

**unlock the SECRETS IN THE SOIL**

# The road to Soil Health

STC Briefing  
2.14.13

USDA NRCS  
United States Department of Agriculture  
Natural Resources Conservation Service

United States Department of Agriculture is an equal opportunity provider and employer.

**Food for thought...**

World population is estimated to reach 9.1 billion by 2050.

To sustain this level of growth, we will need to produce as much food in the **next 40 years** as we have in the **past 500 years**.

**World population development**

Year	Industrialized countries (Billions)	Developing countries (Billions)	Total (Billions)
1750	0.0	0.0	0.0
1800	0.0	0.0	0.0
1850	0.0	0.0	0.0
1900	0.0	0.0	0.0
1950	0.0	0.0	0.0
2000	0.0	0.0	0.0
2050	1.5	7.6	9.1

UNEP WorldPop  
Arendal

### **Food for thought...**

Globally, desertification and farmland conversion is accelerating.

In the U.S. alone, between 1982-2007, 14 million acres of prime farmland was lost to development.



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### **Food for thought...**

#### **Need to optimize inputs**

Producers are searching for ways to optimize inputs and maximize profits.



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## Food for thought...

"Agriculture is facing a huge loss of non-renewable resources... we can't wait till 2050 to start. The clock's ticking. We're already at the tipping point. We must start planning now."

*Paul Farrell, MarketWatch*

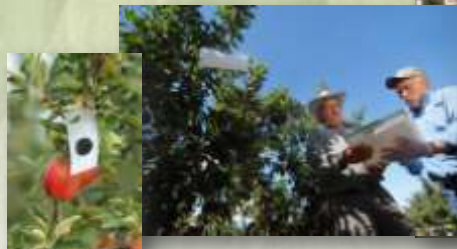
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## The Changing Landscape of Conservation Assistance

The nation is facing expanding and conflicting environmental, land use, and food production priorities.

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So, what's soil health  
"got to do with it?"

Everything.



### Benefits of healthy soils

- ✓ Improve water quality
- ✓ Regulate water and reduce flooding
- ✓ Cycle organic wastes and detoxify noxious chemicals





### Soil Health Benefits *(continued)*

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- ✓ Increase soil carbon and remove CO<sub>2</sub>
- ✓ Save energy
- ✓ Save water and increase drought tolerance



### Soil Health Benefits *(continued)*

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- ✓ Improve income sustainability
- ✓ Improve plant health; and
- ✓ Increase nutrient-rich food production



## Soil Health Benefits *(continued)*

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- ✓ Improve wildlife habitat and estuarian food production
- ✓ Reduce disease and pest problems



## Watershed Level Benefits

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- ✓ Reductions in sediment and nutrient delivery to surface waters decreases potential for downstream hypoxic zone formation
- ✓ Increased infiltration and water holding capacity.



### A landscape example...

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By **increasing the water absorption** of all of the cropland in the Mississippi River Basin by just **one-half inch** (through improved soil quality), that water retention would be the equivalent of...



### A landscape example...

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The amount of water that flows over Niagara Falls in 83 days.



## Producer Benefits, North Dakota example



- Gabe Brown has maximized his inputs, increased profits and has reduced his pesticide application by half.



## Practices related to SHMS



### Mandatory

- 328 Conservation Cropping Rotation
- 329 No-till or Strip-till
- 340 Cover Crops
- 590 Nutrient Management
- 595 Pest Management (Integrated)

### As Applicable

- 512 Forage and Biomass Planting
- 345 Mulch
- 633 Manure Utilization and Management
- 393,332 Conservation Buffers, Filter Strip

### As Applicable (Con't.)

- 449 Irrigation Conservation
- 311 Alley Cropping
- 317 Composting Facility
- 610 Salinity Management
- Deep Tillage?

### Recommended

- Precision Application of Nutrients
- Controlled Traffic no Tillage
- Flotation Tires no Tillage
- Strip Cropping



## Systemic resource treatment

- By focusing on soil health, we can have a positive impact on every major resource concern.
- Increase efficiencies and farm profitability.
- Maintain or even increase ag productivity.

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## The Ultimate Goal

Increase the number of producers operating with Soil Health Management Systems (at the NRCS criteria level).

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## NRCS' campaign features soil health farmers making the case for soil health...



## Integrated communications support...

Print support materials in clearance.



## Banner stands, exhibits





# Video Products

## Video products



# New website





## Starting down the road



- Form a new division
- Add a STC Advisory Team
- Division Objectives
- Establish a Training Cadre
- Expand customer and stakeholder outreach and communications activities

## Soil Health Division Formation



- In order to ensure key support, coordination and integration of this effort, a new division of Soil Health will be established under the Deputy for Science and Technology.
- Dedicated agency soil health representatives will be assigned to the team and will be responsible for ensuring the implementation of the aforementioned deliverables. Those primary core team positions include:
  - Soil Health Management Division Director
  - Soil Health Management Partnership/Communications Liaison
  - Soil Health Management Specialist

## STC Advisory Team



- Members of the State Conservationists' Soil Health Advisory Team will serve as liaisons to fellow state conservationist and will provide direction to the Soil Health Division Director regarding implementation of state/local level soil health activities.
  - Kevin Brown, TN, Team Leader
  - Dr. William Puckett, AL
  - Mary Podoll, ND
  - Xavier Montoya, NM
  - Christine Clarke, MA

## Soil Health Division Objectives



- Ensure NRCS workforce is prepared to meet the needs of soil health management service delivery; (FOTG, Training)
- Ensure increased adoption of SHMS through its on-going customer and stakeholder awareness and education effort;
- Ensure that timely and appropriate technical and financial assistance is provided to customers wanting to implement SHMS; and
- Identify and support emerging partnership opportunities from interested organizations and businesses.
- Replicate the campaign's design and implementation to address other land uses.

## Training cadre



- Establish eight (8) Soil Health Training positions, two (2) per NRCS region with locations being determined, and subdivided into smaller areas.
- Positions located in available NRCS office space allowing for the greatest amount of service to be provided, while minimizing travel distance.

## NRCS & the Nation's Road to Soil Health



SHMS protect resources cost-effectively, while increasing the productivity of our nation's working lands.



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