



With everything we are doing, and the money we are spending, why do we still see this?

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And this? DUST BOWL 2010



Photo Credit:
nbcnews.com



Photo Credit: denverdirect.blogspot.com

Chouteau Co. In 2015

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Chouteau Co. in 2014

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Yellow stone County Last Week

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IT CAN'T BE IGNORED

- ▶ SOIL HEALTH AFFECTS ALL OF OUR NATURAL RESOURCES
- ▶ IT AFFECTS:
 - ▶ THE FOOD WE EAT
 - ▶ THE WATER WE DRINK
 - ▶ THE AIR WE BREATHE

▶ JUST DIG IT

Soil Health – its everything and everywhere for NRCS!

- ▶ It's in our performance plans
- ▶ It's in the NRCS Strategic plan
- ▶ It's all over our website!
- ▶ It's in our programs!
- ▶ It's tied to most of our conservation practices!
- ▶ NRCS has a campaign promoting it.....



Chief Weller

Testimony on the Hill, Sept. 18, 2014

- ▶ “Mr. Chairman, I will conclude by saying that I believe improving the health of our nation’s soils is one of the most important things that we can do for this and for future generations. That is because improving soil health not only supports growing the food, fiber, and fuel needed by a rapidly expanding world population, but it also allows us to simultaneously address some of our nation’s most pressing natural resource needs.”

- ▶ Today, our focus on soils goes beyond erosion to include the overall health of our nation's soils. *When we speak of improving soil health, we are talking about actually enhancing the soil's capacity to function as a vital, living ecosystem that sustains plants, animals, and humans.*
- ▶ As one farmer recently observed, "Anything can have quality, but only living things can have health."

We even have videos!

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Team Night Crawlers Soil Health- Just Dig it!

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Project Summary

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- ▶ List and describe the different methods that NRCS is using to promote Soil Health.
- ▶ Find out if what NRCS is doing to promote Soil Health is effective.
 - ▶ NRCS perspective
 - ▶ Producer perspective
 - ▶ Effectiveness of Programs

Project Summary

- ▶ Develop a list of recommended actions to encourage the sustained use of practices that improve soil health.
- ▶ Figure out how soil health could be measured in a way that could show past and future trends, but in a way that does not impact the field office.

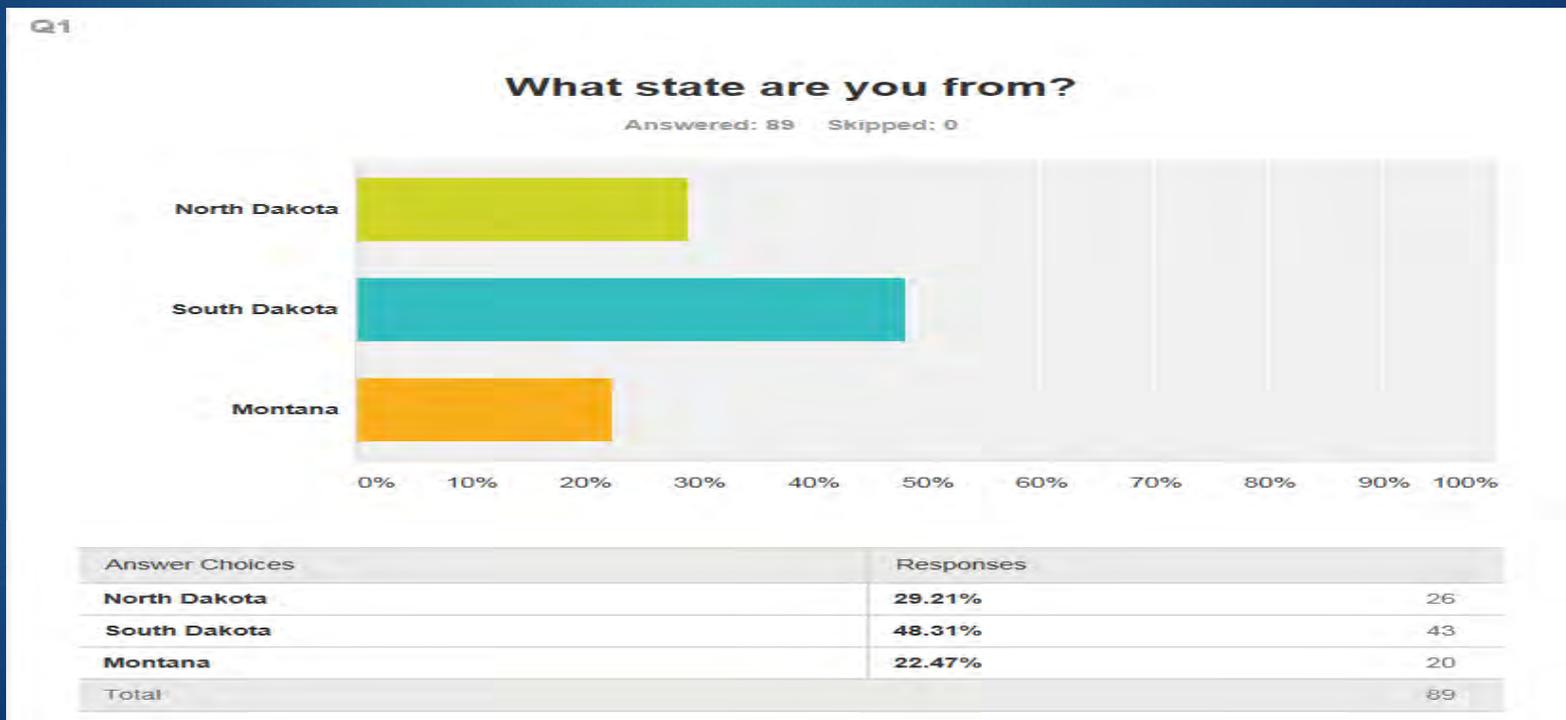
Soil Health – Just Dig It!

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- ▶ What is NRCS doing to Promote Soil Health?
 - ▶ Soil Health Surveys
- ▶ What do NRCS customers think?
 - ▶ Producer Interviews
- ▶ Practice Trends
- ▶ Potential Measurements of Soil Health
- ▶ Recommendations

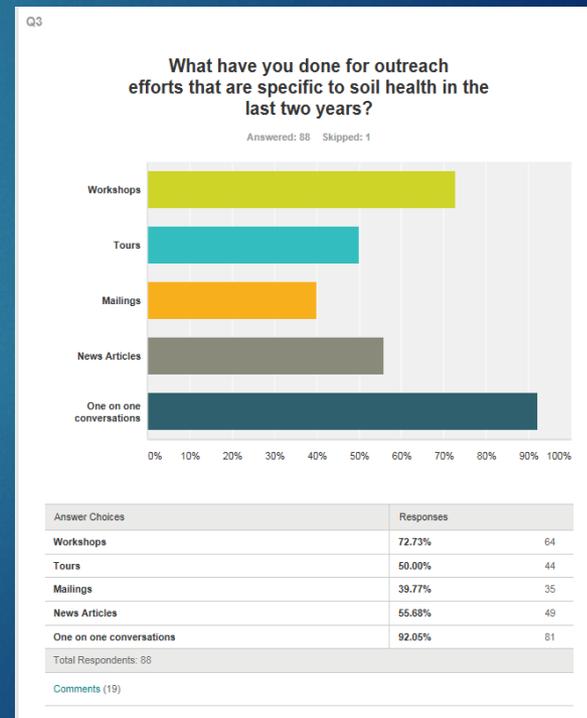
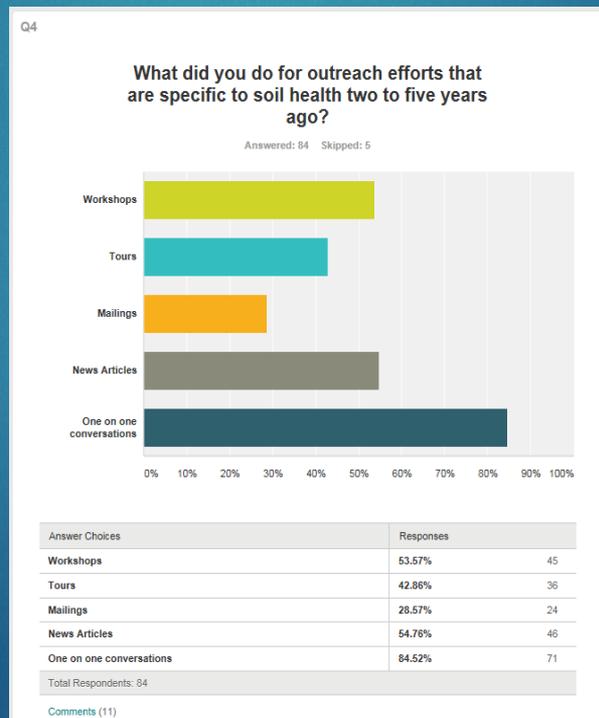
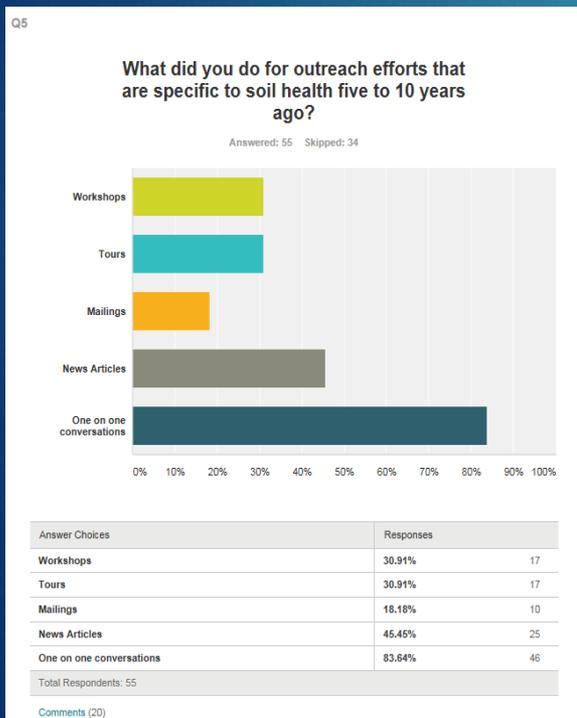
What is NRCS doing to promote Soil Health?

- ▶ A soil health survey was sent out to all the field offices in ND, SD, and MT.

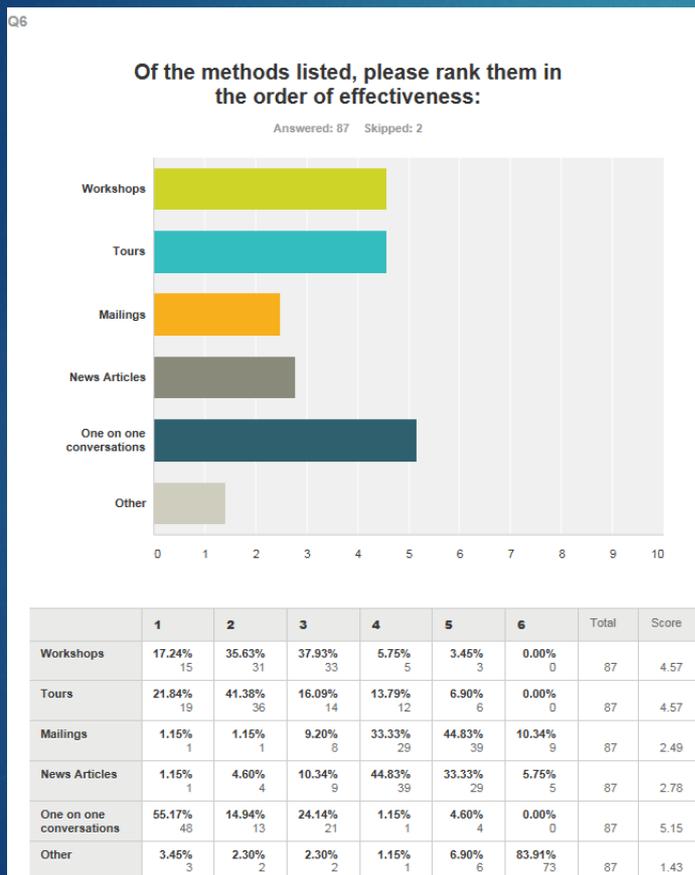


What is NRCS doing to promote Soil Health?

Field offices have started to do more workshops, tours, and mailings to promote soil health, but one-on-one conversations are still the most popular way to get the message across.



What is NRCS doing to promote Soil Health?



- ▶ Field offices believe that one-on-one conversations are the most effective way to promote soil health.
- ▶ Workshops, tours, and visual demonstrations are great ways to reach a bunch of people at one time and often get the one-on-one conversations started.

What is NRCS doing in Mt. for Soil Health Outreach

- ▶ Workshops (large and local)
- ▶ Self-drive tours around the county
- ▶ Soil to Skillet Workshops
- ▶ No-till/composting/gardening workshops
- ▶ Ladies Day on the Range
- ▶ Bus tours with producers and districts to Bismarck and Pierre
- ▶ Emailing producers with soil health articles
- ▶ Producers hosting field days and inviting their neighbors/Shop Talks
- ▶ Pasture Walks
- ▶ Slake and infiltration tests with Conservation District Supervisors
- ▶ Soil Health Book library in office
- ▶ Rainfall Simulator

Comments from field offices

- ▶ Perseverance and Tenacity
- ▶ Get shot down a bunch
- ▶ Tour to Bismarck w/ supervisors (90% of them are now doing something significant)
- ▶ Producers don't leave the office without a soil health talk
- ▶ Most started small and gradually built because they didn't give up
- ▶ People showing interest that they never thought would
- ▶ Invest time to learn it, and then you can sell it
- ▶ Has made contracts better and easier
- ▶ Producers have loved to tell us what they are doing (listening and asking them questions)

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What do NRCS customers think?

- ▶ Which outreach efforts were most beneficial to your operation?
- ▶ What practices have you installed on your operation for Soil Health?
- ▶ Do you still maintain these installed practices?



Producer Survey

- ▶ 17 producers across the state were interviewed
- ▶ Nine of the 17 producers like a combination of all types of outreach
- ▶ Four liked one-one conversations the best
- ▶ Several commented on the producer panels
- ▶ Four liked the field days/tours
- ▶ Several like one-on-one but received valuable information at the workshops
- ▶ Many still get information via the Conservation District News Letters
- ▶ Some like articles via email for those offices that are sending emailed soil health articles

Notification of Events

- ▶ Most like email
- ▶ They all liked texts or email reminders
- ▶ Phone calls
- ▶ Some still liked the flyers

The Not So Positive

- ▶ Montana and NRCS is way behind
- ▶ Some producers were frustrated that NRCS got them started but couldn't help them further along the way

Producer Quotes

- ▶ “Got to keep pounding the drum. Sometimes we need to hear it 10 times before it really sinks in”
- ▶ “Take Baby Steps and have patience”
- ▶ “The More interest you show the more you get out of it”
- ▶ “Not everyone will listen, but there is more of us out here than you think that are listening”
- ▶ Many producers that were very grateful for the NRCS and all that they have done to promote and help them on their journey
- ▶ Producers now have groups of other producers that they bounce idea off of

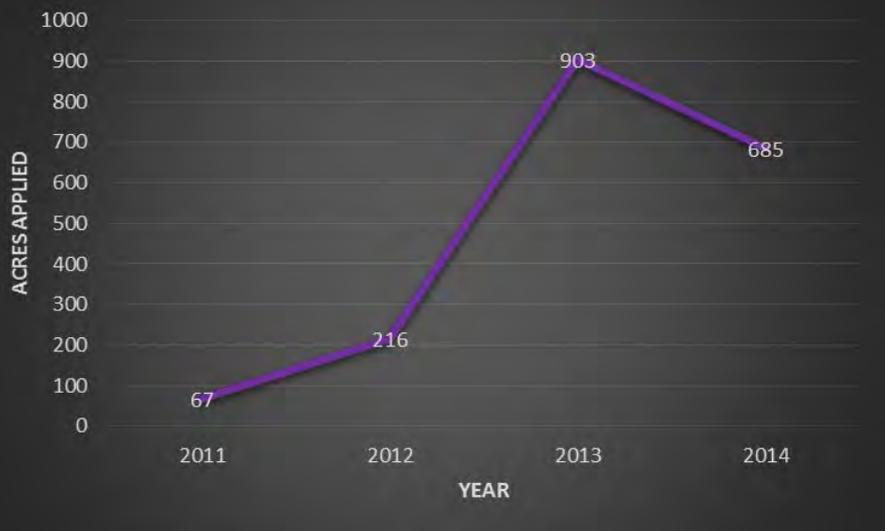
Data Collection and Programs

- ▶ IDEA
- ▶ EQIP
- ▶ CSTwP
- ▶ CTA
- ▶ 2010-2014
- ▶ ACRES APPLIED

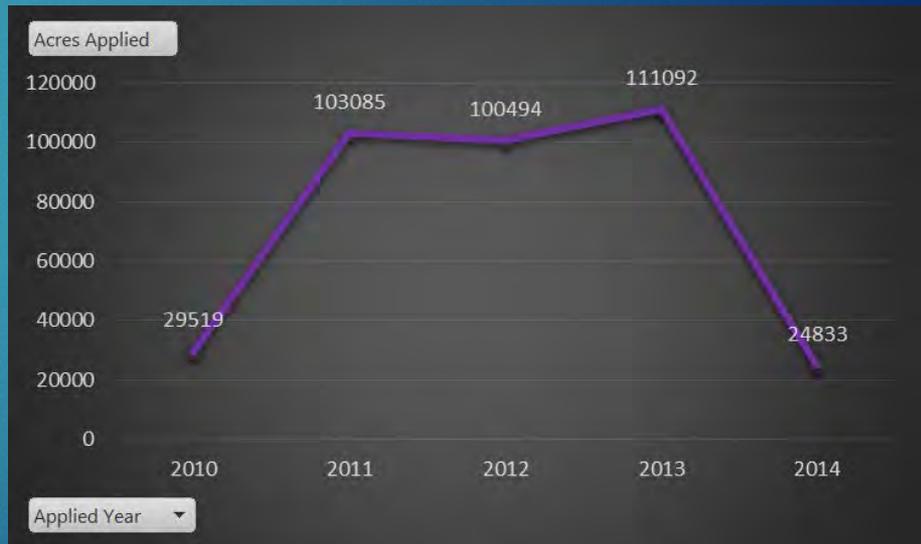
Cropland Soil Health Practices and Enhancements

- ▶ Conservation Cover
- ▶ Conservation Crop Rotation
- ▶ Cover Crops
- ▶ No-till
- ▶ Reduced tillage

Conservation Cover Applied Acres (327, SQL06, SQL09)

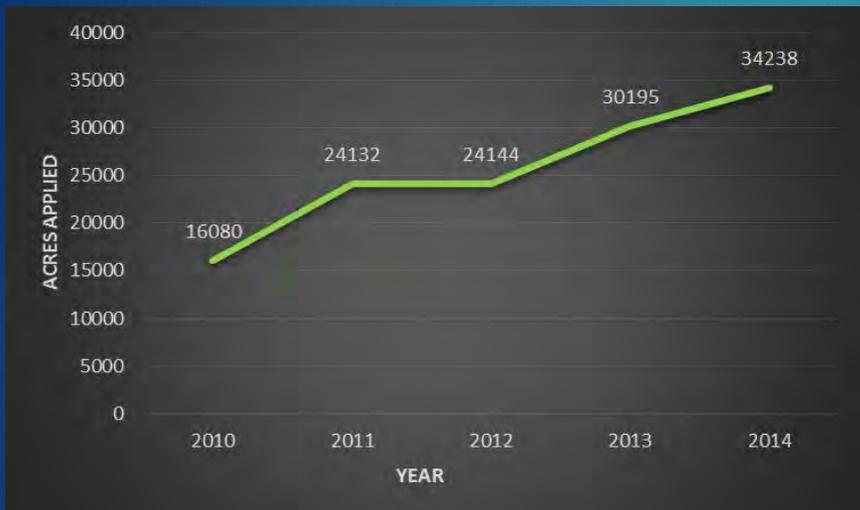


CSP & EQIP

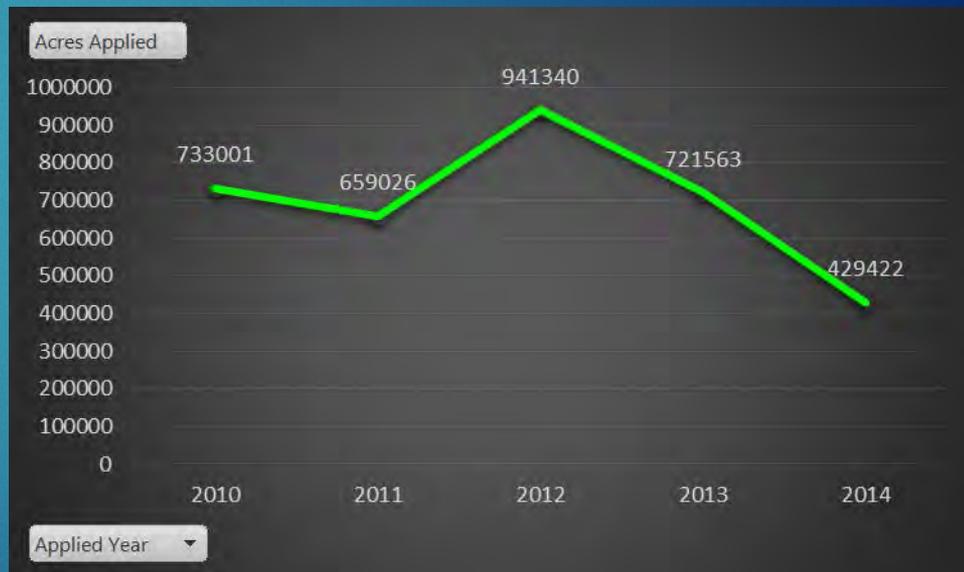


CTA-General

Conservation Crop Rotation Applied Acres (328)

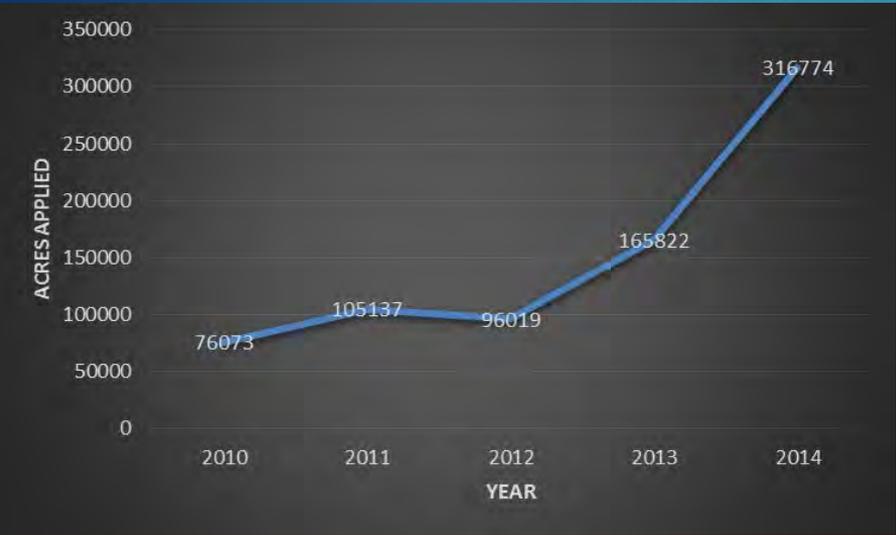


EQIP

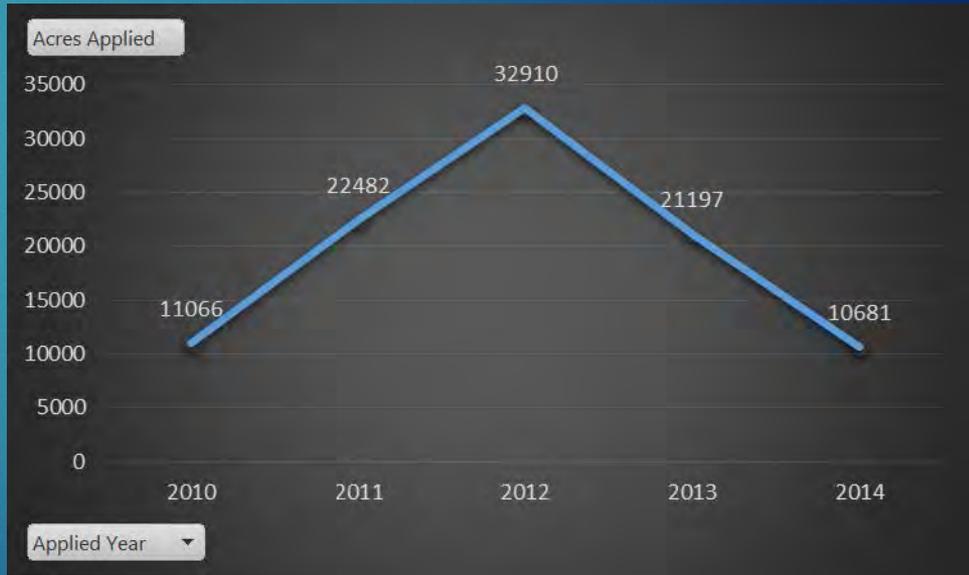


CTA-General

Cover Crops Applied Acres (340, CCR99, ENR12, PLT20, SQL02, SQL04, SQL05, SQL12, WQL10, WQL16)

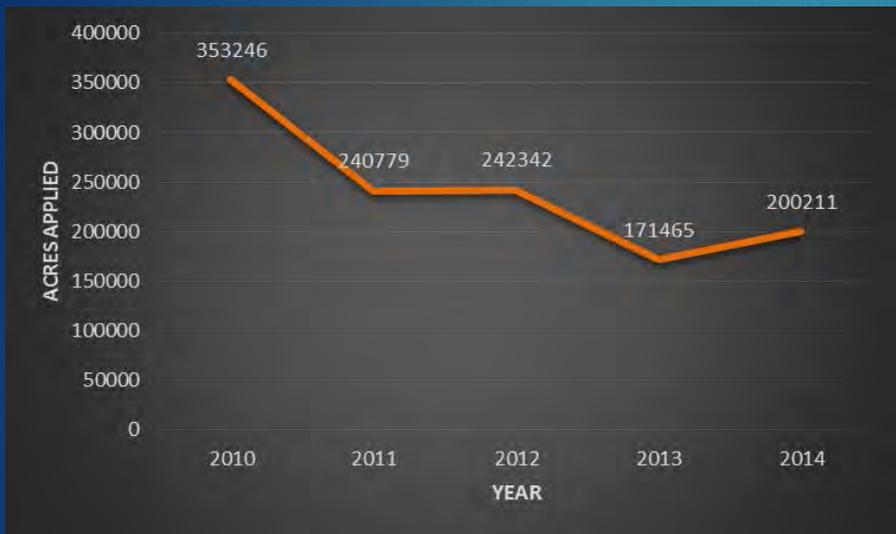


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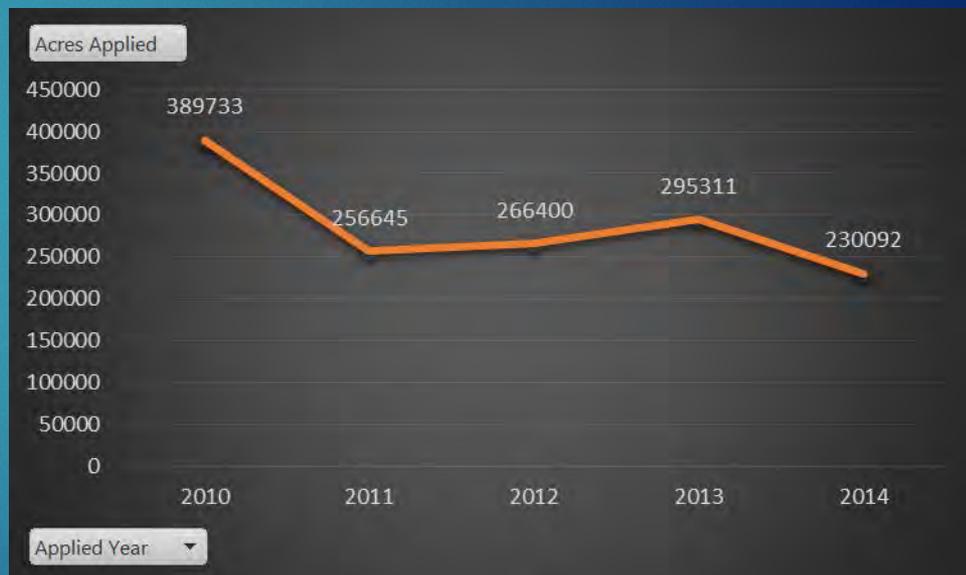


CTA-General

Residue Management, No-till (329, SOE01, SOE03, SOE04, SOE05)

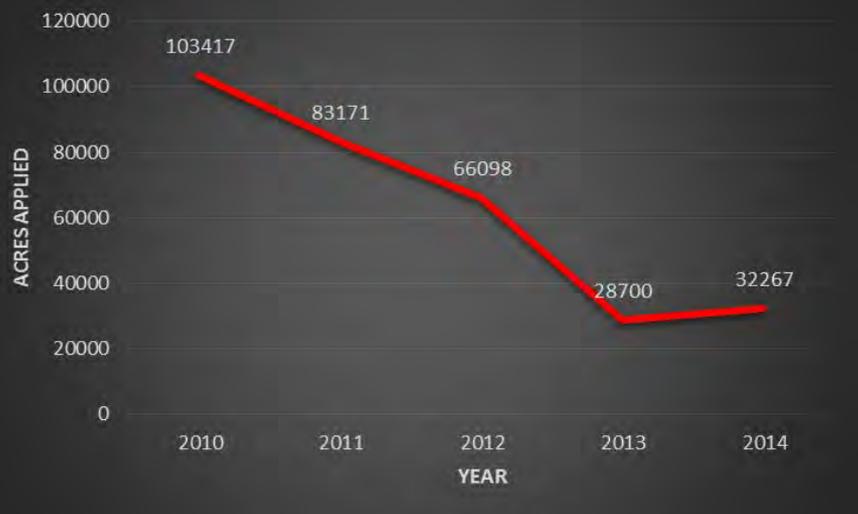


CSP & EQIP

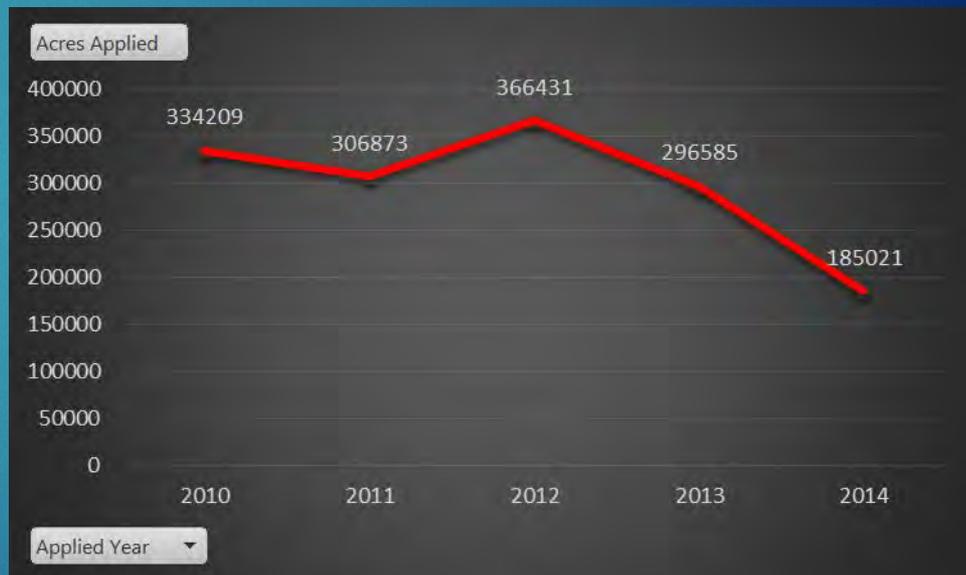


CTA-General

Residue Management, Reduced Till (344, 345)



EQIP

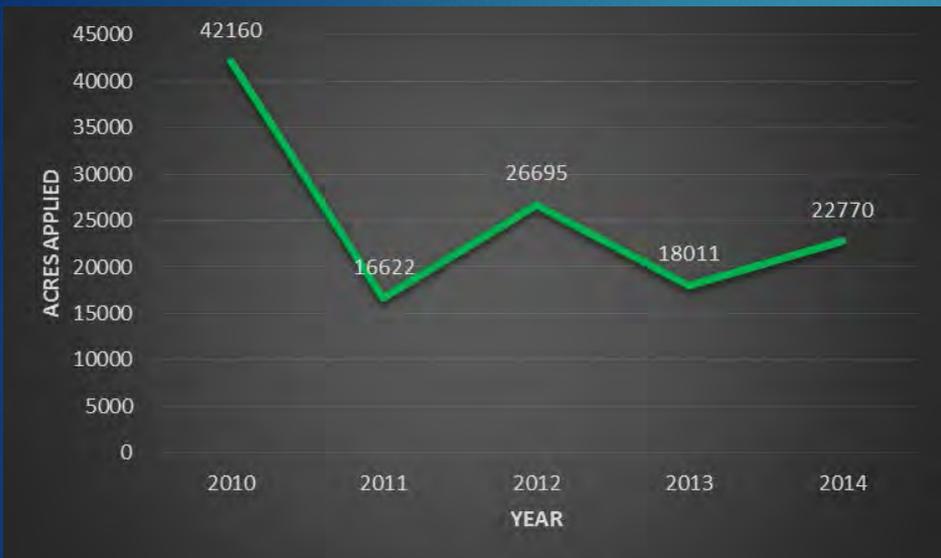


CTA-General

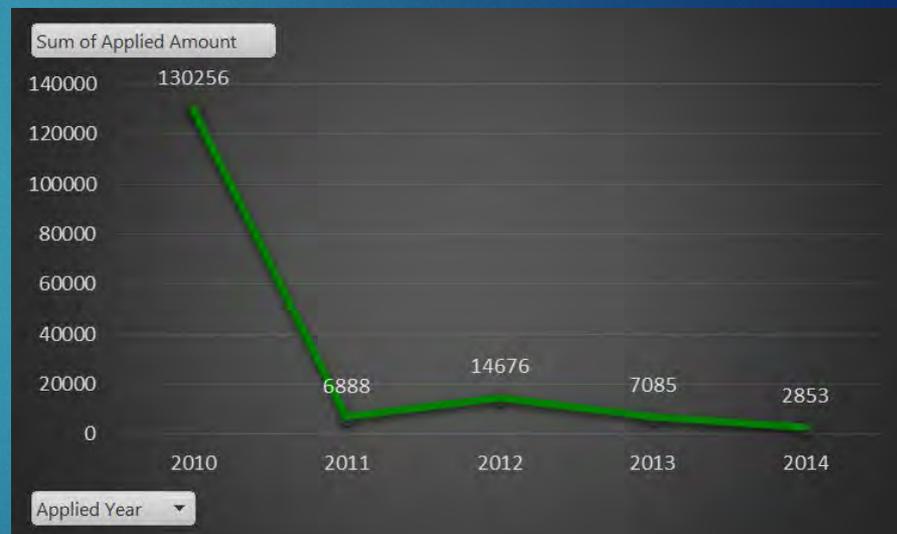
Pasture and Rangeland Soil Health Practices and Enhancements

- ▶ Range Planting
- ▶ Forage and Biomass Planting
- ▶ Prescribed Grazing

Range or Forage and Biomass Planting (512, 550, ANM03)

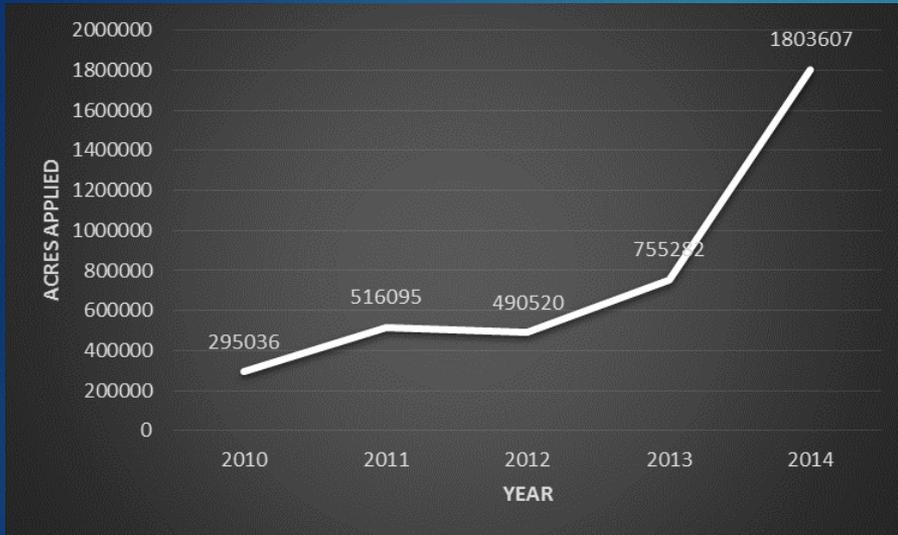


CSP & EQIP

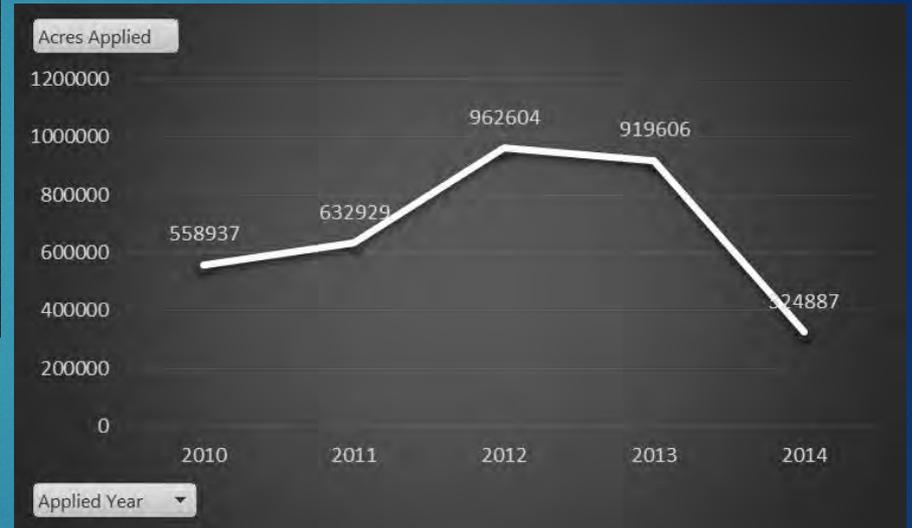


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Prescribed Grazing (528, PLT02)



EQIP



CTA-General

Soil Health – Just Dig It!

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Potential Tests and Measurements

- ▶ Soil Organic Matter
- ▶ Soil Health Nutrient Tool (Haney)
- ▶ Phospholipid Fatty Acid
- ▶ Cornell Soil Health Assessment
- ▶ Solvita- Basal Respiration
- ▶ Soil Quality Test Kit
- ▶ Bulk Density
- ▶ Observation



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- ▶ Develop a list of recommended actions to encourage the sustained use of practices that improve soil health.
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Develop recommended actions to encourage the sustained use of practices that improve soil health

- ▶ 1. Continue to provide outreach/education to producers in many different forms.
 - ▶ Perseverance and Tenacity
- ▶ 2. Commend field offices that are avidly promoting soil health now.
- ▶ 3. NRCS continue to provide EDUCATION to its employees
- ▶ 4. Make sure our conservation practices, enhancements, and cost list scenarios are in line with improving soil health

How soil health could be measured in a way that could show past and future trends, but in a way that does not impact the field office

- ▶ 1. Add the Solvita test to NRI data collection
- ▶ 2. Develop Soil Health Descriptions for groups of soils
 - ▶ Assist NRCS employees and producers in the field
- ▶ 3. Continue or start to have NRCS employees do infiltration tests and bulk density tests as they work with producers and have a central data base where the results would be compiled
 - ▶ Would assist with employee education at the same time they are collecting results

Gabe Brown

- ▶ “If you want to make small changes, change how you do things. If you want to make major changes, change how you SEE things!”
- ▶ Don Campbell

The greatest roadblock in solving a
problem is the human mind!



Gabe and Paul Brown: ND
Rancher

Experts Consulted

- ▶ Dr. Bianca Moebius-Clune
 - ▶ Director, Soil Health Division
- ▶ Norm Widman
 - ▶ National Agronomist
- ▶ Sid Brantly
 - ▶ National Rangeland Management Specialist
- ▶ Jay Fuhrer
 - ▶ Soil Health Specialist, ND
- ▶ Susan Samson-Liebig
 - ▶ Soil Quality Specialist, ND
- ▶ Lance Gunderson
 - ▶ Ward Labs