

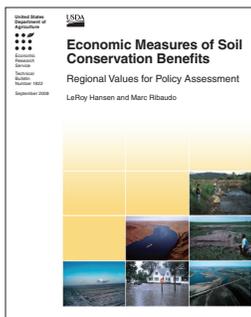


ERS *Report Summary*

Economic Research Service

September 2008

U.S. Department of Agriculture



This is a summary
of an ERS report.

Find the full report at
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Economic Measures of Soil Conservation Benefits Regional Values for Policy Assessment

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Annual conservation program expenditures have doubled to more than \$5 billion per year over the last decade. A major focus of these programs is on reducing soil erosion. This report describes the per-ton values of 14 types of soil conservation benefits. The values are derived from models that capture the cause-and-effect relationships between agricultural erosion and environmental benefits. Values and methodology are described so that analysts can apply the data to calculate regional and national benefits of specific soil conservation projects. Analysts can also use the per-ton benefit estimates to determine where a 1-ton reduction in soil erosion might be most beneficial.

What Is the Issue?

Conservation programs best serve the public when their funding, design, and implementation maximize benefits relative to costs. Unlike the cost of soil conservation efforts, environmental benefits of decreasing soil erosion are not easy to measure. Information on the values of soil conservation benefits can aid in designing more cost-effective programs and evaluating accomplishments of programs, policies, and practices.

What Does the Report Do?

Past research has generated per-ton soil conservation benefit estimates for 14 types of environmental benefits that are suitable for use in national analyses. The benefit types can be placed in three general categories:

- Twelve benefit types reflect soil conservation impacts on water quality and the subsequent impacts on industries, municipalities, and households.
- One benefit type captures the effect of wind erosion reductions on household cleaning costs.
- One benefit type has values of soil productivity preserved through reductions in wind and water erosion.

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The report describes the development of each estimate, and provides some insight into regional variations in soil conservation benefits. The values can be viewed as prices that people, businesses, and government agencies would be willing to pay for a 1-ton reduction in soil erosion. For example, the reduction in municipal water-treatment costs due to a 1-ton reduction in erosion represents municipalities' willingness to pay for that much reduced erosion.

The per-ton benefit values are available on the ERS web site (www.ers.usda.gov) in two databases. One provides per-ton benefits of soil erosion reduction for the 3,074 counties within the 48 contiguous States. The other provides per-ton benefits for the 2,111 8-digit Hydrologic Unit Code (HUC) watersheds within the contiguous States. While the benefit categories in these data encompass many of the benefits of soil conservation, the categories do not measure every benefit. For example, some people may value knowing that water quality is improved—even though they do not use the water—or that endangered species have an improved habitat, but estimates of these benefits are not available. As a result, applications of the available data will provide lower-bound estimates of total soil conservation benefits.

How Was the Study Conducted?

The per-ton benefit estimates are derived from models developed since the 1980s by ERS. The estimates are believed to be the best available for national analyses of soil conservation benefits, and the ERS data are updated as improved models become available. Four of the models generate marginal dollar-per-ton benefit estimates; the others generate average per-ton estimates. Descriptions of the economic frameworks, data sources, and models supporting estimates within each of the 14 benefit categories were synthesized from USDA published reports and peer-reviewed journal articles. All of the reported values were adjusted for inflation by the Consumer Price Index, so that all values are in year 2000 dollars. The values can be directly applied to observed and potential changes in soil erosion. They can also be applied to nonagricultural changes in soil erosion, as long as the changes are appropriately calibrated. Although the data have county- and HUC-level values, the benefit values are credible only when reported at national and multi-State levels. The model descriptions provide insights on how the benefit values can best be applied and results interpreted. Values are reported by category, so users can choose those they feel are appropriate to their own applications.