



United States Department of Agriculture
Natural Resources Conservation Service

NRCS AQAC Update AAQTF Meeting College Station, Texas

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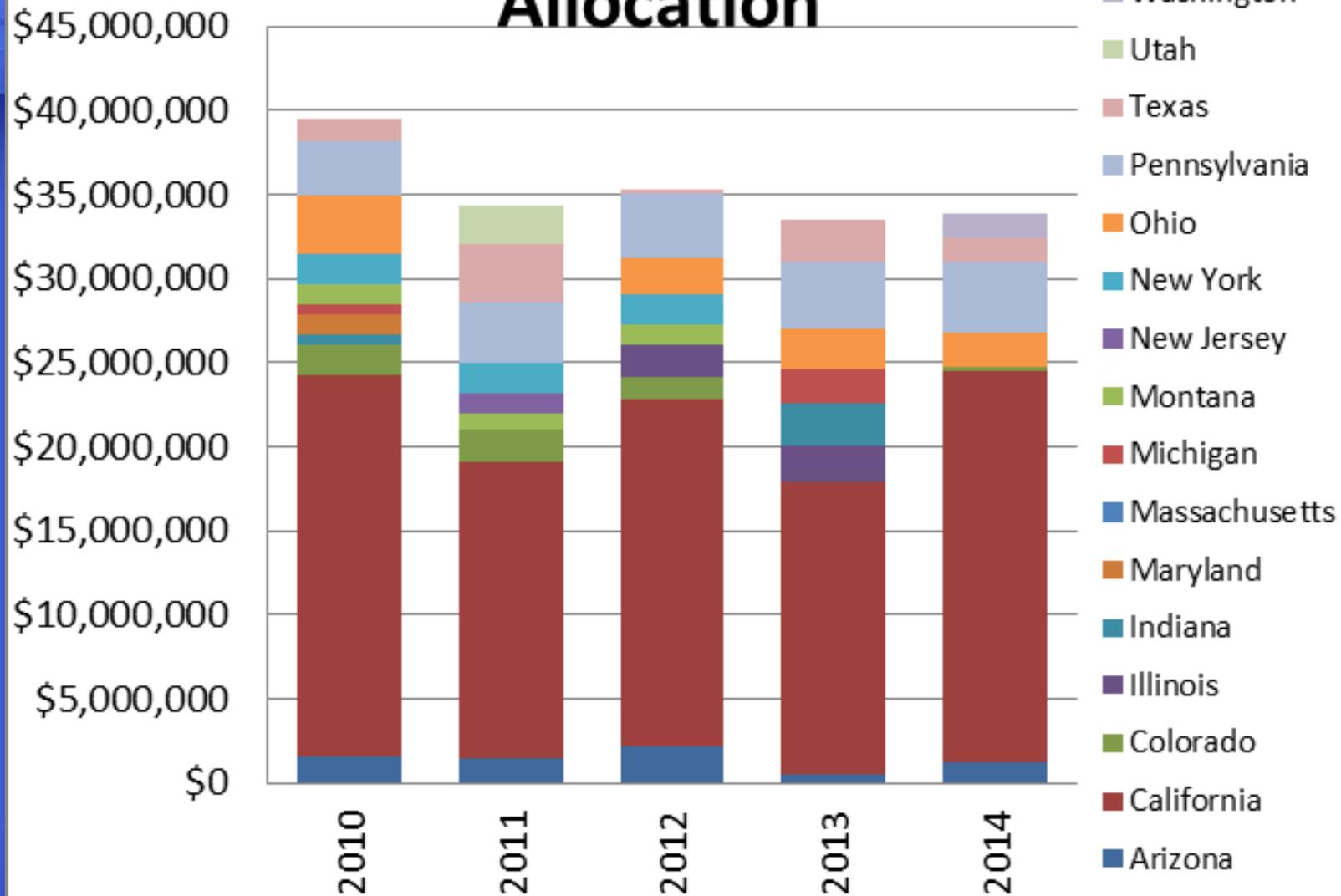
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Air Quality and Atmospheric Change Update

Air Quality and Atmospheric Change Update

- NAQI
 - Current implementation targeting agricultural emissions in EPA designated non-attainment areas for PM and O₃
 - Experience has demonstrated that there are more precise approaches to targeting FA to address agriculturally-related air emissions and concerns
 - Some states have moved into and out of the Initiative from year to year

National Air Quality Initiative Allocation



Air Quality and Atmospheric Change Update

- NAQI – Proposed Updates and Improvements
 - Three main categories providing more flexibility to improve air quality with NAQI funds
 - National Priority Areas – CA and AZ and non-attainment
 - State and Regional Priority Areas – known areas, not necessarily non-attainment
 - State and Local Priority Areas – competitive basis for state and local ag. air quality initiatives
 - Target funds to continue improving AQ
 - Reduce the variance and waiver workload

Air Quality and Atmospheric Change Update

[Overview](#) [Disclaimer](#) [Sponsors](#) [Resources](#) [Emissions](#) [User Manual](#)

National Air Quality Site Assessment Tool

Select a species to begin:

Swine

Broiler Chickens

Dairy

Laying Hens

Beef

Turkeys

Horse



Emissions

- Odor
- Particulates (dust)
- Hydrogen Sulfide
- Ammonia
- Methane
- Volatile Organic Compounds (VOCs)

[See a video about the tool](#) or [read the brochure](#)

Purpose: The National Air Quality Site Assessment Tool (NAQSAT) has been developed for the voluntary use of livestock producers and their advisors or consultants. It is intended to provide assistance to livestock and poultry producers in determining the areas in their operations where there are opportunities to make changes that result in reduced air emissions. Air emissions research from livestock production systems is increasing every year. NAQSAT is based on the most accurate, credible data currently available regarding mitigation strategies for air emissions of ammonia, methane, volatile organic compounds, hydrogen sulfide, particulates, and odor.

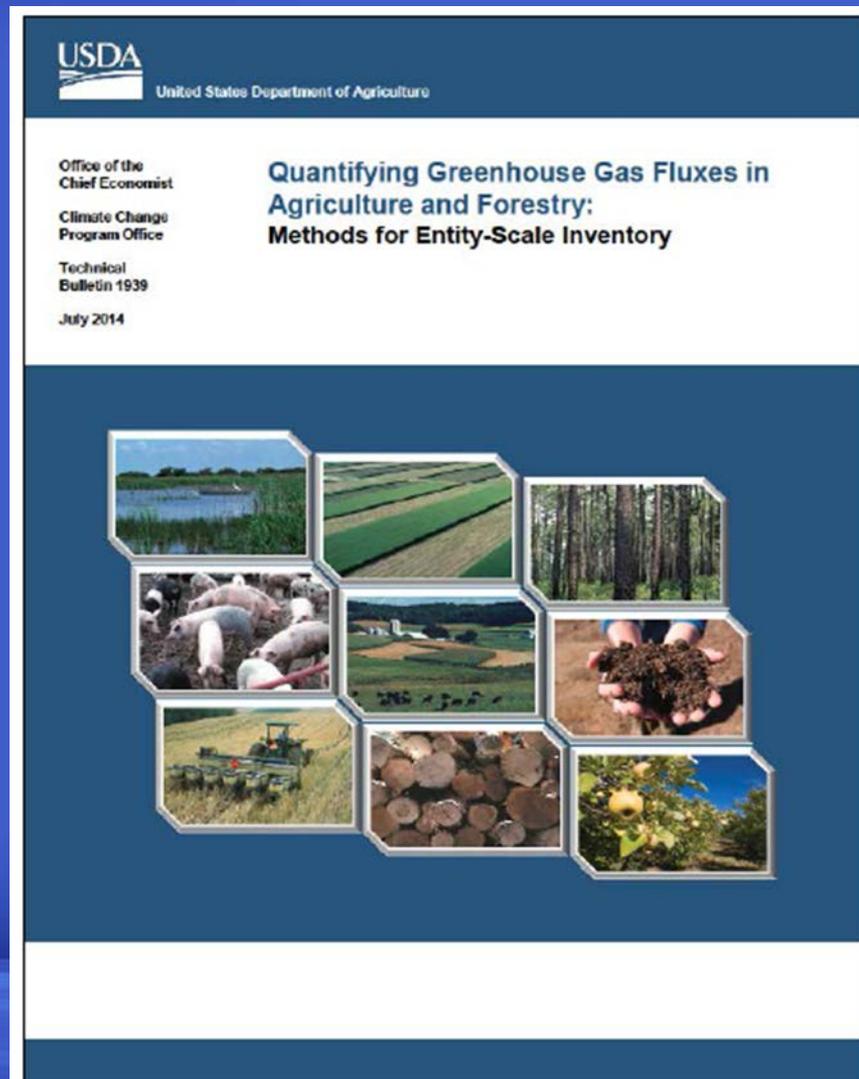
NAQSAT was designed to provide information and education, only. It is not intended to provide emissions data and/or regulatory guidance. All users receive a report of priority areas where improvements can be made, regardless of the amount of emissions produced by the facility. These priorities are not a reflection of risk, but rather a relative evaluation of current

Scores for each emission are generated upon online completion of NAQSAT. Scores reflect the degree to which an operation has incorporated all of the possible practices needed that would effectively minimize air emissions from the facility. Trade-offs may exist within a housing type that all categories of emissions cannot effectively be minimized. The tool considers the impact of diet, housing management, manure handling, management, transport, land application of manure, neighbor relations, and internal and nearby road management practices. Once areas where changes could be made are identified, resources to help implement changes are identified for the user. A user can run NAQSAT a second time with a proposed change included to determine the impact a change would have on emissions. Comparing results from multiple runs of the program may highlight unintended consequences where a mitigation measure to reduce one constituent may inadvertently increase one or

Air Quality and Atmospheric Change Update

As of August 13th

- More than 326,000 downloads
- Livestock Chapter downloaded more than any other chapter



COMET-Farm and Methods Report Integration (Underway)

The screenshot shows the COMET-Farm website interface. At the top, there are logos for COMET-FARM, USDA, NRCS, and Colorado State, along with the text "whole farm and ranch carbon and greenhouse gas accounting and reporting". Navigation tabs for "Home", "Tool", "News", and "Help" are visible. The main content area is partially obscured by a modal window.

What is COMET-FARM™?
COMET-FARM™ is a whole farm and ranch carbon and greenhouse gas accounting system. The tool guides you through describing your farm and ranch management practices including alternative future management scenarios. Once complete, a report is generated comparing the carbon changes and greenhouse gas emissions between your current management practices and future scenarios.

The Quick Energy Tool
Quick Energy is a stand-alone tool that allows you to calculate reductions in greenhouse gas emissions based on anticipated fuel savings. You can use Quick Energy by itself or in conjunction with your COMET-FARM user account.

Why should I use COMET-FARM?
COMET-FARM estimates the 'carbon footprint' for all or part of your farm/ranch operation and allows you to evaluate different options. [more...](#)

What information do I need?
You will need information on your field and livestock management practices. Find out more here: [more...](#)

How are my results calculated?
The system uses your information on management practices with information on climate and soil conditions to run a series of models. [more...](#)

Choose Activities
Choose the management activity you want to audit: management, live and/or energy.

Welcome to COMET-Farm™

Integration of new USDA GHG methods into Comet-Farm!

The newly released USDA entity-scale GHG inventory methods are being integrated into the COMET-Farm tool. An initial release of an updated COMET-Farm with new methods for several emission categories is scheduled for Oct. 2014.

Update of emission source categories!

Completed	Underway	Planned	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Livestock Emissions
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cropland Soils
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Agroforestry
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Energy
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Rice Methane
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Grazing Land Soils
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Biomass Burning
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Liming

USDA
United States Department of Agriculture

Office of the Chief Economist
Livestock and Poultry Programs
Programs Center
Washington, DC 20250
July 2014

Quantifying Greenhouse Gas Fluxes in Agriculture and Forestry: Methods for Entity-Scale Inventory

Click [show me](#) to view the Comet introductory video.

2011 GHG CIGs: Testing the Markets – Greenhouse Gas / Carbon Sequestration CIGs

- **Agricultural Soil Carbon in the Palouse Region**
- **Avoided Grassland Conversion Carbon Project** 
- **Bovine Innovative Greenhouse Gas Solution**
- **Bringing Greenhouse Gas Benefits to Market: Nutrient Management for Nitrous Oxide Reductions** 
- **Demonstrating GHG Emission Reductions in California and Mid-South Rice Production**
- **Development of Protocols and Accounting Methods for Carbon Sequestration on US Rangelands**
- **Estimating Nitrous Oxide Reductions from Nutrient Management in the Chesapeake Watershed**
- **Farm Smart Management System**
- **Reducing N₂O Losses from Cropping Systems for Environmental Credits with Fertilizer BMPs**

Delta Institute CI&G Project Flow

Phase 1 – Conservation plan and implement of 4Rs of Nitrogen Mgmt. (credits only available for corn rotations due to science availability)



N₂O Emissions Quantification and Credit
third-party verification
(EPRI and Michigan State developed American
Carbon Registry Quantification Methodology)



SALE

US
Power
Plants
Purchase
Credits

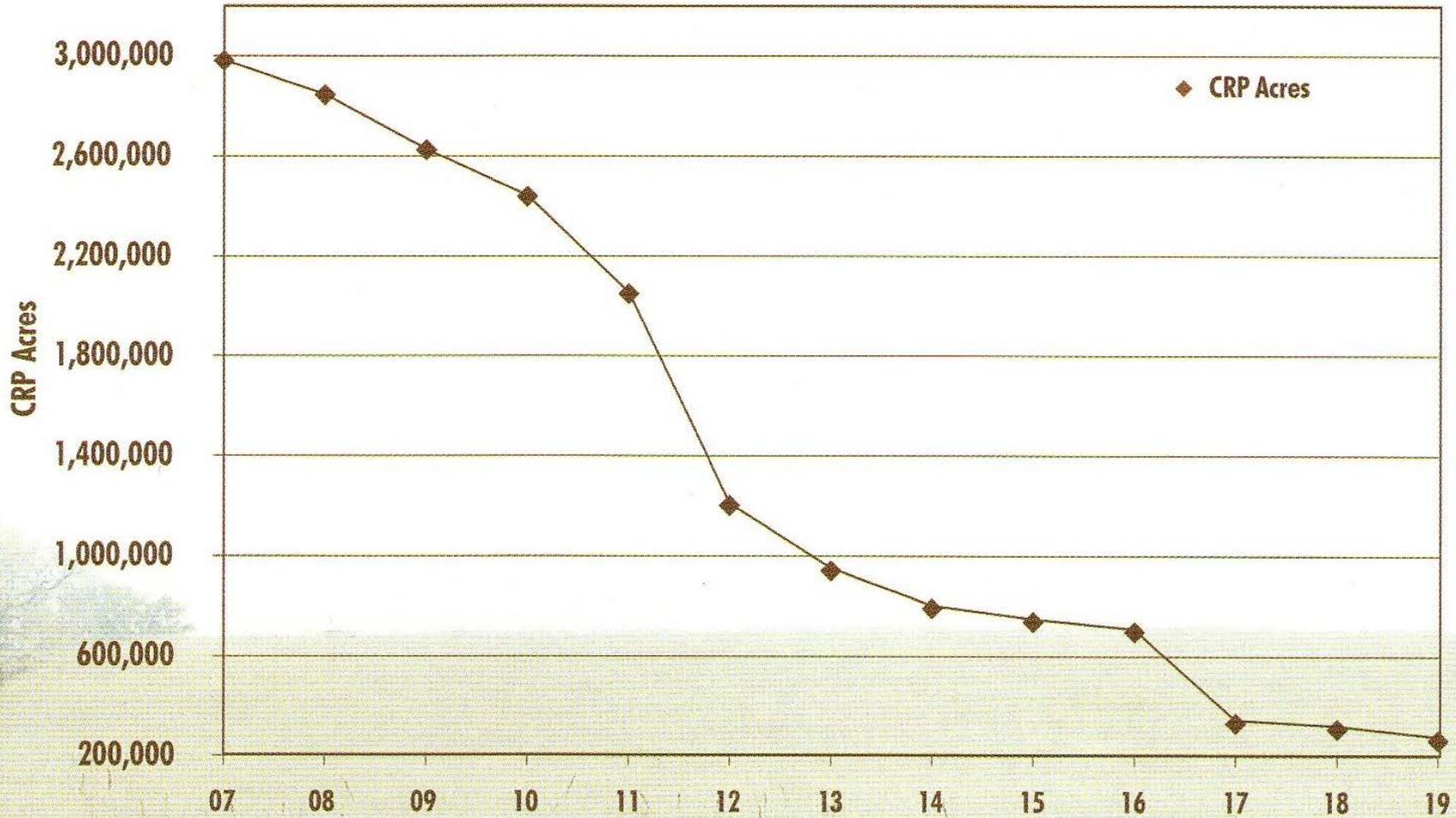
Consistent Corn Yield
PLUS
Other Environmental Co-benefits
(water, fertilizer costs, etc.)

Markets Return Check to
Producer for Avoided N₂O
Emissions

Conservation Reserve Program (CRP) is a voluntary program available to agricultural producers to help them use environmentally sensitive land for conservation benefits. Producers enrolled in CRP plant long-term, resource-conserving covers to improve the quality of water, control soil erosion, and develop wildlife habitat. In return, FSA provides participants with rental payments and cost-share assistance. Contract duration is between 10 and 15 years.

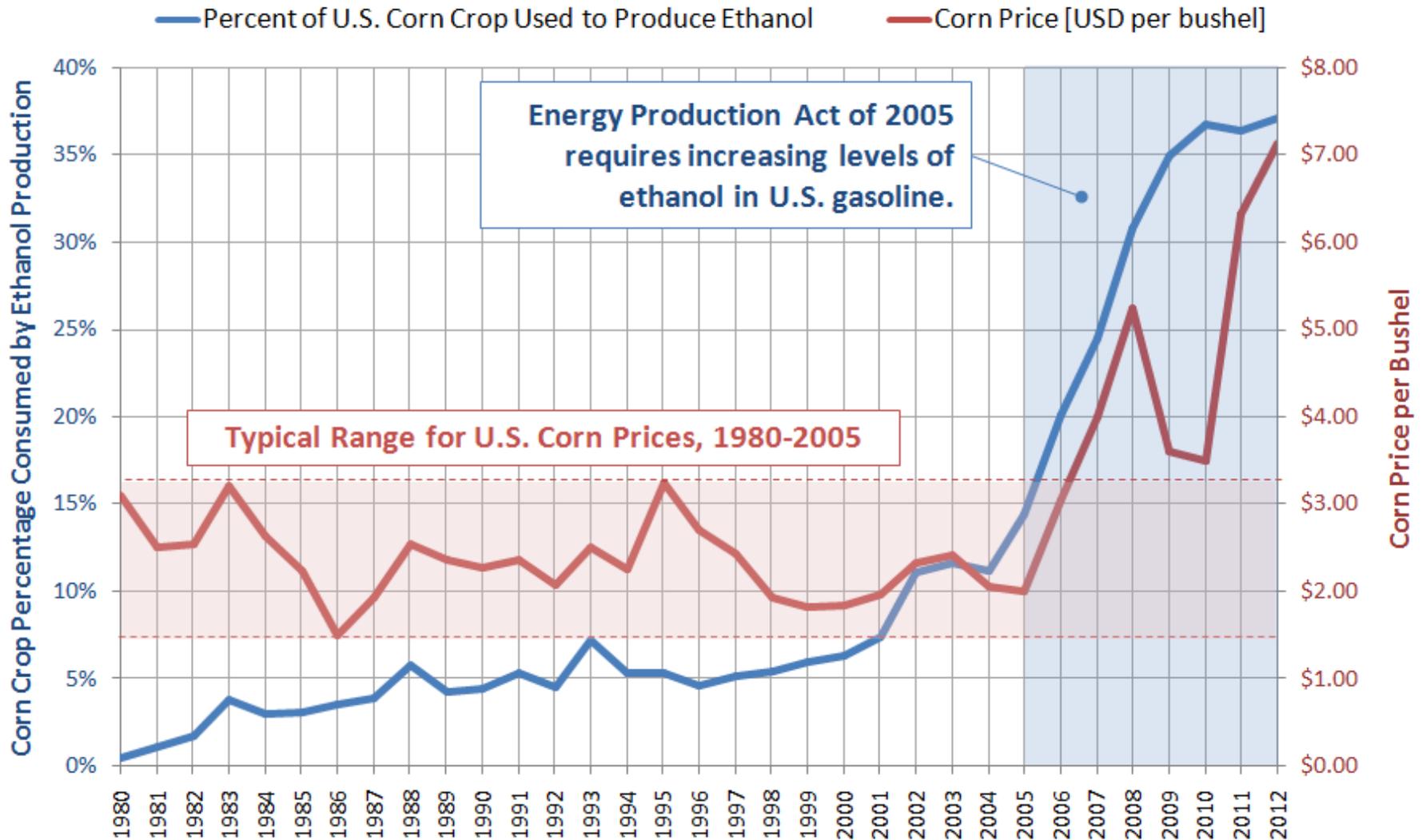


NORTH DAKOTA CRP PROJECTED LOSSES



What is Driving CRP Conversion?

Percentage of U.S. Corn Crop Consumed by Ethanol Production and Corn Price per Bushel, 1980-2012



Ducks Unlimited and The Climate Trust Project Flow



**NRCS
EQIP**



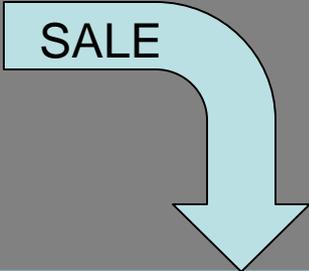
Preserving Grasslands
And Not Tilling – grazing and
haying permitted



Working Lands, Land
Conservation and Wildlife
Habitat

**PLUS
Soil Carbon Credits**

Aggregation



Major US
Automobile
Manufacturer

**\$\$\$ Return to Producer for Avoided
Grassland Conversion**



Air Quality and Atmospheric Change Update

- Success Stories... please keep them coming.

USDA NRCS
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Natural Resources Conservation Service

helping people help the land August 2014

Farewell Antiquated Tractors, Hello Cleaner Air



Farmer Larry Cruff strives to run his vineyard one step ahead of the curve. Be it converting his vines to drip irrigation in the 1980s or replacing his old, polluting tractors over the past six years, he likes to remain innovative.



Cruff is a third generation grape grower in Fresno County raising a mix of raisins and wine grapes on 550 acres with help from his children. He formed a relationship with the USDA's Natural Resources Conservation Service (NRCS) in the 1980s while converting his flood irrigation system to drip. Cruff was so happy with the change that he has regularly sought out other conservation practices to keep his operation sustainable and productive.

In 2008, Cruff read a local newspaper article highlighting a new NRCS program that took old, Tier 0 tractors, destroyed them, and then helped farmers finance much cleaner, new Tier 3 or 4 system equipment. (The tier system rates emissions generated by the tractors; Tier 0 put out the most emissions, Tier 4 tractors are the cleanest.) Cruff attended an informational meeting at his local Farm Bureau and later signed up for the program.

"There was a lot of discussion about stricter air quality rules coming down over the next few years," said Cruff. "I chose to start replacing my tractors early because I did not want to get caught needing to replace them all at once."

The NRCS program is known as the National Air Quality Initiative (NAQI). Agricultural producers apply for financial assistance to replace their old, diesel-powered engines with the latest Tier-level units certified by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (ARB). Priority is targeted to farms within counties, such as Fresno, that EPA has designated as in "nonattainment" for ozone and/or particulate matter.

SIP Sidebar Goes Here:

Explain in simple terms what SIP calls for, Ag's role in it, and how the NAQI has helped ag achieve its part.

We need someone with the facts to help us with this.

The emissions reduction achieved by NAQI in California to date, is equivalent to having removed more than 760,000 cars from California roads.

These counties experience air pollution levels that persistently exceed the National Ambient Air Quality Standards (NAAQS) established by the Clean Air Act.

"Through our collaborative efforts with the San Joaquin Valley Air Pollution Control District (SJVAPCD), the Air Resources Board, and the EPA, the voluntary emission reductions we have achieved are helping us meet our goals and objectives that are improving air quality," says **Ted Strauss**, air quality specialist for NRCS in California. "These efforts benefit public health and welfare without the need for the air quality authorities to develop new regulations."

EPA, which administers the Clean Air Act, established the NAAQS for

Since 2008, NRCS California has invested more than \$100 million in helping farmers replace more than 1,900 old, polluting tractors. By destroying the farmers' old engines, the environment gets the assurance that the old, polluting engines won't reappear in another town down the road. The emissions reduction achieved by NAQI in California to date, is equivalent to having removed more than 760,000 cars from California roads.

While agriculture shoulders just one part of the air quality improvements needed to achieve a successful SIP, the work done through NAQI has helped farmers in the San Joaquin Valley fulfill much (**XY percent?**) of the air quality improvements required from agriculture.



After old, inefficient tractors are turned in for destruction, through the NAQI program, their engines are drilled through and all components are crushed.

ARB has a similar program to NAQI, known as the Carl Moyer Program, which works in tandem with NRCS to replace as many Tier 0 tractors as available funding allows. When ARB's reductions are added to NRCS's the total reductions achieved are astounding.

"Leaders in the agriculture industry have done an outstanding job working with the air district and NRCS supporting

Discussion...



Planning today for a better tomorrow.



United States Department of Agriculture
Natural Resources Conservation Service

*Planning today...
for a better tomorrow.*



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