

Massive effort needed to save Iowa's soil

(EDITOR'S NOTE: This is part one of a four-part series.)

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(IDPA)—Take a good look at that rich topsoil which makes the land productive, Iowans.

More than half of it could be gone in less than 100 years.

That's the bleak forecast by conservation officials for the agricultural future of Iowa—the state which produces about 10 per cent of the nation's food supply—unless a massive conservation program is undertaken quickly.

"Conservation is more important today than it ever was," said William Brune, state conservationist for the United States Department of Agriculture's Soil Conservation Service (SCS). "We're still losing soil at an average rate of 13 tons an acre every year on unprotected sloping land (which covers most of Iowa's land).

"Thirteen tons an acre are equivalent to 230 bushels (of grain) an acre. That means on most of our sloping land, farmers are losing (about) two bushels of soil for every bushel of corn they produce," Brune said.

At this rate, some of the land may be completely eroded in 36 years, Brune added.

Using an example of an 8-inch layer of silt loam on a 2-to-5 per cent slope in Grundy County, he said: "If there's no protection at all, with up-and down-hill farming and fall plowing of continuous rowcrop, a farmer could lose that in 36 years."

The Grundy County land is not untypical of Iowa terrain. The 2-to-5 per cent slope is considered gently sloping land and much less subject to erosion than the steeper 6-to-8 per cent slopes in other sections of the state. And most of Iowa's farmland is covered by just a 6-8 inch layer of topsoil, which originally was 12-to-16 inches thick.

The topsoil has been deteriorating at an alarming rate since early settlers began tilling the state's soil more than a century ago. At that time the land consisted of undisturbed prairie sod or timber lands and the entire strip of the original 12-16 inches of topsoil was intact. But as the earth was tilled, water and wind erosion began taking its toll on the land. Unprotected by conservation methods, the soil washed or blew away into nearby rivers or streams.

"In less than 100 years of farming, we've lost half our original topsoil on unprotected sloping lands," Brune said. "That's an inch every 12-years—meaning we could lose the other half in two generations of farming."

"One-third of our land is protected from

erosion," he added. "But that leaves two-thirds of our land still susceptible to soil loss because of water and wind erosion."

Min Amemiya, extension agronomist at Iowa State University, said the biggest problem is water erosion. "Once that soil washes away, there is no way to recover it," Amemiya said.

While all types of terrain suffer from water erosion, unprotected sloping lands are especially vulnerable to its damaging effects.

The steepest slopes, those most susceptible to soil loss, are in northeastern Iowa—in Winneshiek, Allamakee, and Clayton counties—and in the west-central sector including portions of Woodbury, Monona and Harrison counties. Strongly sloping terrain is interspersed among gentle slopes and flatlands throughout parts of south-central Iowa while much of the north-central part of the state has mild slopes.

Any rainfall causes the topsoil to wash down the slopes and into the nearest waterway. Heavy rains, which Iowa often experience can cause an enormous soil loss.

"The high-intensity rains in the spring cause a great deal of erosion on the bare land, before the crops are up," said Gene Maahs of the Iowa Farm Bureau. "Every spring these rains fall on unprotected

land."

The excessive rains of May and June 1974 resulted in some portions of the state losing 50 tons to 100 tons of soil per acre while areas of Jasper County reported soil losses of 200 tons an acre. During that period, one-fifth of Iowa's cropland suffered severe soil erosion.

Besides stripping the land of its topsoil, water erosion also is the major cause of pollution in the state's rivers, streams and recreational waterways.

"Not only do we lose the soil," Amemiya said, "but the sediment is carried into our waterways. Sediments are the major pollutants to our water and most of these sediments come from agricultural run-offs."

"Lake after lake in Iowa has sediment filling it up," added Brune. "Sediment is in the upper reaches of the Coralville reservoir near Cedar Rapids, and the same thing is occurring in the upper reaches of Lake Panorama west of Des Moines, and in the water supply for the city of Creston."

"We either clean up the water before it becomes polluted or after it becomes polluted," said Amemiya, "and afterwards is much more expensive."

Unless the land is protected against water erosion, Iowa's taxpayers will continue to pick up the tab for correcting

its damaging side effects, Amemiya said.

"We had some serious water erosion in 1975 and some again this year (1976)," said Brune. More noticeable in 1976, however, was wind erosion," he said.

Brune estimated that about one-third of the 26 million acres of cropland was susceptible to wind erosion last spring and most of that soil was "Iowa's best crop-producing land," he added.

The flat terrain of north-central Iowa suffers great soil losses from wind erosion. While sloping lands are subject to severe water erosion, the slopes and hills provide a wind-breaking barrier which reduces soil loss by wind erosion. Level fields not surrounded by shelters of trees, hedges or fences are vulnerable to soil loss every time a wind comes up.

Much of the soil carried away by wind erosion ends up in roadside ditches, which the counties must clean every spring. Once again, Amemiya said Iowans' tax dollars are used to pay for the damage caused by erosion and the lack of soil conservation.

"The erosion problem has already been aggravated by the dry weather this year (fall 1976)," said Brune.

"If it stays dry, we'll probably have wind erosion," he noted. "If it rains, we get water erosion. Soil protection is the answer."

(Next: Some key conservation practices could save Iowa's topsoil.)