The Soil Will Save Us
Sheep grazing organic almond orchard
Chef Parker Bosley
Carbon Farming
300,000,000,000,000,000,000,000,000,000 stars!
6 foot roots
Fungi and bacteria
Bacteria-eating nematode
Tardigrade
Protozoa
Human microbiome – the tongue
Cyanobacteria
Filled with carbon!
MICROBIAL AND FUNGAL BYPRODUCTS GLUE THE PARTICLES TOGETHER

DISPERSED STATE

AGGREGATED STATE
Water retention we can live with...

By improving soil organic matter by just ½ percent on all of the cropland in the Mississippi River, that cropland would store the amount of water that flows over Niagara Falls in...

83 days.
Healthy soil has amazing water-retention capacity.

Every 1% increase in organic matter results in as much as 25,000 gal of available soil water per acre.

Source: Kansas State Extension Agronomy e-Updates, Number 357, July 6, 2012

Want more soil secrets? Check out www.nrcs.usda.gov

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Destroying soil structure
Bare soil = carbon loss!
Tillage and runoff
The dead zone
An annually recurring area of low oxygen in the Gulf of Mexico has grown to an area of 8,776 square miles, or about the size of New Jersey.

Source: NOAA  Graphic: Tribune News Service
Photosynthesis
A lush companion crop of ryegrass, buckwheat, oilseed radish, chickling vetch, and dwarf Essex rape enjoys the extra space between 60-inch rows on the Loran Steinlage farm in Iowa.
Profiles in soil health

Gabe Brown
Bismarck, North Dakota
5,000 acres
Crops: Corn, wheat, sunflowers, alfalfa, oats, triticale, hairy vetch and peas
Planting: All No-till
Covers: Cocktail mixes with 20-25 different plant species.
Dirt to Soil
One Family’s Journey into Regenerative Agriculture

Gabe Brown
Cover crops
Gabe Brown’s results

--27 more bushels of corn per acre than county average

--spends only $1.25 per bushel, vs $3.50

--organic matter in soil risen from 1.7% to 5.3%

--water infiltration has gone from ½ inch per hour to 15 inches per hour
Bark mulch & Roundup