





Venture Goals

Venture Goals describe areas in which we anticipate the need for greatly expanded activity in the future. Those areas are:

- Clean Air;
- An Adequate Energy Supply; and
- Working Farm and Ranch Lands

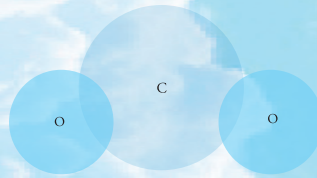
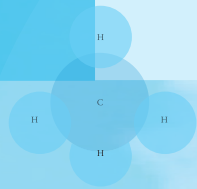
The impacts of agriculture on air quality are small-scale and local in nature, but may be significant in certain locales. In those areas, public pressure on producers to take action is increasing. Agriculture makes a small contribution to greenhouse gas emissions, but has the potential to offset emissions caused by other sectors.

The high cost of energy, the need to reduce emissions associated with fossil fuels, and the income opportunities for farmers and ranchers with an increasing renewable energy economy are focusing attention on energy conservation, the production of renewable fuels, and development of alternative energy sources.

Challenges to natural resources and agriculture resulting from development in what had been largely agricultural watersheds have been identified as a major concern by our customers. The conversion rate of cropland, grazing land, and forest land to developed uses is accelerating as a result of low-density development, increasing household formation, and larger lot sizes.

NRCS has had a relatively minor role in addressing these issues in the past, and we are not yet ready to set Agency-level performance measures for these issues. But the need for information and analytical tools to evaluate strategies to address the issues is growing. We are cooperating with many agencies and private sector entities to develop good data on conditions and measurement techniques, and anticipate that activities directed to these issues will increase significantly over the next few years.

Venture Goals: Clean **AIR**



Introduction

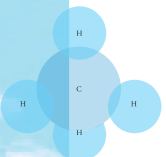
The quality of the air affects every component of the natural system: soil, water, plants, animals, and people. Because of atmospheric mixing, air emissions and their impacts may be in close proximity or thousands of miles apart.

Outcome: Agriculture makes a positive contribution to local air quality and the Nation's efforts to sequester carbon.

Objective: To be established. The objective will be measured by tons of carbon sequestered.

Baseline: To be determined. NRCS is currently evaluating several methods on how to best evaluate carbon sequestration.

2





Situation

Agriculture and forestry are a small, but sometimes locally important, source of emissions. They also can do much to benefit the air by mitigating emissions from other sources and by sequestering carbon.

Air Quality

Agricultural emissions that can affect air quality may be associated with wind erosion, prescribed burns, animal confinement, and chemical drift.

Over 120 counties nationwide are designated as non-attainment areas for one or more criteria air pollutants—meaning they have air pollutant concentrations that exceed the national standard established under the Clean Air Act. Where agriculture is identified as a source of air pollutants in non-attainment areas, State Implementation Plans may require agriculture to reduce emissions.

Odors from animal waste, volatile organic compounds, and sulfur and nitrogen emissions are not regulated nationally. As development presses into rural areas, however, public concern about odors and emissions from agricultural operations is increasing and State and

local jurisdictions are requiring agriculture to mitigate or control emissions.

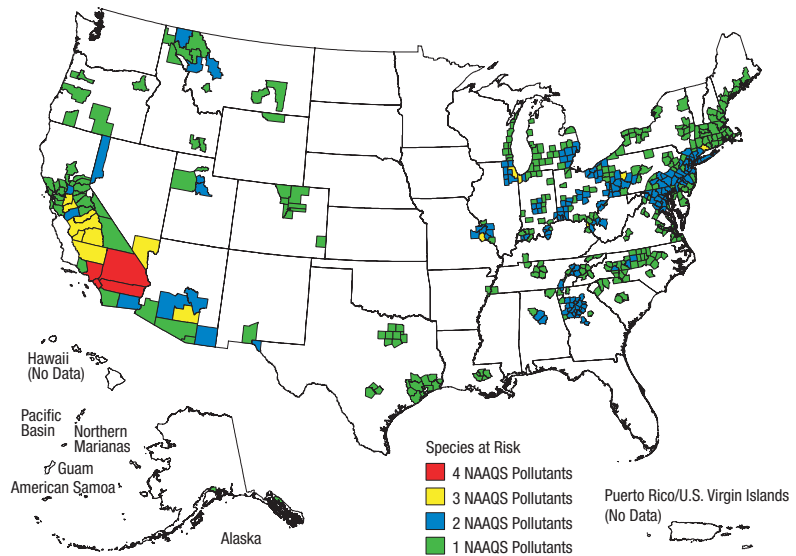
Greenhouse Gases

Agriculture accounts for about 8 percent of U.S. greenhouse gas (GHG) emissions, with most traced to nitrous oxide (N₂O) and methane (CH₄) emissions from soils management and rice and livestock production. Although a small source, agriculture is working to minimize emissions. Gains in fertilizer and fuel efficiency and improved nutrient

management reduce nitrous oxide emissions from agricultural activities.

Agriculture and forestry also are the Nation's carbon sinks, storing carbon in forests, woodlots and urban trees, agricultural soils, and grasslands. Although carbon stocks in agricultural soils have increased since 2000, overall sequestration has declined since the mid-1990s. Experts project substantial opportunity for long-term soil carbon gains. Carbon credit markets may offer a new economic incentive for increasing soil carbon.

Map 4. Counties Designated "Non-attainment" for Clean Air Act's National Ambient Air Quality Standards (NAAQS).



Source: U.S. Environmental Protection Agency, 2005

Key Tasks

As air quality and atmospheric change concerns increase, we anticipate an expanded conservation focus on these issues. In the period covered by this strategic plan, our current conservation efforts will be continued, as will our partnerships with Federal and State agencies, Tribes, and local governments and organizations. Strategic emphases will accelerate progress toward our goals.

Current Conservation Management

NRCS currently incorporates air quality considerations into conservation planning with producers. Conservation measures adopted include windbreaks and buffers, integrated pest management, prescribed burning, and comprehensive nutrient management to minimize emissions and their transport.

Many of the practices that conserve soil, water, or air quality also store carbon. NRCS and Colorado State University developed a carbon management tool (COMET-VR) that enables landowners to estimate carbon sequestered based on agricultural

management history. Results can be used to help producers and landowners make decisions about participating in carbon credit markets.

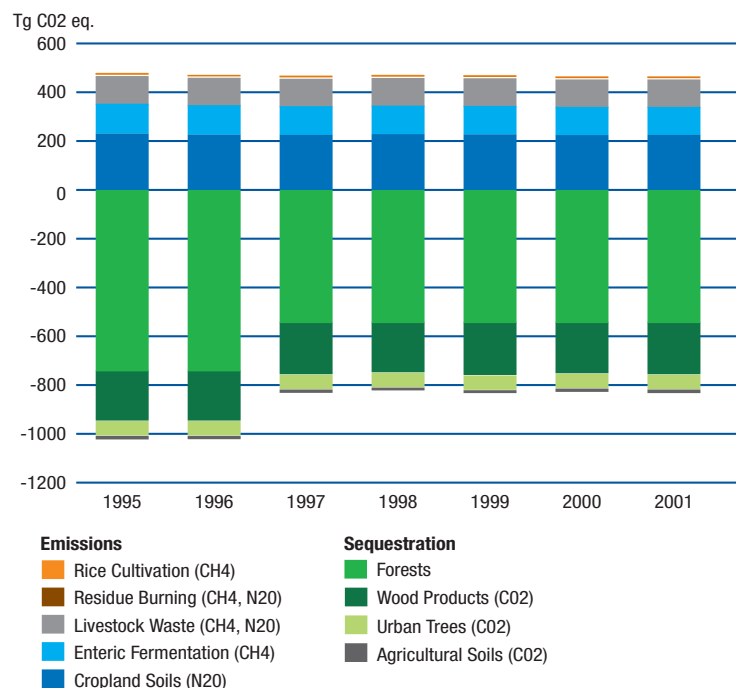
NRCS is revising, modifying, and adapting conservation standards and specifications to better address air issues. For example, a new technical standard for air management provides technical guidance for implementing conservation options to minimize emissions.

Strategic Emphases

To enhance assistance to producers in addressing air quality issues and seizing new carbon market opportunities, NRCS will:

1. Increase understanding of air quality and greenhouse gas emissions issues by:
 - Developing and implementing a training program to increase employee understanding of air quality issues and the effects of conservation practices on air quality; and

Figure 5. Agriculture and Forestry Emissions and Offsets, 1995-2001.



Source: USDA, Office of the Chief Economist, 2004



- Initiating an informational program to increase landowner and community awareness of air quality issues and opportunities for improvement, and facilitating discussion between agricultural and non-agricultural community segments.
2. Acquire and develop needed resource data and technology. Specific actions include:
- Identifying locations, extent, and trends of air quality problems related to agriculture;
 - Partnering with private and public sector organizations to develop new technology and practices to mitigate air quality problems related to agriculture;
 - Implementing tests of the Wind Erosion Prediction System (WEPS) to assist with wind-generated particulate matter estimates;
 - Expanding plant materials research to develop plant varieties that maximize carbon sequestration; and
 - Monitoring changes in climate through SNOWpack TElemetry (SNOTEL) and Soil Climate Analysis Network (SCAN) to inform producers and help them mitigate for changing environmental conditions.
3. Accelerate adoption of practices to address air quality and GHG emissions by:
- Working with Tribes and State and local entities to develop regional plans to address agricultural contributions to air quality problems;
 - Ensuring that air quality and GHG emissions are emphasized in conservation planning;
 - Providing incentives for the demonstration of new technologies that benefit air quality; and
 - Encouraging development of markets for emissions reductions and environmental credit trading to benefit air resources and agriculture by:
 - Collaborating in research to quantify carbon sequestration and emission reduction benefits of conservation practices; and
 - Facilitating voluntary reporting of GHG emission reduction and carbon sequestration.



Cooperative Action for Air Quality

The NRCS chairs the Agricultural Air Quality Task Force, established in 1996. The Task Force—made up of national leaders from farming, industry, health, and science—provides advice to the Secretary of Agriculture on agricultural air quality issues, data quality, and interagency air quality research efforts.

The Task Force has examined the role of agriculture in greenhouse gas emissions and climate change; volatile organic compounds, small particulates, and odors associated with livestock waste; and odor and visibility issues associated with livestock production. Task Force committees recently identified a number of atmospheric research issues and priorities, ranging from better understanding of agriculture's emissions and modeling of atmospheric processes to quantifying mitigation benefits and developing market-based opportunities.



Field windbreaks protect against wind erosion.