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A Long Term Study of Soil Erosion

Introduction:

Coon Creek in Northern Wisconsin drains about 360 square kilometers of rolling hills and bottomlands and empties into the Mississippi River near LaCrosse, Wisconsin. In the 1930s during the Depression and Dust Bowl, the Soil Conservation Service chose the Coon Creek basin for an intensive study of soil erosion that involved surveys throughout the basin, land use studies, and aerial photography.

In the 1970s and again in the 1990s, Stanley Trimble and others returned to the Coon Creek basin to measure how the land had changed in the intervening years. In many cases soils had moved from upland farms to become sediments in stream beds, stream channels had widened and moved, terraces had become swamps, swamps had grown up into forest. By repeating and extending the 1930s surveys they were able to estimate the amounts and rates of soil erosion that had occurred in the basin during the previous half century.

To extend their study further back in time, they dug down to markers of the first European settlements such as mill dams, house foundations, and old road beds; digging deeper, they located the original prairie soils dating to the 1850s when European farmers first settled the area.

Although farming started in the Coon Creek basin in the mid 19th century, soil erosion was not serious until around the turn of the century. After 1900 soil erosion increased dramatically, peaking in the Dust Bowl of the 1930s. Soil erosion decreased as farmers adapted soil conservation practices. Soil conservation techniques have continued to improve and recent rates of soil erosion in the basin are about 6 percent of what they were during the 1930s.

Trimble's paper has generated controversy within the academic community, which is a sign of an important contribution. Professor Trimble assured a warm reception when he concluded his paper with a mild challenge to the conventional wisdom: "The processes occurring on Coon Creek are indicative of many agriculturally disturbed basins in the U.S. and elsewhere."

How far these results can be applied to other watersheds is a subject of debate, but the extraordinary depth and breadth of this work should provide a benchmark by which other soil studies can be measured.

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ER: Professor Trimble, what is your training?

ST: As an undergraduate I had a chemistry major with minors in physics and math. I had intended to be an engineer, but the school I attended did not have an engineering program so I just finished in chemistry. In the ensuing years of military service and travel I realized that I was interested in landscapes, especially in the human element of the landscape. I'd been living in Europe so I came back to this country and did another bachelor's degree, this time in geography. Then I enrolled in graduate school at the University of Georgia, where I did a Ph.D. in essentially human geography, interested particularly in human settlement and population patterns. It was during graduate school that I realized that I was more interested in how humans had changed the physical landscape.

ER: Almost an archeology kind of approach?

ST: Well, more of a demographic approach you might say: looking at for