

Draining coteau limited nature's flood control



Podoll
 for cropland production. The wetlands in many cases meant survival.

Along come World War II, and plentiful moisture. Farmers were asked to produce more for the war effort, and they did. It was also realized that the acreage for production could be increased by draining wetlands. As long as farmers did not need wetlands for emergency livestock feed anymore, it made sense to gain acres for crop production and increase farm income, too. Fortunately or unfortunately, depending on your point of view, most coteau wetland soils are productive when farmable.

Wetland drainage in the Coteau Des Prairies (and in other regions) began in earnest after World War II as more fuel and machinery became available to do the earth moving. It is obvious that no thought was given to final destination of the drained water.

Wetland drainage was even promoted during this period. In addition, the U.S. Department of Agriculture provided free technical assistance and provided cost-share for every cubic yard of earth moved for ditch building. It was pretty hard for any landowner to pass up a deal like that.

In 1948 or 1949, the late Fred Staunton, Waubay National Wildlife Refuge manager, became aware of wetland drainage into the refuge, and loss of waterfowl production areas outside the refuge. He arranged a meeting in Webster and a look-see tour. Other participants were from the USDA Soil Conservation Service, Lincoln, Neb., and Webster; Day County Soil Conservation District; S.D. Game, Fish and Parks Department and at least one writer from a national outdoor sports magazine.

This meeting gained national attention regarding wetland drainage in the prairie pothole area of the Northern Plains. It resulted in one article in a national outdoor magazine entitled "Goodbye Potholes." However, meetings and articles did little to slow down wetland drainage. It proceeded unimpeded during the 1950s, but decreased somewhat during the 1960s, especially after Congress passed the Wetlands Preservation Act of 1962.

During drainage debates the major argument for wetland preservation was for their wildlife habitat value. No one mentioned their value for flood control.

Wetlands in the coteau are often quite deep and do not overflow even during high runoff events. When these are drained, not only the storage capacity is lost, but the drainage area for the receiving area is increased. Hydrologists lose sight of this fact. Even unaltered wetlands, with limited capacity and overflow, still have the ability to store some water.

One need only look at Enemy Swim Lake in Day County. It should be holding a few thousand acre feet of water in addition to what it is presently holding. On the lot I once owned on Enemy Swim, it was obvious that the high water mark was or is at a much higher elevation than the constructed outlet ditch. The ditch does not allow the lake to reach its original natural capacity.

Consequently, during dry years part of the lake becomes very shallow. This tinkering also allows a few thousand extra acre feet of water to enter Blue Dog Lake. The pothole drainage in the Enemy Swim watershed also makes it a pass-through body of water. One wonders who would purposely tamper with a beautiful natural lake like Enemy Swim.

This is the first of two parts on the effect of draining of the coteau

Draining water from wetlands has a high price



Podoll

Wetlands vary greatly. Some gain water almost entirely from runoff. Some are present only because of high water tables such as in sandy soils. Still others are wet because they get water from both runoff and the regional water table.

How much wetland drainage has been done in the prairie pothole region of northeast South Dakota? The amount varies greatly from one township to another, but most data indicates that about half of the original wetlands have been drained. Knowing about 20 percent of the area was once wetland means that there were about 125 acres of wetland per square mile; about 60 acres of wetland per square mile have been lost.

Anyone with a good working knowledge of wetlands and the water regimes of wetlands knows that these wetlands held about one and one-half acre feet of water per surface acre. Coteau topography has many deep wetlands so 1.5 acre feet capacity per surface acre is very conservative.

What is the drainage impact on lower elevations? Loss of 60 acres per square mile at 1.5 acre feet per surface acre dictates that about 90 acre feet of additional water could have been held today on higher elevations, even if every drained wetland were the kind that overflowed. This constitutes a minimum of 3,000 acre feet of storage lost per township. Depending on how many wetlands that were drained did not overflow, even in high runoff years, this figure in reality is probably considerably higher.

Three thousand acre feet of relocated (drained) water is a lot of water. It is equivalent to one foot of water covering 3,000 acres of land (more than 4.5 square miles). Multiply 3,000 times the nearly 40 coteau townships in Day and Marshall counties, and the additional runoff caused by wetland drainage becomes really impressive.

No one knows precisely the final destination of all this drained water. Does it end up in other wetlands? Does it end up in lakes and streams? How many wetlands now overflow that did not overflow naturally? How many wetlands have greatly increased in size that would have not done so before drainage activity?

We now know that all of these things happen. Lakes and wetlands enlarge or overflow and water courses become overburdened. Some flooded landowners may have a pretty good idea where the extra water is coming from, but might hesitate to say anything.

Through the years the usual tendency was to get rid of wetlands by draining them toward or into the road right-of-ways. It is understandable why so many roads are under water in the coteau.

Granted, the coteau would have had problems even with all the wetlands intact. But if so, there is a good chance the recent runoff events could have been more manageable and less costly. Most of today's leaders and public servants are not aware of past actions and do not know that part of their problems are man-caused.

Today's leaders should know that water drainage for private gain comes at a terribly high public cost. In the past six years this has been well illustrated from northern North Dakota to northwest Iowa. We should be learning.

Some will not like what I have said or attempt to refute the facts, however, but I believe this bit of history and insight should be brought to light. I have watched the wetlands' problem fester for 50 years, and always thought that it was not a matter of IF water problems would occur in the Coteau Des Prairies, but WHEN.

Knowing this, one still cannot help but have compassion for the people that are left to cope with the grief, problems and costs.

This is the last of two parts on the effects of draining the coteau wetlands. Erling "Punch" Podoll, rural Frederick is a retired wildlife biologist. He retired from the United States Department of Agriculture Soil Conservation Service. The views expressed in the Guest Editorial are