

New Action for Soil Protection

A solid understanding of the vital role of sustainable soils is an environmental imperative

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When the 111th Congress convenes, a priority for environmental policy leaders should be to ensure sustainable soils. The escalating crisis in soil destruction and nonpoint source pollution is tied to a decades-long reluctance to curb the environmental impacts of agriculture.

The worldwide crisis in soil destruction receives relatively little public attention. The United States is losing soil at 10 times the rate of soil replenishment, while China and India's losses are 30 to 40 times greater. The economic losses estimated are about \$37.6 billion in lost productivity in the United States and \$400 billion a year worldwide. Over the last 40 years, 30% of the world's arable land has become unproductive.¹

This erosion is a major component of the runoff that bars states from meeting the goals of the Clean Water Act (CWA).² Getting better environmental performance from the agriculture sector will finally allow the U.S. Environmental Protection Agency (EPA) to address seriously the total maximum daily load challenge of the Act.

I. Current Efforts Are Insufficient

Congress and the conservation community's approach to this quiet crisis over the last 25 years has been a system of subsidies paying farmers to take fragile, highly erodible soils out of production. This approach has worked to some degree, but is not sufficient. The landmark legislation detailing this strategy was the 1985 farm bill,³ which set the pattern for the succeeding farm bills. The current farm bill, the Food, Conservation, and Energy Act of 2008,⁴ allocates \$289 billion over the next five years. Title I offers \$41.6 billion to the commodity growers of crops such as cotton, wheat, soybeans, and corn in order to make these crops competitive in world markets. Title II receives a commitment of \$24.1 billion to cover conservation payments to farmers who cooperate with U.S. Department of Agriculture (USDA) programs aimed at protecting fragile

lands, and Title IV on food stamps and nutrition⁵ receives an authorization of \$188.9 billion, more than one-half of the farm bill commitment.⁶ The annual appropriation for each of the programs is made pursuant to the budget process of that year.

American farmers have made great progress in the last 20 years in curbing soil erosion. The Natural Resources Conservation Service's (NRCS) National Resources Inventory on soil loss reports:

The significant gains in erosion control that were made between 1982 and 1997 were sustained in the period between 1997 and 2001. Soil erosion on cropland declined from 3.1 billion tons per year in 1982 to 1.8 billion tons per year in 2001. Sheet and rill erosion dropped by almost 41 percent during this time period, while wind erosion dropped by 43 percent.⁷

Both government officials and private citizens attribute this to the economic incentives that empower the local conservation districts and the NRCS to work with farmers to improve the land and protect water quality.

Despite the great gains since 1985, the loss of soil and the pollution of waterways by agricultural effluents remain deeply disturbing and are unsustainable. Soil scientists have as much reason to be as pessimistic as climate change prophets if current trends continue.⁸ Indeed, the crisis in soils and the crisis in climate are linked. Healthy soils play a major role in carbon fixing, thus softening the climate change impacts of industrial development. Soil degradation leads to the transfer of massive amounts of carbon fixed in soil to the atmosphere, contributing to greenhouse warming. Good soil conservation programs

1. David Pimentel, *Soil Erosion: A Food and Environmental Threat*, 8 ENV'T, DEV. & SUSTAINABILITY 119 (2006).

2. 33 U.S.C. §§1251-1387, ELR Stat. FWPCA §§101-607.

3. Food Security Act of 1985, Pub. L. No. 99-198, 99 Stat. 1354.

4. Pub. L. No. 110-234, 122 Stat. 923.

5. These payments that go to poorer citizens are very popular with urban representatives and help ensure that each farm bill commands broad national support.

6. David Hosansky, *Farm Subsidies*, CONGRESSIONAL Q. WKLY., May 17, 2002, at 435, 448.

7. NRCS, *National Resources Inventory 2001*, <http://www.nrcs.usda.gov> (last visited Nov. 24, 2008).

8. COMMITTEE ON LONG RANGE SOIL AND WATER CONSERVATION BOARD ON AGRICULTURE NATURAL RESEARCH COUNCIL, SOIL AND WATER QUALITY: AN AGENDA FOR AGRICULTURE (National Academy Press 1993).

that sequester carbon are powerful tools to reduce the effects of climate change.⁹

The 2000 NRCS *Strategic Plan* reported that 232 million acres of cropland, 280 million acres of rangeland, and 222 million acres of private forestland are in need of conservation treatment.¹⁰ The plan reports that in 2003, 60% of cropland was managed under systems that maintained or improved soil quality and increased soil carbon, but notes that potential sediment delivery was 970 million tons from agricultural operations,¹¹ while in 1999, 500 million acres of nonfederal grazing land and non-industrial forest were considered to be in minimal or degrading vegetative condition.¹² The plan envisions a greatly accelerated pace of activity and increased funding for conservation.

However, the NRCS faces an enormous backlog in applications for assistance. Because farmers seeking to enroll in these programs face a \$3 billion backlog, four out of five of their applications are rejected annually.¹³ But even if funding were increased to a sum that would fund the hundreds of millions of acres that need conservation treatment, an unlikely event considering the unwillingness of Congress to pay for environmental services, the problem of the recalcitrant or negligent landowner remains. A leading commentator on agricultural law observes: "A weak point in the erosion control effort has been its dependence on voluntary action. Thus, those who are conservation-minded from the outset tend to participate, while those with erosion-prone land and disinclination toward conservation remain untouched. The latter group has the clear majority."¹⁴

II. New Tools Are Needed

The new Congress should begin by studying the performance gap between USDA aid programs and the lack of success in state soil programs. Environmental scholars should study the possible alternatives for future Congresses to consider. The growth of conservation funding in the farm bills demonstrates the national commitment to investing in sustainable soils. In time, Congress may demand that the states protect that investment with strengthened regulatory controls at the state and county level to curb soil degradation,¹⁵ perhaps by barring distribution of conservation funding to farmers in states that do not adequately enforce their erosion and sedimentation laws.

Congress could charge the USDA with a duty to consult with EPA on funding conservation grants, much as it charges the U.S. Army Corps of Engineers (the Corps) with coordinating with EPA on wetland permits.¹⁶ Congress could amend the Soil Conservation Act requiring states to establish substantive soil standards¹⁷ and enforce their statutes. Sanctions are no stranger to successful federal-state programs. The Clean Air Act (CAA)¹⁸ sets national standards for criteria pollutants and delegates implementation to the states. Section 176 of the CAA blocks payment of federal highway funds or other aid to any city or state in nonattainment areas.¹⁹ Congress needs to give soil protection efforts this kind of serious support.

EPA has had to step into a regulatory void on soil protection before. Congress gave EPA tools to promote soil quality with passage of the Superfund Law in 1980,²⁰ which set up a program of emergency response for spills and a remedial action program to restore contaminated soils. Much maligned during its first decades, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is now recognized as one of the most successful congressional efforts in environmental improvement, and EPA is credited with having emerged after a 25-year struggle as an effective force for dealing with contaminated soil.²¹ The EPA experience in dealing with contaminated soils on mining and industrial sites suggests an expanded role for it in future soils policy. An Executive Order created EPA, transferring agencies from other departments of the government, water from the U.S. Department of the Interior, pesticides from the USDA, and air from the U.S. Department of Health and Human Services. The future may bring some combination or fusing of the capabilities of the NRCS and EPA.

III. A Fundamental Shift in Understanding Is Also Required

U.S. enforcement failures in soil protection stem from the fact that soil is undervalued as a resource. The public does not recognize it as a living blend of organic materials and minerals on which agriculture and our lives depend. Soil quality is addressed in an after-the-fact manner, much as the first generation of air and water pollution laws focused on end-of-the-pipe pollution. As the air and water programs matured, they became less reactive and more focused on pollution prevention. Today, soil programs in the United States address erosion and contamination, but not nutrient loss and other fundamentals essential to sustainable soils. A new law

9. Food and Agriculture Organization of the United Nations, *Soil Carbon Sequestration*, <http://www.fao.org/ag/agl/agll/carbonsequestration> (last visited Nov. 24, 2008).

10. NRCS, *Strategic Plan 2000-2005*, at 12, 17 & 21 (2000).

11. NRCS, *Productive Lands Healthy Environment Strategic Plan 2005-2010*, at 23-29 (2006).

12. *Id.* at 37.

13. Environmental Defense Fund, *Mini-Loan Program Helps Farmers Enroll in Conservation Practices*, <http://www.environmentaldefense.org/article.cfm?continted=5156> (last visited Nov. 24, 2008).

14. John H. Davidson, *Sustainable Development and Agriculture in the United States*, 32 ELR 10543, 10556 (May 2002).

15. In *Farms, Their Environmental Harms, and Environmental Law*, 27 ECOLOGY L. Q. 263 (2000), J.B. Ruhl argues that the time has come to devise a two-tier system of regulation, one fashioned for agroindustry, noting that in 1997 about 157,000 large farms with annual agricultural sales averaging about \$900,000 accounted for 8% of all U.S. farms, but 72% of all farm sales. The other legal framework addressing smaller farms would rely on a mixture of incentives.

16. CWA §404(c) gives EPA the authority to veto a Corps permit to fill a wetland. See discussion in MARGARET STRAND, *WETLANDS DESKBOOK*, 2ND EDITION (ELI Press 1997).

17. Technically, the criteria to set national standards for soil quality have been in place for years. The Soil Conservation Service, precursor of the NRCS, established standards for soil loss and renewal (the T factor) that were incorporated in state soil conservation statutes. For a discussion of state soil conservation failures, see J. William Futrell, *The IUCN Sustainable Soil Project and Enforcement Failures*, 24 PACE ENVTL. L. REV. 99 (2007).

18. 42 U.S.C. §§7401-7671q, ELR STAT. CAA §§101-618.

19. *Id.* §7506.

20. *Id.* §§ 9601-9675, ELR STAT. CERCLA §§101-405.

21. See John Quarles & Michael W. Steinberg, *The Superfund Program at Its 25th Anniversary*, 36 ELR 10364 (May 2006).

inspired by an awareness of the ecological dimensions of soil policy would recognize the major role that healthy soils play in sustaining life.

Congress has shied away in the last 30 years from anything that smacked of land use planning, but new times call for new solutions to an old and increasingly serious problem.

The resistance will be fierce because such an effort runs against the enshrined view of soil as land, as a thing, a piece of property whose use by the landowner is not to be impeded by federal programs. The view that soil is more, much more, will be the beginning of a sane approach to land use law in the United States and will be entwined with the recognition of soil as an ecological resource, no less vital, and no less vulnerable than air and water.