



Introduction to Soil Health

Module 1

Presenter Name
Date
Location

Objectives

1. Define soil health and discuss why different words in the definition are important
2. List the primary functions of soil and impact on the environment or ecosystem
3. Describe importance of soil health in ag & society



Cochrane, NRCS

How does NRCS Define Soil Health?

The continued capacity of the soil to function as a vital living ecosystem that sustains plants, animal and humans.





SOIL HEALTH:

- *The continued capacity of a soil to function as a vital, living ecosystem that sustains plants, animals, and humans.*



SOIL HEALTH:

- ***The continued capacity of a soil to function as a vital, living ecosystem that sustains plants, animals, and humans.***

- Water (infiltration & availability)
- Nutrient cycling (hold and provide)
- Filtering and Buffering
- Physical Stability and Support
- Habitat for Biodiversity (90% is mediated by soil microbes)

Demonstrate how management affects soil function.

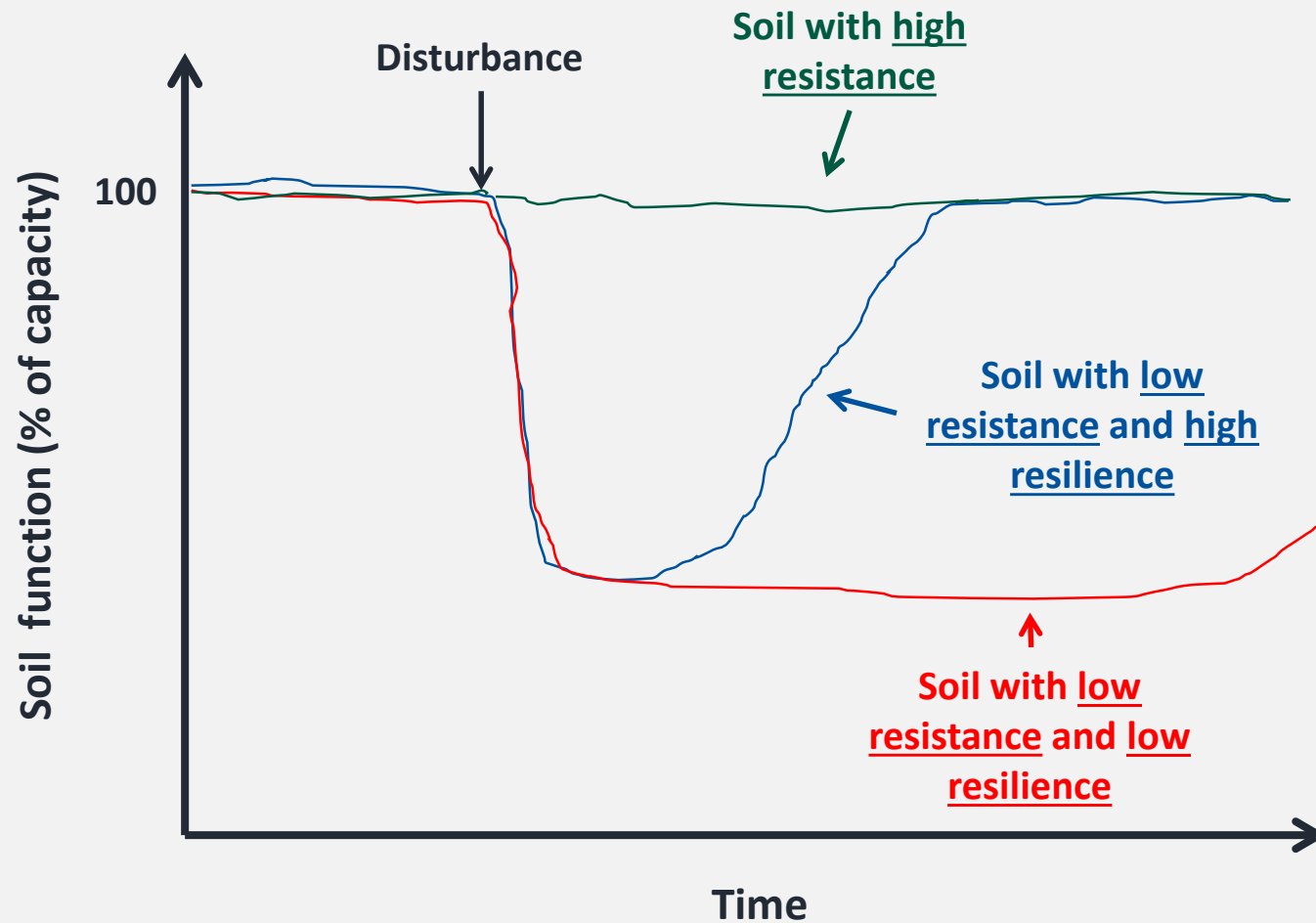




What Services do Functioning Soils Provide?

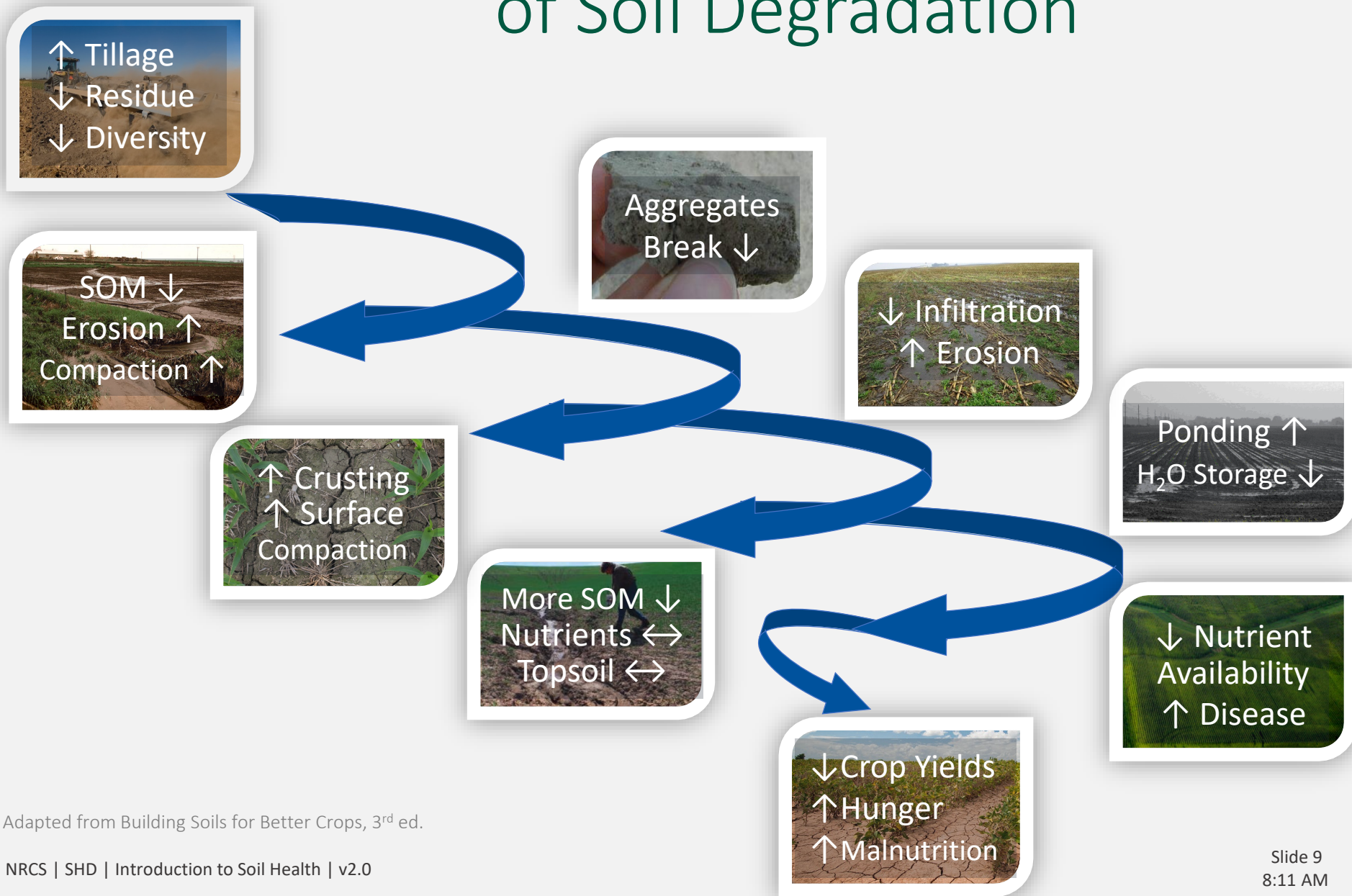
- Produce food, feed, fiber, biofuels & medicine
- Resilience to drought, flood & temp extremes
- Protect plants from pathogens and stress
- Detoxify pollutants
- Store C and moderate release of gases
- Resist erosive forces
- others?

Soil Health and Function

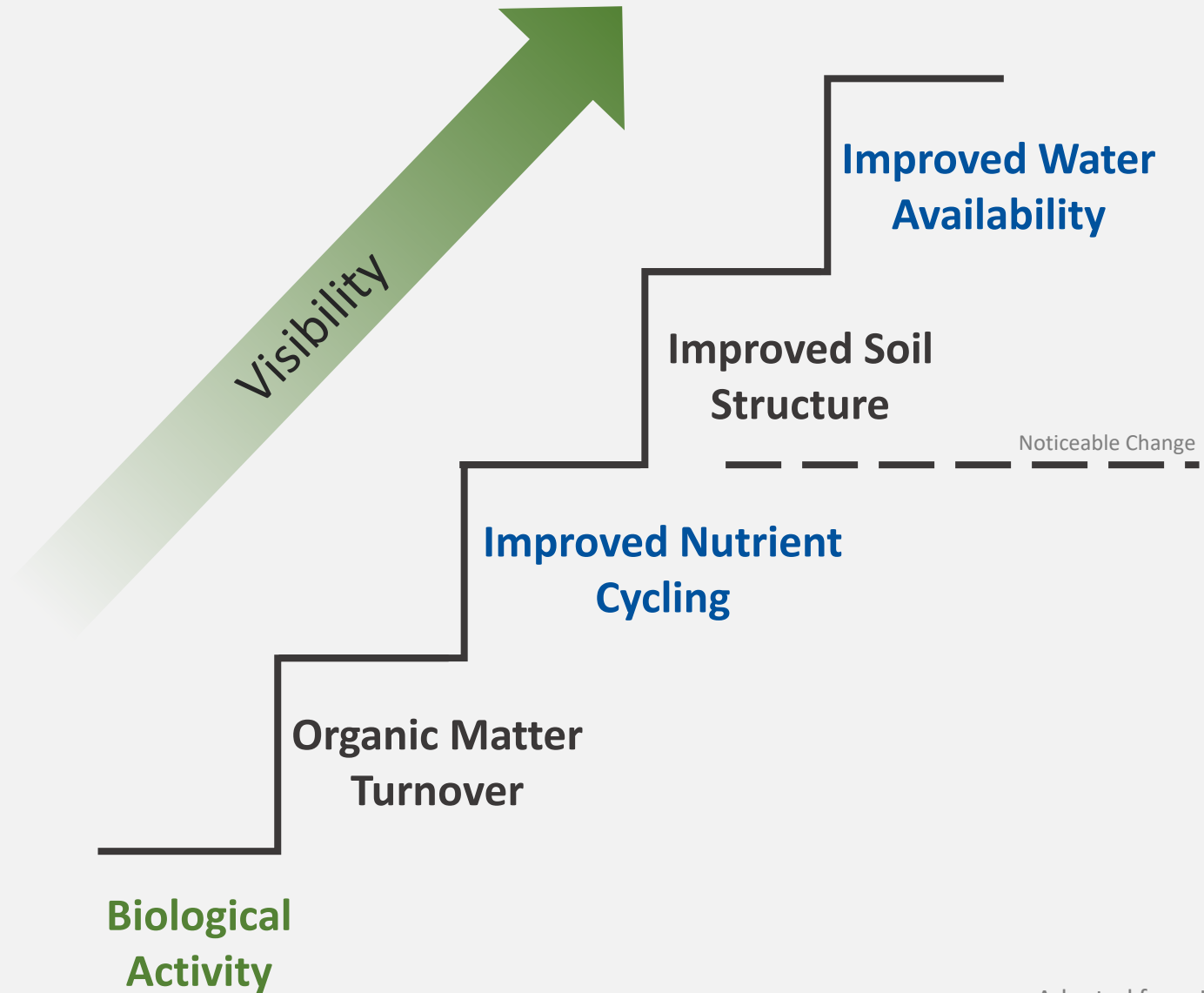


Adapted from Brady & Weil, 2008

Downward Spiral of Soil Degradation



Soil Aggradation Climb



Adapted from Hatfield *et.al.*

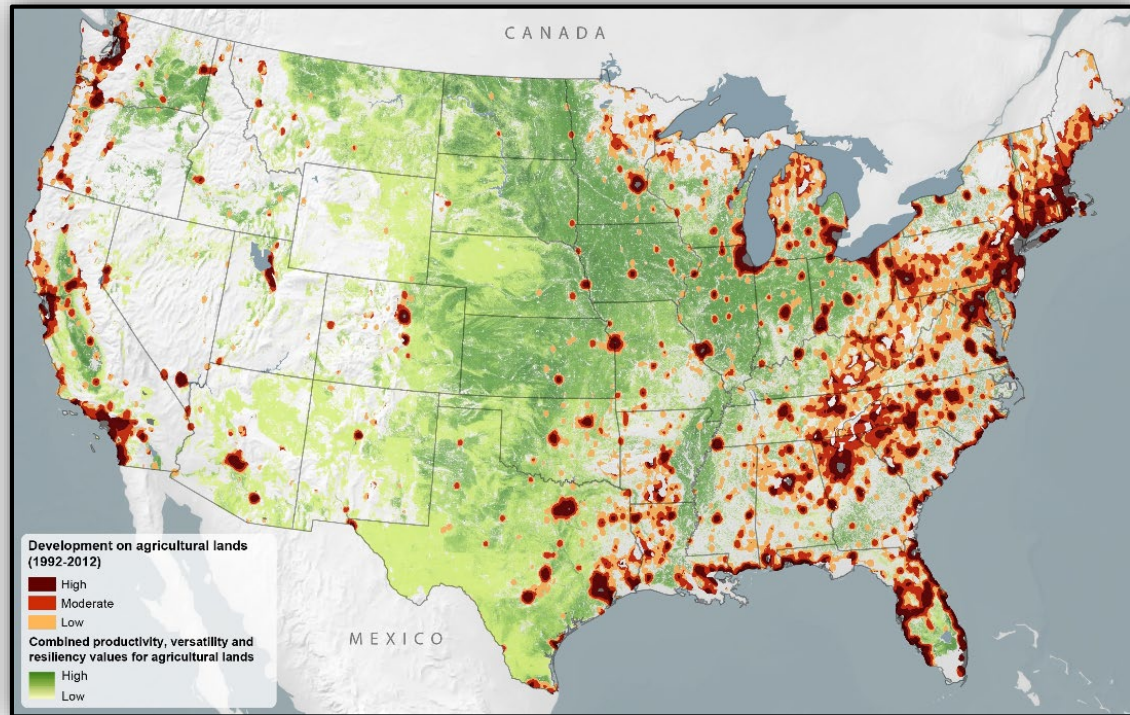
Characteristics of Loss of Soil Function



Photo credits: Case International; all others USDA

Producing More on Fewer Acres – Development Pressure

- Between 1992 and 2012, nearly 31 million acres lost
- 11 million were best farmland acres in the nation
- 62% of all development was on farmland



Farms Under Threat, Farmland Trust, May, 2018

Soil Health in Popular Press



REGENERATIVE AGRICULTURE

Healthy Soil: Good for the Farmer, Good for the Planet

By [Regeneration International](#) | May. 02, 2018 08:28AM EST



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Soil Health Institute Selects Seven Scientists, Begins Sampling Phase of North American Project to Evaluate Soil Health Measurements

The project will assess 31 indicators of soil health, partnering with teams from long-term research sites and scientific laboratories across Canada, the United States, and Mexico.

Submitted by:

The Soil Health Institute

Categories:

Environment, Research, Reports & Publications

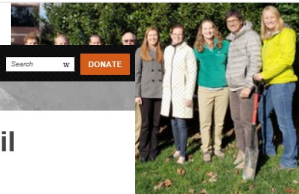
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Jan 22, 2019 - 09:05 AM EST



SOIL HEALTH
INSTITUTE

RESEARCH TRIANGLE PARK, N.C., Jan. 22 /CSRwire/ - The Soil Health Institute



ies Ph.D., Gregory Macfarland Bean Cope Ph.D., Paul Tracy Ph.D., Kelsey

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BIG FOOD TAKES SOIL HEALTH SERIOUSLY

FROM SOIL HEALTH SUMMIT, MCDONALD'S SUSTAINABILITY DIRECTOR TALKS INVESTING IN SUSTAINABILITY PROGRAMS.

By [Bill Spiegel](#)
1/23/2019

Minnesota Farmers Use Buried Underwear to Test Soil Health

Some southern Minnesota farmers are using underwear as a creative way to test soil health.

By [Associated Press, Wire Service Content](#) Sept. 29, 2018, at 10:28 a.m.

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nature

ENVIRONMENT

Secrets of Life in the Soil

built a career on overturning assumptions about underground ecosy she is seeking to protect this endangered world

By [Rachel Cernansky](#), [Nature](#) magazine on September 13, 2016



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How cover crops help keep soil healthy and productive



The New York Times Magazine

FEATURE

Can Dirt Save the Earth?

Agriculture could pull carbon out of the air and into the soil — but it would mean a whole new way of thinking about how to tend the land.

State of the

State of the US potato industry: Tariffs, transportation, soil health top issues

BY [LUKIE PIETERSE](#) ON JANUARY 28, 2019

Current Books Promoting Soil Health



Farmers are Catching the Vision of Improving Soil Function through Management

