

# CAFO Factsheet

## **Mounds of Manure:**

An estimated 376,000 livestock operations confine animals in the U.S., generating approximately 128 billion pounds of manure each year. (EPA) Factory farms in Ohio generate approximately 10,545,271 tons of manure per year. Some individual facilities create more waste than small to medium-sized towns. While towns are required to build sewage treatment plants for human waste, similar volumes of livestock waste remain largely untreated. Animal waste is rich in nitrogen and phosphorus and can be a useful fertilizer when applied to crops at appropriate rates. However, there is not always enough available farmland to receive the massive volume of manure generated from factory farms. The result: manure is over-applied, or simply dumped on the land where it can easily runoff into local rivers and streams or leach into groundwater. Put most simply, factory farm pollution results from too many animals creating too much manure, concentrated on too little land.

## **Ground Water Threats:**

Potential ground water contamination from factory farm pollution is a serious concern for Ohioans who live near factory farms, especially those who derive their daily drinking water from private wells. Over 800,000 private water wells (ODNR 1998) and approximately 40% of the public water wells (OEPA 1987) depend on Ohio's ground water for drinking water. In the past, glacial tills and other sediments rich in clay were thought to be water-resistant, making them impermeable to agricultural run-off. However, recent research in Ohio has found cracks, joints, and other pathways called macropores in these deposits that are critical for ground water passage as well as contaminant transport such as nutrient and pathogen-rich animal manure (Weatherington-Rice 2000). Ongoing research in other states suggests that many animal waste lagoons are currently leaking and threaten neighboring drinking water supplies. Current Ohio rules, however, do not require groundwater monitoring near factory farm lagoons. Without better nutrient management technologies and mandatory ground water monitoring, nitrate contamination could go unnoticed and potentially contaminate public and private ground water supplies.

## **Threats to Rivers, Lakes and Streams:**

Pollution from livestock waste reach waterways in two primary ways:

Rain can wash manure off of farm fields or flush manure into subsurface drainage tiles which flow into surrounding rivers and streams. The runoff is often rich with nutrients which can accelerate algal growth or even kill aquatic life. According to the Ohio EPA, agriculture is the leading source of water pollution in Ohio, and the leading cause of fish kills. As poorly regulated factory farms continue to proliferate and expand in Ohio, these facilities will increasingly contribute to the agricultural pollution problems in Ohio.

## **Fish kills:**

In excess quantities, phosphorus and nitrogen, nutrients found in manure and fertilizer, stimulate nuisance algae growth and deplete oxygen in water, which can be toxic to fish and aquatic life. Fish kills have been caused by a number of different factory-farm related pollution events such as: waterways via runoff, spills from lagoons, equipment failures, and purposeful dumping. There have been 72 manure spills in Ohio between 1995 and 1998. Of these, at least 48 have caused fish kills, killing at least 30,000 fish. Fish kills are an obvious indicator of more severe water pollution. In many cases, manure spills and pollution from factory farms may not be potent enough to cause a fish kill, but they still result in water quality degradation and harm other aquatic insects and wildlife.

## **Pathogens:**

Animal manure contains various types of pathogenic viruses, bacteria, and protozoans that can make people sick if they are directly exposed. Pathogens found in livestock waste from factory farms include waterborne protozoa such as *Cryptosporidium parvum* and *Giardia duodenalis* and bacteria including *Campylobacter*, *Salmonella*; pathogenic strains of *E. coli* and *Yersinia* may also be present. The two most common pathogens associated with factory farms are *E. coli* and *Cryptosporidium*. Certain strains of *E. coli* and *cryptosporidium* can cause serious illness and even death. For example, in May 2000, *E. coli* bacteria killed six people and infected 2,000 others in Ontario, Canada. Town officials pointed to heavy rains which washed contaminated manure into the farming community's wells. Crypto has caused a significant number of drinking water-linked outbreaks, including the well-documented March 1993 tragedy in Milwaukee. Crypto entered the city's water supply, killing 100 people and sickening 403,000 others.

## **Air Pollution:**

Factory farms have been found to emit air pollutants such as: hydrogen sulfide, carbon dioxide, ammonia, methane, and manure dust. Recent studies have found that people living near hog farms may suffer from more upper respiratory and digestive tract disorders than people in other farming areas. The results showed a variety of ailments including headaches, runny nose, sore throat, excessive coughing, diarrhea and burning eyes were more frequent among those living close to the hog farms. Even though exposure to some of these air pollutants and odors can impact public health and the environment, factory farms are not currently regulated by the federal Clean Air Act or state law.

## **Antibiotic Resistance:**

Low doses of antibiotics are routinely administered to livestock feed to encourage growth and prevent disease in crowded, factory farm conditions. The Union of Concerned Scientists estimated that humans in the United States use 3 million pounds of antimicrobials to treat disease, while livestock producers use 24.6 million pounds for nontherapeutic purposes. According to the EPA's National Research Exposure Laboratory, "as much as 80 percent of antibiotics administered orally pass through the animal unchanged into bacteria-rich waste lagoons and is then spread on croplands as fertilizer leaving antibiotics available for entry into groundwater and runoff into surface waters." Traces of antibiotics used in factory farm animals have been found in waterways in Western Ohio. A growing body of scientific evidence suggests that even low levels of antibiotics in water supplies may help create 'superbugs': microorganisms that evolve to become resistant to common antibiotics used to treat humans.

## **References:**

Environmental Protection Agency. "Proposed Regulations to Address Water Pollution from Concentrated Animal Feeding Operations." Dec. 2000.

Spills and Kills. Clean Water Network and the Natural Resources Defense Council. [America's Animal Factories: How States Fail to Prevent Pollution from Livestock Waste.](#) United States Department of Agriculture. "Manure Nutrients Relative to the Capacity of Cropland and Pastureland to Assimilate Nutrients: Spatial and Temporal Trends for the United States." Dec. 2000.

Weatherington-Rice, Julie, Ann D. Christy, and Jane L. Forsyth. "Ohio's Fractured Environment: Introduction to *The Ohio Journal of Science's* Special Issue on Fractures in Ohio's Glacial Till." [The Ohio Journal of Science.](#) Vol. 100. June/Sept. 2000. No. ¾

Marks, Robbin. "Cesspools of Shame: How Factory Farm Lagoons and Sprayfields Threaten Environmental and Public Health." Natural Resources Defense Council and the Clean Water Network. July 2001.