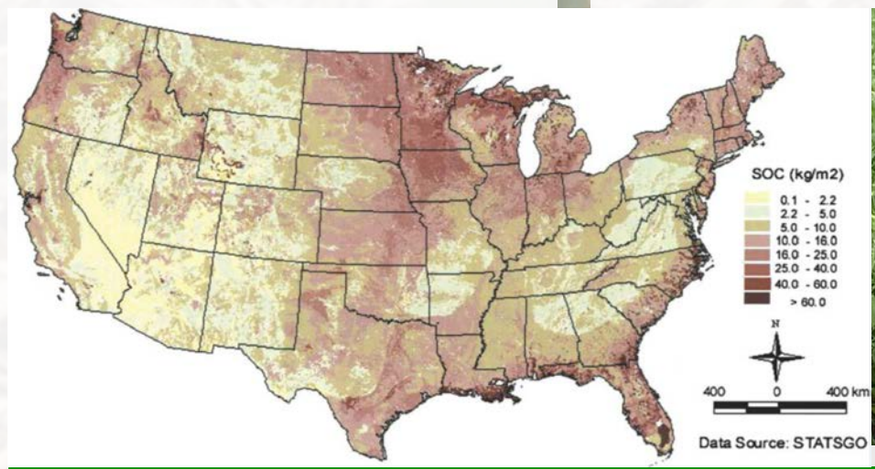
Project Goals:

1) Identification of physical, chemical, or biological parameters and index tools that quantify management effects on carbon sequestration and soil health
2) Quantitative multi-location comparisons of business as usual (BAU) versus management practices designed to enhance soil health.

Develop, expand, and coordinate among ARS teams providing data needed to meet the ARS Grand Challenge of trans-forming agriculture to Deliver a 20% increase in Quality Production with 20% lower environmental impact by 2025.

Project Products:

1) Database populated with physical, chemical, and biological parameters that effectively document temporal changes in soil health.
2) Provide high quality data to decrease uncertainty and improve performance in process-based models
3) Science-based recommendations for economically-viable management practices that increase carbon sequestration, improve climate resilience, and reduce nutrient losses.
4) Provide field-validated data to support public and private stakeholders, research networks, and other national assessments.



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