

Yet Another Cheesehead's Dilemma
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As I may have told some of you, I came to my agricultural engineering and environmental career as a vocational choice when Trish and I were in our twenties. We had moved to an original 1852 Norwegian homestead complete with a drafty old farm house in western Dane County.

The first spring season, we planted 5,000 asparagus roots 12 inches deep by hand. As we were hand cutting asparagus one windy day, the farmer who had cash-rented the field next to our holy asparagus patch was spraying his newly-planted hybrid corn with the herbicide of the day, atrazine. We got it in the face as did the asparagus. In the same season, the same farmer had moldboard plowed straight up the hill above our property. The spring rains came, the runoff from that field channelized and cut an obscene gully through the ever holier asparagus patch. That season, we learned two things: there can be serious consequences for the wrong agricultural behaviors and returns on the asparagus project indicated that someone needed a day job.

My day job was to work in the recently-adopted regulatory animal waste management program. I travelled all over the state telling citizens that farms caused water pollution and, furthermore, telling farmers what it was they were supposed to do about it. Well, let's just say there were some bumps on that road.

Throughout my career, all of us involved in agriculture and conservation in Wisconsin have been faced with the same basic cheesehead's dilemma: can we produce food and fiber without polluting water and losing soil? Aldo Leopold said it much more poetically than I can: "The oldest task in human history is to live on a piece of land without spoiling it." That's what I want to talk to you about today.

We didn't solve our farm related environmental problems during my watch, but I look back on the early years of my career as the good old days. We had an independent Department of Natural Resources, an independent Department of Agriculture, Trade and Consumer Protection, a unique and newly emerging county government-based system of land conservation that still had local control, a university extension system without a political agenda and a Natural Resource Conservation Service that could freely share work and successes with its other agency partners.

The first good old days in conservation, perhaps a much more important good old days, I believe, was the Coon Valley Project in 1933. While the work we did 60 years after Coon Valley was not perfect, it was based on a body of shared values and beliefs: that life is dependent on a 6 inch layer of top soil, and an abundance of clean water.

My good old days included work on multiple projects that involved all of the local, state and federal agencies I mentioned before. There are those who now say that it was a mistake to allow multiple agencies to jointly administer conservation and environmental programs because they will spend too much time and money fighting with each other instead of getting things done. That was not my experience at all. While we may have had some differences, I think we achieved much more together than we would have ever achieved alone.

About the middle of my career, we, that's the multiple agency collective "we," thrashed out a program called the Standards Oversight Council. It was a comprehensive program and agreement that all agencies would develop and use a uniform set of conservation standards and practices. Before that, landowners were confused and frustrated with the conflicting technical advice they were getting from different agencies. The Standards Oversight Council resolved much of these problems.

At the end of my career, we developed the NR 151 Agricultural Performance Standards, the Thirteen Commandments of agricultural water quality protection. If NR 151 works like we intend it to, once a producer comes into compliance, that producer will stay in compliance.

Of course, the problem with Good Old Days is that you don't know it when you are in them. And if you are like me, you may not figure it out until you get old. What I have also figured out, however, is I don't think that we are in the Good Old Days now. Some of the problems we saw in the 1980's remain with us and are possibly more serious. And there are some new issues on the horizon that are troubling.

So what has happened?

Since 1927, the Secretary of the DNR, originally called the Conservation Department, had been appointed by a nonpartisan citizen board. By law, appointees had to possess natural resource credentials. That ended in 1995. Governor Thompson proposed and successfully passed legislation that took away the authorities of the non-partisan citizen Boards to appoint the Secretaries of both the Department of Natural Resources and the Department of Agriculture,

Trade and Consumer Protection. While we had board-appointed Secretaries, we had the possibility in Wisconsin that environmental and conservation decisions would be made on the basis of sound science, the conditions of the resources and the aspirations of citizens that enjoy them. The last three DNR Secretaries appointed by Governor Doyle and Governor Walker are accomplished people but do not possess natural resource or conservation credentials. However, they have been avid supporters of the governors who appointed them. Important resource decisions are now made in accordance with the Governor's agenda, whatever that might be.

I am going to talk about three sensitive topics: Livestock Siting, frac sand mining, and Concentrated Animal Feeding Operations (CAFO's). The Livestock Siting Program limits the abilities of counties and local communities to regulate livestock operations. Even if a majority of citizens of a community believe that a 10,000 head dairy operation is incompatible with its community, they are out of luck. They will have 10,000 cows for neighbors. Of course, the frac sand issue is similar. If special interests get their way, communities will be breathing frac sand dust.

In the 1980's, Wisconsin had a half dozen Concentrated Animal Feeding Operations (CAFO's), all poultry. We now have about 250 CAFO's; 220 of them are dairies. Recent applications to DNR for dairy CAFO's are approaching cattle populations of 10,000 head each. That's a far cry for the 40 cow dairies of 25 years ago. In terms of a very common measure of water pollution potential, biochemical oxygen demand, organic pollution potential of a 10,000 head dairy is equal to 180,000 people. That's bigger than the city of Green Bay. Green Bay has a treatment plant. CAFO's do not. A 10,000 head dairy produces enough manure to fill up Lambeau Field where the Packers play all the way to the top of the cheap seats on the fifth story bleachers,... four times a year.

Wisconsin's dairy processors tell us that they do not have enough milk, in fact they say they are 15% short, to meet the growing demand for processed dairy products. And on top of that, milk prices are currently at near record highs; \$23/hundred weight the last time I looked and feed prices are coming down. I was not surprised to hear my friends at DNR tell me that 21 additional applications for CAFO's have been submitted and are pending approval.

I am going to digress a bit here and tell you the Parable of Smithfield Foods.

In 1936, a family built a small hog slaughtering and packing plant in Smithfield, Virginia. Their products were very good, the plant grew and town of Smithfield came to be known as the Ham Capital of the World. During the 1980s, the company vertically integrated. In plain English, that means they not only owned

the processing facilities, but they figured out that if they controlled the production of hogs as well as processing they could be more profitable. By the end of 1998, Smithfield owned not only multiple packaging plants but 460 large hog farms farms and had contracts with 2,100 other pork producers 12 states. Smithfield Foods had become the number one pork producer in the United States and was growing internationally. They continued to grow, aggregating the assets of American pork production into larger and fewer blocks. Next time you go shopping, checkout the pork products. You will see labels like Farmland, Morrell, Armour and others. Smithfield owns all of those companies and multiple others. On September 26, 2013, Smithfield Foods and all of its holdings were sold to another company for \$7.1 billion. The name of the company is Shuanghui International Holdings Limited. Yes, a company from the People's Republic of China now owns 26% of all of the assets of the American pork industry. This is the largest single Chinese purchase to date of American assets. China has successfully established an offshore economic colony on American soil.

Let's leave Virginia and Beijing and return to Wisconsin. We have dairy CAFO's in Wisconsin that are in the process of aggregating the assets of Wisconsin's dairy industry into larger and fewer blocks. Any of those blocks can be bought and sold. I don't believe I need to spell out why I told you the Parable of Smithfield Foods.

While our milk supply might be short, our crop nutrient supply certainly isn't. A few years ago, I did a "back of the envelope" calculation and discovered that if we had an efficient distribution system, there was a enough phosphorus produced in animal manure alone in Wisconsin to provide for almost 100% of the phosphorus needs for Wisconsin crops. Some researchers believe that three quarters of Wisconsin agricultural soils already contain overly high levels of phosphorus. And of course, the nitrate situation in the Central Sands, along with human health implications of nitrate contamination, gets worse every year. And even though 26% of Wisconsin cropland now have nutrient management plans on paper, sales of bulk chemical fertilizers in Wisconsin continue to rise. I looked at the fertilizer sales charts on DATCP's website a few days ago and couldn't believe what I was seeing. The charts show 1.3 million tons of bulk chemical fertilizers sold in Wisconsin in 2011. In 2012, it was up to 1.8 million tons. In 2013, the number is 3 million tons. If this is correct, we have more than doubled down on commercial fertilizer use in just three years. I hope I read the charts wrong; I hope I am mistaken.

Last fall, a "Dead Zone" was discovered in in the water body of Green Bay, just like exists in the Gulf of Mexico. Phosphorus, primarily from agricultural runoff, but also from from industry and wastewater treatment plants has created an expanding area of the Bay uninhabitable by aquatic life. The Northeast and the

Central Sands are literally bleeding excessive nitrogen and phosphorus to our water resources. These places cannot absorb another pound of plant nutrients. We have hit the wall. Water quality conditions are telling us what is wrong. Are we listening?

In 2006, greater than 50 private water supply wells were bacteriologically contaminated with cattle manure in the Town of Morrison in Brown County. I don't know how it has turned out for those people, but I am told that some continue to purchase bottled water. In 2004, an entire family in Kewaunee County was stricken with manure-borne *e coli*. They almost lost their four year old daughter. In Walkerton, Ontario, 6 people died and 2,300 people were sickened from waterborne campylobacter after a municipal water supply well became contaminated with cattle feedlot runoff. We have 3.4 million head of cattle in Wisconsin. That's equivalent to 60 million people, the combined populations of both Tokyo, Japan and Mexico City, the two most populous cities on earth. In that light, we should not be surprised about what happened in Brown County and Kewaunee County. Unfortunately, I am not going to be surprised if events like, God forbid, happen as they did in Ontario. We have only seen the tip of the iceberg. Of all the issues that I have dealt with, or should have dealt with, in my career, I have lost more sleep over this issue than any other.

I haven't talked about other problems, like the 20% upturn in soil loss statewide or the the mindless folly of using our cropland base for energy production. We still have a big problem set. But Wisconsin has a record of solving problems. Wisconsin started humbly developing a skill set to solve problems like these while sitting at farmhouse kitchen tables in the 1930's with the Coon Valley Project.

Our uniquely Wisconsin problem-solving skill set is called conservation.

The first Chief of the Soil Erosion Service, Hugh Hammond Bennett, said, "...conservation is not just an incidental bit of the mechanics of farming; it becomes part and parcel of the whole business of making a living from the land, and is the only way by which we may have permanently productive land for a permanent agriculture to support a permanent nation." Other conservationists who would later become well-known came out of the Coon Valley Project, including Aldo Leopold who wrote, "Conservation is a positive exercise of skill and insight, not merely a negative exercise of abstinence and caution."

While I don't have solutions to all the problems I talked about, what I do know is this: I think the best and most successful work that I did during my career was because people like you were doing some of your best and most successful work, too. It didn't matter if we worked for a county, the state, or the federal

government, It didn't matter if we were Republicans or Democrats, it didn't matter if our primary interest was agriculture or environmental protection. What mattered in the 1930's in Coon Valley, what mattered in the 1990's with the Standards Oversight Council and what will matter in the 21st century are the values that we share: that saving the topsoil and protecting the water are how we will live on this piece of land called Wisconsin...without spoling it.

I am going to leave you with a story, shamelessly plagiarized from Aldo Leopold, His Life and Work, by Curt Meine.

In 1926, 39 year old Aldo Leopold had not yet become the nation's first professor of Wildlife Management nor had he begun work on A Sand County Almanac. He was employed by the US Forest Service in Madison, Wisconsin. He was a member of the Wisconsin chapter of the Izaak Walton League. The Izaak Walton League was the closest thing to an environmental organization in the state. The term "environmental protection" was not yet in our vocabulary. The term of the day was "conservation."

At the time, conservation policy in Wisconsin was dictated by the political whims of every new governor and legislature. Aldo Leopold, along with a group of like-minded allies in the Izaak Walton League, drafted and proposed the first conservation policy for the state of Wisconsin. Notably, one of Leopold's strongest allies included a fiery state legislator from Door County, a man named Frank Graass. The main provisions of the proposal included creation of a six member nonpartisan commission that would oversee a new Wisconsin Department of Conservation. The commission, among other duties, would choose a trained and qualified state director to run the new department. At the time, a governor's race was underway and conservation policy became a heated political issue.

Most candidates were afraid of the political repercussions and would not embrace the policy. Republican Fred Zimmerman not only embraced it but campaigned on it, promising to choose the six commissioners from a list of 20 that would be compiled by the state's conservation groups, including the Izaak Walton League. The Izaak Walton League also assumed that the new commission would appoint Aldo Leopold as the first director of the new conservation department, since he was undoubtedly the best qualified person in the state, if not the nation, for the job.

By 1927, Fred Zimmerman had won the election and the conservation policy was adopted by the state legislature. Soon after, Zimmerman was given the list of 20 candidates for the Conservation Commission from the Izaak Walton League, which Zimmerman promptly ignored. Rather, he used appointments to the

commission to pay off political debts. One of his appointees was a casket manufacturer from Fond du Lac. To add insult to injury, Zimmerman's commission did not appoint Leopold to the director's job. Rather they chose a man named Louis Nagler with utterly no conservation or resource management credentials. His only qualification was that he had been an avid supporter of the governor and his policies.

A disgusted Frank Graas, our conservationist Assemblyman from Door County, referring to Governor Zimmerman and his gaggle of appointees, was quoted as saying, "These people don't know a carp from a herring!"

Aren't you glad those days are over?