NATIONAL CONFERENCE ON
COVER CROPS & SOIL HEALTH
HARVESTING THE POTENTIAL
Sunlight being harvested

October 30, 2013, Steve Groff farm, southeastern PA
When there is no cover

November 22, 2012, Decatur, IL
Hugh Hammond Bennett
founder of the
USDA Soil Conservation Service (now NRCS)

March 21, 1935

“Out of the long list of nature's gifts to man, none is perhaps so utterly essential to human life as the soil.”
Is soil erosion still a problem?
Soil erosion after five inches or more of rain fell in one hour across portions of Western Iowa in 2013.

USDA Natural Resources Conservation
Erosion and Sediment Loss at a Large Scale

Sediment flowing into Chesapeake Bay from Susquehanna River, September 13, 2011

Image courtesy NASA/GSFC/MODIS
Hugh Hammond Bennett’s work is not yet done

Indiana farmland, from ScienceBlogs.com (2007)
Cover crops can be a key part of today’s conservation efforts.
Grand Lake St. Mary’s, Ohio
Grand Lake St. Mary’s, Ohio
Record nitrate levels from farm runoff in rivers

FRIDAY MAY 10, 2013 | THE ASSOCIATED PRESS

Rivers providing drinking water running at record high nitrate levels from fertilizer runoff
Our Opportunity

Crimson clover in the springtime, University of Missouri Bradford Farm, Columbia, MO
CAN COVER CROPS PAY?

Cover crop impact on corn and soybean yields in 2012 and 2013

SARE/CTIC National Survey Results
Impact of Cover Crops on Corn and Soybean 2012 Yields*

*Yields are for 2012 on farms where farmers had side by side fields with similar management and varieties, other than using cover crops or not.
Impacts of Cover Crops on Corn and Soybean Yields in 2013

Based on 529 Respondents

Preliminary data from 2013-14 SARE/CTIC cover crop survey
YIELD IMPACT OF COVER CROPS

Based on two years of national surveys with data from hundreds of farmers, cover crops boosted corn and soybean yields with a **5 to 10% increase**.
Do Cover Crops Pay?

Cover crop costs

- Seed purchase ($20-30), planting the seed ($10-12), terminating the cover crop ($0-10) — total in the range of $30-50/acre, median figure from survey is $37/acre for seed and seeding.

Potential short-term returns from cover crops

- Yield (farmers reported 5-10% yield boost in SARE/CTIC surveys)
- Assuming average 5% yield increase, 2013 national average corn and bean yields and current corn and bean cash prices –
  - $35/acre return for corn (159 bu/ac @ $4.45/bu x 5%)
  - $28/acre return for soybeans (43 bu/ac @ $13.23/bu x 5%)
- Nitrogen credit (depends on N fertilizer application method and type of cover crop) - $0-30/acre
- Weed and other pest management – variable – $0-15/acre
- Grazing opportunities? Value of forage $30-45/acre or more
Do Cover Crops Pay?

Potential long-term on-farm returns from cover crops

- Building the organic matter – helps with nutrients, soil moisture, and possibly land value
- Reduced soil compaction and reduced pressure from some diseases
- Improved soil health – improved yield and increased resiliency of the cropping system
- Reduced erosion of soil and better soil tilth, helping with cash crop establishment
- Overall change in management system may lead to lower production costs
Cover Crop Economics

- Off-farm returns to society (tax payers)
  - Less sedimentation in streams and rivers, so less dredging
  - Reduced movement of pesticides off of farms
  - Reduced nutrient loading of surface waters – local rivers and lakes to Chesapeake Bay, Lake Erie, Gulf of Mexico, etc.
  - Increased sequestration of carbon into the soil
  - Benefits for wildlife, pollinators, even greener countryside
  - Lower crop insurance payouts?
Can we move farther and faster with adoption of cover crops and soil health practices?

2-3 million acres of cover crops now
Can we get to 20 million acres of cover crops?
Can we get there by 2020?
Total acres of cover crops planted by surveyed farmers

Annual growth rate of 31.1%, over most recent three years

Preliminary data from 2013-14 SARE/CTIC cover crop survey
High clearance cover crop broadcast seeder
Can We Get to 20 Million Acres of Cover Crops by the Year 2020?

Total acres in the U.S.

Assumes annual growth rate of 31.1%, based on the growth rate from SARE/CTIC survey.
NATIONAL CONFERENCE ON
COVER CROPS & SOIL HEALTH
HARVESTING THE POTENTIAL