



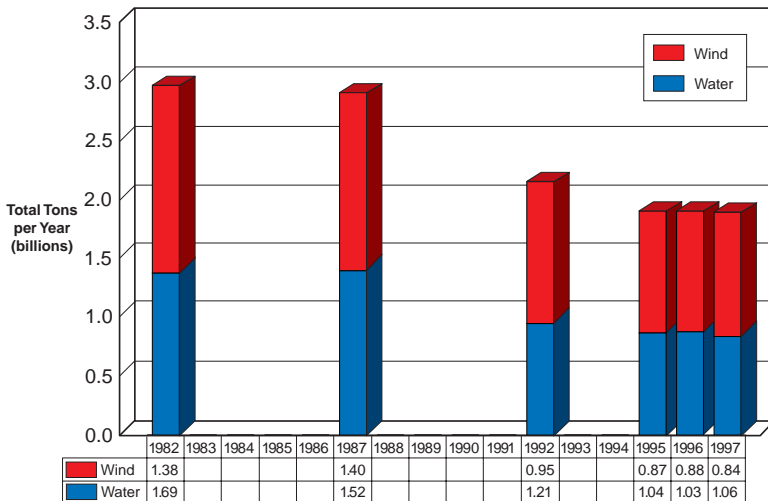
## Why is soil important?

Healthy productive soil is the foundation of a stable, productive economy and the many environmental amenities all Americans enjoy — clean air and water, enhanced fish and wildlife habitat, diverse plant communities, and visually pleasing rural landscapes. Governments cannot buy enough land to provide these benefits exclusively through national and state parks, public forests, and similar areas. Instead, all citizens must continue to rely on these benefits resulting in large part from the land use and management decisions made by the several million owners of our private land — the 70 percent of our nation’s land area that we might call our “working land.”

## After 10 years of improvement, soil conservation progress slows

Erosion — by wind and water — remains the most serious threat to the health of our soil. About 1.9 billion tons of topsoil were lost to erosion in 1997, down from 3.1 billion tons in 1982. The reason: More extensive use of such conservation practices as conservation tillage and the retirement of highly erodible cropland in the Conservation Reserve Program.

Total Erosion on Cropland and Conservation Reserve Program Acreage by Years



Total erosion has been significantly reduced 39% from pre-1985 Farm Bill conditions, but, it has leveled off since 1995.

Source: 1997 National Resources Inventory supplemented with data from Special Studies.

Since 1995, however, there has been no reduction in soil erosion on cropland. Why? Largely because the growth in the use of conservation tillage has slowed. In 1989, conservation tillage was practiced on 26 percent of all cropland; that increased to 37 percent in 1998. A 2.3 percent average rate of growth in the use of conservation tillage between 1989 and 1993 dropped to a 0.6 percent average annual rate of growth between 1993 and 1997. In 1998, there was no growth in the adoption of conservation tillage.

It is also worth mentioning that none of these erosion estimates account for gully erosion, a particularly damaging form of erosion that is closely linked to water pollution. There is some indication that accounting for gully erosion could double current estimates of soil loss in some areas of the country.

## There are other threats to the soil

Urban sprawl is a growing threat to the health of our land and its productive soil resources. Between 1992 and 1997, about 16 million acres of land were converted to development land. The average annual rate of conversion during this period — 3.2 million acres — was more than double the average annual rate of conversion between 1982 and 1987 (1.3 million acres) and 1987 and 1992 (1.5 million acres).

Salinization also threatens cropland productivity and the land’s long-term health. Between 55 million and 60 million acres are affected by this build-up of salts in the soil, caused mainly by irrigation of poorly drained soil.

## How much cropland do we have?

In 1997, there were 375 million acres of cropland. About 103.5 million of those acres were considered highly erodible. These fragile acres generally are steeper and less fertile than non-highly erodible cropland. Oftentimes, the highly erodible acres require more fertilizer and other crop inputs to maintain productivity.

## How serious is water erosion?

While the rate of water erosion on cropland dropped from 7.3 tons per acre per year in 1982 to 5.2 tons per acre per year in 1997, the largest share of that reduction occurred prior to 1995. Between 1995 and 1997, there was no reduction in soil erosion by water, according to a special study on the state of our nation's land.

About 64.2 million acres of cropland remain vulnerable to water erosion rates above the soil loss tolerance level, which is the maximum rate of soil erosion that can occur and still permit profitable crop production to continue indefinitely.

Soil erosion on pasture declined less between 1982 and 1997. Erosion on pasture fell 17 percent over this period, from 1.2 tons per acre per year to 1 ton per acre per year.

## How serious is wind erosion?

Wind erosion claims less topsoil than water erosion, but it remains a threat to agricultural productivity in some regions, particularly in the Great Plains. During the period from 1982 to 1997, wind erosion declined 33 percent, from an average 3.3 tons per acre per year to an average of 2.2 tons per acre per year. About 48 million acres remain subject to wind erosion rates above the soil loss tolerance level. Between 1995 and 1997, there was no significant reduction in soil erosion by wind on cropland.

## So, is our soil getting healthier?



The decade between 1985 and 1995 saw remarkable improvements in soil conservation by America's agricultural producers. Their adoption of effective conservation practices cut soil erosion by nearly one-third. Those practices include conservation tillage, terraces, and contour farming. Today,

nearly 100 million acres are farmed using conservation tillage. More than two million acres of conservation buffers have been installed by landowners in recent years, and about 30 million acres of fragile cropland are now enrolled in the Conservation Reserve Program and seeded to grass or planted to trees for periods of 10 to 15 years.

The combined indicators of soil erosion rates, adoption of conservation practices, and agricultural productivity suggest soil health was improving until 1995. Since then, progress in improving soil health has been slowed.

Today, about 112 million acres of cropland — 30 percent of total cropland — are eroding at excessive rates, and other problems, such as gully erosion, urban sprawl, and salinization, continue to threaten the health of our soil.

## Where do we get information about soil and other natural resources?

Every five years since 1977, the U.S. Department of Agriculture's Natural Resources Conservation Service has conducted the National Resources Inventory (NRI) in cooperation with Iowa State University. This comprehensive survey uses about 800,000 sample points and nearly 200 data elements to assess the status and condition of natural resources, primarily on private land in the United States. Each NRI provides a snapshot in time of how land is used and of the nationwide condition of soil and water resources. Additional NRI data is now collected annually on specific natural resource questions using fewer sample points.

## Sources:

Benson, Jim. 1999. Soil and Water Conservation Society. The State of the Land. Conservation Voices, April-May; 1982 and 1997 Natural Resource Inventories, NRCS, USDA.