

Erosion: Dustup over Muddy Waters

Contrary to some recent analyses that paint a dire portrait of soil loss from farmland, a new study of surveying data reaching back to the 1930s shows that erosion rates have declined markedly in one of the best-studied agricultural watersheds.

"For the last 20 years, we've been reading all of these scare stories of how great the erosion is and how it is greater than in the 1930s. There is no physical evidence for this," says Stanley W. Trimble of the University of California, Los Angeles.

Trimble draws these conclusions from his work in the Coon Creek Basin in southwestern Wisconsin. A fluvial geomorphologist, he measures the quantities of sediments building up in rivers and their floodplains as a result of soil loss from fields. "The rate of sedimentation has greatly slowed over the last 60 years so that it is now about 5 percent of what it was in the 1930s," he concludes.

In the Aug. 20 SCIENCE, Trimble compares results from surveys he did in the 1970s and the early 1990s. His work has followed up on investigations that began in 1938 along Coon Creek, an area of steep slopes and intensive agriculture. Because of tremendous erosion problems in the basin at the time, agriculture officials selected it as one of the first places in which to implement practices to reduce erosion, such as planting along slope contours.

The rate at which sediment is accumulating in Coon Creek and its tributaries decreased from 1.2 million tons per year during the 1920s and 1930s to 80,000 tons per year from 1975 through 1993, a time of abnormally wet weather, reports Trimble.

The latter figure contrasts with other recent reviews of U.S. soil erosion. Data from the U.S. Department of Agriculture's periodic National Resources Inventory,

for example, indicate that erosion in the Coon Creek region was 2 to 3 1/2 times as large during roughly the same period, Trimble estimates. In 1995, David Pimentel and his colleagues at Cornell University used USDA figures to estimate that soil erosion cost the United States \$44 billion each year. A 1998 textbook called U.S. erosion "as severe as it was in the 1930s."

These assessments, however, have relied on models and small-scale studies that don't directly measure how much erosion is happening, charges Trimble. "This has turned into a canard. Anything we do we have to base on good data."

Pimentel responds that Trimble's study looked specifically at sediments in a watershed, not at what was happening on fields. "It really is not a good, sound study on agricultural croplands or pasturelands," says Pimentel. "We really don't know how much has left the field," he adds.

While he agrees that erosion problems have decreased since the 1930s, "that doesn't negate the fact that we have erosion and an enormous amount is coming off the land," says Pimentel.

The Cornell economic estimate used calculations of soil erosion made before farmers came into compliance with the 1985 Food Security Act, which required them to develop soil-conservation plans. More recent figures suggest that erosion has since dropped by close to 40 percent, says Warren Lee, acting director of the USDA division that puts out the National Resources Inventory.

Using newer numbers, two USDA researchers report in the latest JOURNAL OF SUSTAINABLE AGRICULTURE that U.S. erosion in 1997 cost \$29.7 billion.

Timothy Beach, a geographer at Georgetown University in Washington, D.C., says the scientists equating modern erosion with that of the 1930s represent "a very minority view." Beach, who has studied soil loss in Minnesota not far from Coon Creek, says that the recent advances don't mean the problem is solved. He says, "There are still some areas that are problematic, that are not being farmed at a sustainable rate. And that's bothersome because we're draining down the fertile soil that is available." —R. Monastersky

And now there are two striped rabbits

A new species of rabbit, with bold stripes and a reddish rump, has turned up in the Annamite mountains on the border between Laos and Vietnam.

The creature looks much like the world's only other known striped rabbit, *Nesolagus netscheri* from Sumatra, report Alison K. Surridge of the University of East Anglia in England and her colleagues. Yet a genetic comparison of hundred-year-old museum specimens of the Sumatran animal with Annamite rabbits killed by hunters reveals separate taxonomic groups. They diverged some 8 million years ago, the researchers say in the Aug. 19 NATURE.

Scientists first suspected a second striped species when they spotted unusual carcasses in the food market of a Laotian village in 1995. Recently, an automatic camera in Vietnam's Pu Mat Nature Reserve snapped a live rabbit.

The camera also recorded many human feet, notes coauthor Diana J. Bell, also from East Anglia. She frets that increased hunting threatens the species. "It's not a happy story," she says.

Scientists once feared that the Sumatran rabbit had gone extinct. However, a motion-triggered camera found one very much alive and surprised in 1998.

E.C. Commission/SFNC



An automatic camera snapped the only photo of a live rabbit of the new species.

Bell is tantalized by the evolutionary questions the elusive animals raise. For example, the Sumatran rabbit carries an extremely unusual flea species. "We're waiting with bated breath to find a new rabbit with fleas," she says.

In the past decade, the Annamite area has yielded stunning finds—the deerlike giant muntjac, the bovine saola, the Vietnam warty pig—notes Joshua Ginsberg of the Asia Program of the Wildlife Conservation Society, based at the Bronx Zoo. He rejoices that "there are a few places left that are still truly wild." —S. Milius



The broken limb jutting from this tree was high enough in the 1920s to drive a loaded hay wagon beneath. Photo shows how much sediment had accumulated on the Coon Creek floodplain by 1973.