



Factory Farms, Fouled Waters

**How Industrial Livestock Operations
Pollute Illinois Rivers, Lakes and Streams**

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Cover photos: While the photos on the cover do not depict the specific facilities or incidents detailed within this report, they do illustrate factory farm pollution in general. *Clockwise from above left:* Aerial photo of Rancho Cantera dairy operation in Stephenson County, Illinois, provided by H.O.M.E.S. (Helping Others Maintain Environmental Standards); Cows confined at a concentrated animal feeding animal operation (CAFO), provided by Jason Lindsey, Prairie Rivers Network; Retaining pond for silage leachate at a large dairy in Jo Daviess County, Illinois, provided by H.O.M.E.S.; Liquid manure from a hog feeding operation in northeast Iowa being pumped onto cropland, by Tim McCabe, courtesy of National Resources Conservation Service, United States Department of Agriculture.

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Executive Summary

Clean water is critical to the environment, public health and quality of life in Illinois. Factory farms threaten the health of our waterways. Across the state, large-scale releases of animal waste and other forms of pollution have fouled local waterways to the point where some can no longer sustain important uses such as swimming, fishing, drinking, or the maintenance of healthy populations of wildlife.

Since 2002, state documents show at least 80 serious instances of factory farms polluting Illinois waterways. However, because of poor tracking and regulation of factory farms (also known as concentrated animal feeding operations, or CAFOs), many other instances of pollution likely go unreported, and many that are reported are never prosecuted.

Illinois should take strong action to stop factory farms from polluting our rivers and streams.

Factory farms produce millions of gallons of waste from swine, poultry and cattle each year.

- A single dairy cattle operation with 700 cows generates approximately 105,000 pounds of manure every day, or as much waste as that produced by 12,600 people.
- Researchers at University of Illinois estimate that there are around 30,000 livestock operations in the state. According to the United States Environmental Protection Agency (U.S. EPA), around 500 Illinois livestock operations are large CAFOs — each of which may raise several thousand to more than a million animals at a time.

Illinois waterways are routinely polluted by animal waste from factory farms. Waste can run off from fields, feedlots and barns, spill from holding ponds or malfunctioning equipment, or in some cases be deliberately dumped into nearby waterways.

- In 2011, nearly 60 percent of livestock facilities contacted or surveyed by the Illinois EPA had at least one spill or other regulatory violation.
- More than 672 miles of Illinois streams and more than 25,000 acres of lakes have been polluted by animal feeding operations, making them among the top 10 causes of pollution for both rivers and lakes, according to the Illinois EPA.

Concentrating thousands of livestock animals on just a few acres is an inherently polluting business practice. These industrial operations generate far more manure than they can manage, as demonstrated in the many cases of water pollution documented by the Attorney General's office in complaints and court orders. For example, according to these documents:

- In 2001, Illinois EPA inspectors caught the operator of Inwood Dairy in Peoria County dumping 2 million gallons of liquid cow manure into a ravine flowing into West Fork Kickapoo Creek, causing a large fish kill and visibly contaminating the creek with foam from the manure.
- In 2009, a swine farm operator in Morgan County told Illinois EPA inspectors that he dumped 27,000 pounds of solid manure into a ravine flowing into a

nearby pond, causing what the Illinois Department of Natural Resources (DNR) called a “total loss” of aquatic life.

- In 2004, Illinois EPA inspectors discovered manure from a swine farm in McDonough County flowing into a waterway leading to Troublesome Creek, filling it with foul-smelling brown sludge about 10 inches deep. Subsequent data showed substantial portions of Troublesome Creek to be too polluted to support fish or other aquatic life.
- In less than three years, two factory farms spilled manure into Panther Creek in Woodford County. According to Illinois EPA and DNR reports, these spills choked Panther Creek’s tributaries with swine waste foam several feet thick, discolored the water in the creek, and killed about 30,000 fish, insects and other wildlife.
- From 2009 to 2011, Fragrant 40 swine farm in Macoupin County was accused of spilling manure multiple times into Taylor Creek. As of 2011, 24 miles of Taylor Creek were too polluted to support fish or other aquatic life.

Policy Recommendations

To protect our waterways from factory farm pollution, Illinois should take the following strong actions:

- **Place a moratorium on new or expanded factory farms** — Factory farms produce unsustainable volumes of waste that threaten Illinois’ waterways. The state should ban the construction of new factory farms and prohibit expansion of existing factory farms.
- **Require all factory farms to obtain water pollution permits** — Illinois should require any factory farm with the potential to discharge waste into state waterways to obtain a permit requiring it to

submit enforceable waste management plans for approval, to report annually on waste management practices, and to be routinely inspected.

- **Place restrictions on manure land-application and storage to protect water quality** — The state should prohibit land-applying waste in wintertime, when frozen soil cannot absorb manure, and in any areas where animal waste can easily migrate to groundwater. The state should also increase the minimum setback between land-application areas and surface waters, and require minimum setbacks between manure storage units and surface waters.
- **Ensure effective enforcement** — The state should ensure that the Illinois EPA has adequate resources to routinely inspect factory farms. The Illinois EPA must also refer more cases to the Attorney General’s office for formal enforcement—including *all* cases involving persistent or severe non-compliance and any violations involving an actual discharge of waste to Illinois waters.
- **Create a comprehensive inventory of factory farms** — As a minimum first step to curbing pollution from factory farms, Illinois should require all CAFOs to register their location and size with the state so the public can understand the scale and scope of the threat factory farms pose to Illinois’ waterways.

In addition, federal officials must immediately restore the protections of the Clean Water Act to all of Illinois’ waterways—including the small rivers, streams and wetlands that currently lack protection. Ensuring federal jurisdiction over all of Illinois’ waters will allow Illinois residents to appeal to federal regulators when state efforts to rein in CAFO pollution fail.

Introduction

In August 2012, several residents living near Beaver Creek in Iroquois County raised an alarm with the Illinois EPA after they noticed foul-smelling “black water” advancing slowly down the creek, leaving hundreds of dead fish in its wake.¹

“It looked like oil, but it’s not oil,” said Les Fox, a fisherman from St. Anne, in a local news report.² Within a few days, more than 10 miles of the creek had become cloudy, discolored, and littered with the carcasses of more than 63,000 dead fish.³ Illinois EPA later identified the source of the pollution: thousands of gallons of liquid swine waste that had spilled from malfunctioning equipment on a nearby field, where the waste was being applied as fertilizer.⁴ According to the Illinois DNR, the manure spill “wiped out everything” in the creek, including mussels, crayfish and insect larvae that provide an important food source for the entire ecosystem.⁵

Because manure solids can settle at the bottom of a creek bed, spills like these can contaminate waterways for a long time.

“This puts a big dent in everything,” said Keith Nielson, another local fisherman, in the report. “That’s sad. Sad, sad, sad. It’s going to take 10 years to repopulate this.”

Unfortunately, major manure spills like the one that polluted Beaver Creek are not uncommon in Illinois.

Just three years prior to the Beaver Creek spill, for instance, another Iroquois County swine farm released more than 200,000 gallons of liquid swine waste into Spring Creek, killing 110,000 fish along 19 miles of the creek.⁶ Illinois has thousands of factory farms that produce far more manure than they can properly dispose of or reasonably manage, making manure spills into waterways a common occurrence. In a single day, just one of the state’s large concentrated animal feeding operations (CAFOs) can produce more waste than that generated by humans in a small or medium-sized town—often resulting in spills, leaks or illegal dumping by farm operators.

Because of poor tracking and regulation of factory farms in Illinois, only a handful of these industrial operations have their pollution limited by enforceable permits. There are thousands of factory farms in Illinois that face no regulatory oversight, despite their contribution to the state’s water pollution problems. There are 30,000 livestock operations in the state, including around 500 large CAFOs.⁷

In this report, we highlight several specific instances of factory farm pollution brought to light in a new review of dozens of legal cases brought against factory farms since 2002 conducted by the Chicago Legal Clinic.⁸ These cases illustrate the need for much stronger regulation of all factory farms to safeguard Illinois’ waterways from pollution.



Aerial view of Rancho Cantera dairy in Stephenson County, Illinois. The large round tank at the bottom of the photo holds liquid manure until it can be spread onto nearby fields. (See below.)



Aerial view of cropland adjacent to Rancho Cantera dairy. The darkly shaded portion of the field above Yellow Creek is saturated with recently applied manure.

Factory Farms Threaten Illinois' Waterways

Illinois has one of the highest concentrations of large-scale factory farms in the nation. There are hundreds of facilities in the state that each keep several thousand cattle, swine or poultry at any given time. These animals produce tremendous amounts of urine and manure that all too often find their way into our waterways, making factory farms one of the leading causes of water pollution in Illinois.

Illinois Has a High Concentration of Factory Farms

“Factory farms” are large-scale livestock operations that raise several thousand to more than a million animals at a time, usually on just a few acres. The U.S. EPA also refers to these factory farms as concentrated animal feeding operations, or “CAFOs,” which are facilities that confine animals for at least 45 days of the growing season in areas without vegetation, and meet certain size requirements.⁹

CAFOs have become increasingly common in Illinois and across the country. According to the U.S. EPA, the number of livestock and poultry produced in the United States has more than doubled since 1950, but the number of agricultural operations has fallen by 80 percent.¹⁰ Production of particular types of livestock has also become concentrated by state or by region, with 60 percent of all swine being produced in just four states, including Illinois, which raises more than 4.3 million head each year.¹¹

Swine operations are now highly concentrated in Illinois. From 1997 to 2007, the number of swine farms

in Illinois fell by 60 percent, but the number of swine fell only slightly, from 4.7 to 4.3 million.¹² The result has been a high concentration of very large swine farms in Illinois. For example, about 97 percent of the 222,000 swine in Clinton County—the state’s largest swine-producing county—were confined on just 20 factory farms in 2007, with each operation averaging 11,000 swine.¹³

The state has many other types of CAFOs as well. According to USDA’s *2007 Census of Agriculture*, the state has 5.4 million egg-laying hens, 93 percent of which were confined on just six factory farms with inventories exceeding 100,000 hens.¹⁴ Updated data for 2012 on the number of farms in Illinois and their inventories—due for release in early 2014—is likely to show a continuation of this trend toward fewer and ever-larger factory farms.¹⁵

Factory Farms Generate Massive Amounts of Waste

Although Illinois has 30,000 livestock operations, the vast majority of the state’s livestock is concentrated in several hundred large CAFOs, according to the U.S. Department of Agriculture (USDA).¹⁶ The thousands of animals confined on these factory farms produce tremendous amounts of waste. For example, given that a single dairy cow can produce 150 pounds of manure a day, an operation with 700 cows generates 105,000 pounds of manure every day, or as much waste as that produced by 12,600 people.¹⁷ In 2007, the state’s largest CAFOs contained 3.9 million hogs,



Massive stockpile of silage (fermenting cattle feed) at Stone Ridge Dairy in McLean County, Illinois. Like manure, silage is high in biochemical oxygen-demanding materials (BODs). When present in waterways, BODs consume the oxygen that fish need to breathe.

150,000 beef cattle, 12,000 dairy cows, and 4.9 million egg-laying hens.¹⁸ **According to Food and Water Watch's 2010 report, *Factory Farm Nation*, these factory farms produce as much untreated manure as 89 million people annually — or nearly 7 times the Illinois population.**¹⁹

Factory farm waste contains a litany of substances that are hazardous to the environment and toxic to humans. For example:

- **Nutrients**—Animal wastes contain high levels of nitrogen and phosphorus, which can cause harmful algal blooms when released into waterways. Blooms of algae can block sunlight from reaching other aquatic vegetation, killing native plants. When the algae die and begin to decay, they lower the amount of oxygen in the water,

suffocating fish or causing them to flee. Nutrient pollution from Illinois has been identified as a leading cause of oxygen deprivation in the “dead-zone” in the Gulf of Mexico, where oxygen levels are too low for most ocean life to breathe.²⁰ In 2013, this “dead zone” covered more than 5,800 square miles—an area larger than the size of Connecticut.²¹ Some algal blooms are also toxic to humans. Cyanobacteria (also known as blue-green algae) produce microcystins that are known neurotoxins and hepatotoxins, which harm the liver.²²

- **Oxygen-demanding materials and ammonia**—Animal waste contains high levels of biochemical oxygen-demanding materials (BOD) and ammonia, both of which are extremely dangerous to fish populations. When present in waterways, BODs consume the oxygen that fish need to breathe.

Ammonia damages gills and other tissues, causes stress, stunts growth and makes fish more susceptible to bacterial infections.²³

- **Pathogens and antibiotics**—Animal waste contains pathogens such as bacteria, parasites, and viruses that can cause human illness, including *Escherichia coli*, *Campylobacter*, *Salmonella*, *Cryptosporidium parvum*, and *Giardia lamblia*.²⁴ Swine waste contains nearly 100 of these harmful pathogens.²⁵ Most animal waste also contains antibiotics, which farms use to both promote growth and prevent disease outbreaks within tightly packed pens or cages.²⁶ However, long-term exposure to low levels of antibiotics can lead to the creation of antibiotic-resistant bacteria, such as *Staphylococcus*, a deadly strain of staph that can be carried by swine and infect humans.²⁷ Humans that drink

water contaminated with antibiotics from animal waste are at risk of developing antibiotic resistance.²⁸

- **Other toxic substances**—Poultry farmers routinely mix drugs containing arsenic into chicken feed to promote growth, improve flesh pigmentation, and improve feed efficiency.²⁹ Arsenic is a known human carcinogen, and chronic exposure is linked to several kinds of cancer, including bladder, kidney, lung, liver and prostate.³⁰ Chicken waste containing arsenic can contaminate soil and water when applied to crop fields as fertilizer. Other harmful substances include heavy metals such as zinc and copper, which are present in cattle and swine waste, and which are toxic to humans at elevated levels.³¹

Factory Farm Pollution Is Harming Illinois' Waterways

Factory farms have emerged as a leading cause of water pollution in Illinois: More than 672 miles of Illinois' streams and more than 25,000 acres of its freshwater lakes have been polluted by animal feeding operations, making them among the top 10 causes of pollution for both rivers and lakes, according to the Illinois EPA.³² These waters are too polluted to sustain uses such as swimming, fishing or the maintenance of healthy populations of wildlife.

Factory farm pollution in Illinois is so severe because the state has thousands of factory farms that produce far more manure than they can properly dispose of or reasonably manage. The thousands (sometimes tens of thousands) of livestock animals that are in densely packed confinements on factory farms generate as much waste as the human populations of many small or mid-sized cities.³³ Unlike cities and towns, however, factory farms cannot rely on sewage treatment systems to safely dispose of such huge quantities of waste. Instead, they must rely on their own on-site manure storage capacity and the availability of nearby cropland that can accept the waste as fertilizer. Too often, the amount of waste generated on factory farms exceeds the farms' capacity for manure storage and disposal. This results in manure spills and polluted runoff, most commonly caused by:

- improperly applying animal waste to crop fields (such as when the ground is frozen or precipitation is imminent), applying waste in excess, or ignoring regulatory buffer zones between waste application sites and surface waters or wells;
- equipment malfunction;
- leaking or overflowing holding ponds;
- runoff from barns or feedlots; and
- intentional dumping.

In 2011, nearly 60 percent of the 189 livestock facilities contacted or surveyed by the Illinois EPA had at least one spill or other regulatory violation.³⁴ Since 2002, the Illinois Attorney General's office has brought legal cases against at least 80 factory farms for water pollution violations, according to a recent analysis by the Chicago Legal Clinic (CLC).³⁵

Following are five detailed accounts of water pollution by factory farms brought to light in the CLC analysis. These case studies demonstrate how the unmanageably huge volumes of waste generated on these farms end up in Illinois waterways, underscoring the need for stronger regulation of factory farms in Illinois.



This aerial photo shows the operator of Inwood Dairy in Peoria County attempting to clean up more than 2 million gallons of manure that he dumped into a ravine to relieve pressure on the facility's near-overflowing manure lagoon. The manure ultimately made its way into West Fork Kickapoo Creek.

West Fork Kickapoo Creek, Peoria County

Inwood Dairy in Peoria County is responsible for one of the largest releases of animal waste in Illinois to date. In 2001, the operator of Inwood Dairy, David Inskeep, was caught dumping 2 million gallons of cow manure into a ravine to prevent a potential overflow from the facility's seven-acre, 40 million-gallon lagoon.³⁶ The spill contaminated the West Fork Kickapoo Creek, which flows into Kickapoo Creek and ultimately into the Mississippi River.³⁷

Aerial photos of the spill showed what looked like "a monstrous river of liquid dung," according to a report in the *Illinois Times*.³⁸ On the ground, Illinois EPA inspectors noted an accumulation of foam at the dis-

charge point, and cloudy, greenish-brown water with a strong waste odor flowing into a pond in the ravine, where dead fish had begun to accumulate on the banks.³⁹ From the pond, dark-brown, foul-smelling wastewater discharged into a waterway leading to West Fork Kickapoo Creek, which ultimately became visibly polluted with foam from the manure.⁴⁰

Before the spill, local residents had suspected that manure from the facility's lagoon was getting into the ponds and streams of the neighboring area, which, according to a report in *The Nation*, were piled so high with scum and foam that it looked like snow.⁴¹

Illinois EPA inspections of Inwood Dairy in the days before the spill revealed that the farm's neighbors had reason to be concerned. On February 15, 2001,

Illinois EPA inspectors noticed that the waste contained in the facility's lagoon was coming up over the top of the berms, and that the dairy had resorted to sandbagging the berms to prevent an overflow.⁴² Inskeep had informed Illinois EPA inspectors the previous day that he was in the process of flushing manure from several of the barns, and despite the lack of available space in the lagoon, he refused to stop the flushing operation or switch to the waterless method of scraping solids from the troughs.⁴³ Scraping solids, he said, would result in solids settling into the pipes, which would force him to hire a contractor to clean them.⁴⁴

The Illinois EPA immediately issued an injunction against any further releases of animal waste from the dairy. However, Inskeep allegedly continued to pump wastewater into the lagoon throughout the night on February 15 and into the next morning, at which point he diverted the wastewater from the flushing operation into an uncontained depression in some farmland south of the barns, which then spilled on to a neighboring property.⁴⁵

Finally, on the night of February 16, Inskeep began pumping nearly 2 million gallons of wastewater from the lagoon into a ravine that flows into West Fork Kickapoo Creek, according to the Illinois EPA.⁴⁶ He was still pumping when inspectors showed up the next afternoon.⁴⁷ The inspectors immediately demanded Inskeep shut off the pump, but Inskeep refused, according to the complaint. When inspectors observed the foam, foul odor, and dead and distressed fish in the ravine, they demanded a second time that Inskeep shut off the pump, and he finally agreed to do so—nearly 24 hours after the dumping had begun.⁴⁸

In 2006, Inskeep pleaded guilty to a criminal violation of the Clean Water Act. He was sentenced to a month in prison, one year of supervised release, and a \$3,000 fine.⁴⁹

The Inwood Dairy case was one of the first cases to clearly demonstrate the state's inability to take strong, timely action to prevent major manure spills—a problem that remains evident in many more recent cases, as well. For example, even before cows were present on the facility, Illinois EPA inspectors noted a half-dozen instances

Photo provided by Karen Hudson, Socially Responsible Agriculture Project



Aerial view of Inwood Dairy's swollen manure lagoon at the time of the 2001 manure spill.

of ammonia-rich liquid leaching from exposed stacks of silage (fermenting cattle feed) pooling in low areas on the property or draining into one of two nearby tributaries of Kickapoo Creek.⁵⁰ Because of these releases, the Illinois EPA instructed Inwood Dairy to obtain a National Pollutant Discharge Elimination System (NPDES) permit in 1998, but it took a year and a half for the facility to do so. Moreover, by the time of the dumping incident in 2001, Illinois EPA had still not approved the dairy's application for a permit.

The Illinois EPA has a stated goal of inspecting facilities with NPDES permits at least once every five years.⁵¹ Unfortunately, as demonstrated by the repeated waste releases by Inwood Dairy in the years before the 2001 spill, five years allows a lot of time for severe and ongoing pollution problems to persist.

Troublesome Creek, McDonough County

In March of 2004, Illinois EPA inspectors visited a 1,800-head sow swine production facility in McDonough County near Colmar in response to a neighbor's complaint about strong, offensive odors of burning flesh coming from the facility, about three-quarters of a mile away.⁵² Upon inspecting the facility, Illinois EPA discovered that it was not only improperly incinerating swine carcasses—thus causing the offensive odors—but also that it was discharging liquid swine waste into several unnamed tributaries of Troublesome Creek that ran around and through the property, according to an order filed by the Attorney General's office.⁵³

Troublesome Creek ultimately runs into the LaMoine River, the sixth-largest tributary of the Illinois River.⁵⁴ At the time of the Illinois EPA inspection of the farm, inspectors noted foul-smelling brown sludge about 10 inches deep, along with black, septic sludge, in a channel on the property that flows into Troublesome Creek.⁵⁵ Inspectors found that swine waste was being discharged into the channel from an illegally

constructed truck wash, which the facility had built to remove manure solids and wastewater from its livestock trailers.⁵⁶ Uncontained stockpiles of manure also threatened at least one other tributary of Troublesome Creek that ran near the property, according to Illinois EPA inspectors.⁵⁷

According to water quality data collected in 2004 and 2005, both Troublesome Creek and the LaMoine River suffered significant water pollution problems: more than 25 miles of Troublesome Creek could not support aquatic life because of a phosphorus overload.⁵⁸ At the same time, about 24 miles of the La Moine River were too polluted with phosphorus to support aquatic life, and another 33-mile stretch was too polluted with fecal coliform bacteria to be safe for primary human contact.⁵⁹

The McDonough County swine farm is just one of many operations run by Professional Swine Management (PSM). PSM manages dozens of swine breeding, gestation, farrowing, nursery and finishing operations in Illinois, including many large CAFOs.⁶⁰ The company has become well-known for its multiple alleged regulatory violations at nine factory farms in five counties, including the facility near Troublesome Creek.⁶¹ According to complaints filed by the Attorney General's office, PSM's alleged violations range from releasing animal waste (including water leached from pig carcasses) into local waterways, to open burning of veterinary medical waste, to illegal construction of new swine confinements, to failing to report manure spills or comply with Illinois EPA orders to clean up spills.⁶² For example:

- **Wildcat Farms, Hancock County** — In 2008, a damaged pipe released a manure stream approximately two feet wide and 200 yards long into a drainage channel, where it entered an unnamed tributary to Wildcat Creek.⁶³ Fifty yards downstream, inspectors found the water to be contaminated with ammonia, suspended solids and fecal coliform bacteria.⁶⁴

- **High Power Pork, Adams County** —In 2008, a ruptured pipe spilled about 90,000 gallons of liquid swine waste into a nearby waterway that flowed into a tributary of South Branch Cedar Creek, and then into Cedar Creek, where it caused a fish kill.⁶⁵
- **Timberline facility, Schuyler County** — In 2008, heavy rainfall caused a purple-colored discharge from this facility’s dead animal composting structure to enter an unnamed tributary of West Branch Sugar Creek.⁶⁶

Any livestock operation that produces massive quantities of waste poses a significant threat to Illinois waterways. However, this threat is particularly acute when the operators demonstrate ongoing disregard for environmental regulations. For example, even after Illinois EPA officials cited PSM’s Troublesome Creek facility for its illegal truck wash, inspections four months later revealed that the company had begun construction to double the facility’s capacity without storm water permits or a pollution prevention plan.⁶⁷ In another case, PSM ignored the Illinois EPA’s instructions to drain a pond contaminated with swine waste to prevent a discharge into a tributary of Honey Branch in Schuyler County for about three months, forcing the Illinois EPA to formally refer the facility to the Attorney General’s office for enforcement.⁶⁸ Having the ability to issue fines immediately upon discovery of a violation would likely improve the Illinois EPA’s ability to deter repeat offenders who continually violate environmental laws.

Suttles’ Pond, Morgan County

In 2009, the Attorney General’s office took legal action against Don Irlam, the owner of a swine finishing operation in Morgan County, for allegedly dumping 27,000 gallons of manure into a ravine that ultimately flowed into a pond owned by his neighbor, Steve Suttles.⁶⁹ The spill contaminated the pond with manure, floating debris, visible oil, grease, scum and sludge—precluding any further use of the pond by

Steve Suttles to water his cattle.⁷⁰ Dead fish lined the pond, and an investigation by the Illinois Department of Natural Resources determined it to be a “total loss” with regard to aquatic life.⁷¹

Just before the spill, all of the manure pits under each of Irlam’s four swine confinement buildings were completely full.⁷² Irlam didn’t own enough land for the proper application of all of the waste generated on his farm, so he depended on his neighbors to accept the waste for their fields. However, due to wet conditions, his neighbors had denied him access to their fields for land-application.⁷³ Left with no option for disposal, Irlam told Illinois EPA inspectors that he deposited 27,000 gallons of manure at the bottom of a ravine at the north end of his property, which ultimately flowed into Suttles’ Pond.⁷⁴

The Irlam case is another example of how CAFOs tend to generate unsustainable volumes of animal waste for any given area. It also highlights how weak tracking and regulation of factory farms allow many polluters to escape Illinois EPA scrutiny unless neighbors notice and report a spill. For example, Irlam waited five days to report his manure spill to the Illinois Emergency Management Agency—doing so only when Steve Suttles reported the fish kill in his pond, according to the Attorney General’s complaint.⁷⁵

Most water pollution cases come to the attention of the Illinois EPA through resident complaints, rather than through regular or random inspections. In part, this is because the Illinois EPA is understaffed, employing a total of four CAFO inspectors for the entire state in 2006.⁷⁶ Although the agency has hired six more inspectors since 2006, in 2010, Illinois EPA staff told the U.S. EPA that “planned inspections, including follow-up at facilities known to have been in noncompliance, may not be completed due to the demands of responding to large numbers of complaints.... Staff estimated that inspections in response to complaints make up about 75 percent of livestock inspections conducted.”⁷⁷

Another reason for the dearth of regular inspections of CAFOs in Illinois is the state’s failure to require most factory farms to have water pollution permits. Current law allows factory farms to decide on their own whether or not they should have a permit to discharge — and most have little incentive to draw increased scrutiny from the Illinois EPA, which prioritizes inspecting facilities with pollution permits.⁷⁸ Often, even when a factory farm is caught discharging, it is not fined for discharging without a required NPDES permit. Ultimately, these farms may not be required to apply for a permit if operators verbally communicate that they have fixed the problems that led to a discharge in the first place.

According to an investigation by the U.S. EPA, the Illinois EPA’s failure to elevate many pollution violations for prosecution by the Attorney General’s office when required is a factor in the agency’s failure to adequately regulate factory farms.⁷⁹ In more than half of the pollution cases examined in the study, the U.S. EPA found that the Illinois EPA’s use of preliminary,

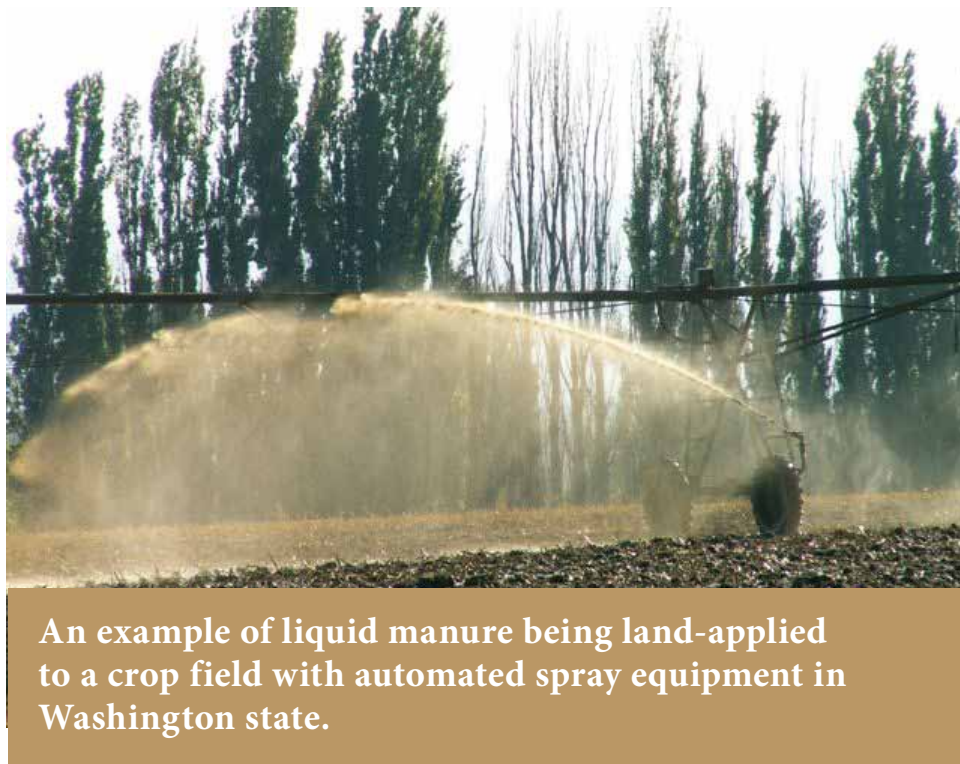
informal enforcement actions did not or were unlikely to bring the polluting facilities into compliance with the Clean Water Act.⁸⁰ According to the U.S. EPA, “Some of the facilities under informal enforcement through a Violation Notice with a Compliance Commitment Agreement were not monitored for time periods as long as five to 10 years.”⁸¹

Additionally, in light of the number of pollution cases exhibiting serious or chronic non-compliance, the U.S. EPA found that the Illinois EPA did not refer a sufficient number of cases to the Attorney General’s office for enforcement.⁸² In 2011, only 11 of the 109 farms with at least one regulatory violation were referred to the Attorney General for enforcement.⁸³

Panther Creek, Woodford County

Many harmful manure spills result from the over-application of animal waste on fields or accidents during field application. Operators who need to dispose of manure from full lagoons or storage pits may land-

Photo provided by Karen Hudson, Socially Responsible Agriculture Project



apply waste even when fields are frozen or too wet to absorb it. They may also apply manure in excessive amounts or outside of designated application areas that are often too close to surface waters.

Due to their proximity to crop fields that routinely accept swine waste, some waterways in Illinois are particularly vulnerable to repeated manure spills, resulting in chronic water pollution problems. For example, in less than three years, Panther Creek in Woodford County endured two major manure spills caused by swine waste runoff from nearby fields. For example, in 2011, Fehr Bros. Swine Farms applied 400,000 gallons of swine manure (about 60 to 65 semi-tanker loads) on frozen ground less than two miles from Panther Creek.⁸⁴ Temperatures rose, and thawed-out swine waste ran off the application site and into a ditch, then into a waterway that drains into Panther Creek.⁸⁵ A neighbor noticed the manure drainage in the waterway, which in some places was choked with foam several feet thick.⁸⁶ Illinois EPA inspectors estimated the flow of animal waste in the waterway to be 200 gallons per minute, and observed that Panther Creek was cloudy and discolored several stream-miles away from the discharge point.⁸⁷ According to the Illinois EPA, the two brothers managing the Fehr Bros. facilities that were the source of the manure said that they had no choice but to land-apply the waste on frozen ground because their manure pits were about to run over.⁸⁸

Two years later, in August 2013, a fertilizer sprayer malfunctioned in another field near Panther Creek, causing swine manure to pool in the field and ultimately run off into the creek.⁸⁹ Immediately after the spill, the Illinois DNR estimated that about 30,000 fish, insects and other wildlife were killed along a four-and-a-half-mile stretch of Panther Creek, accounting for 21 species.⁹⁰

Panther Creek flows into the Mackinaw River, which is a tributary to the Illinois River. As of 2011, more than

40 miles of the Mackinaw River and more than 175 miles of the Illinois River surveyed by the Illinois EPA were polluted with fecal coliform bacteria.⁹¹ Factory farm waste pollution compounds the already severe water pollution problems in the Illinois River. In 2010, the Illinois River was ranked 12th in the nation for discharges of toxic chemicals from industrial sources — including livestock processing plants — receiving more than 3.2 million pounds on toxic chemicals in that year.⁹²

Given the extreme difficulty of safely and responsibly disposing of the huge volumes of manure generated on factory farms, it is not surprising that many factory farm operators cut corners during the land applications of swine waste, particularly during wet or cold weather. Factory farms do not need a permit to land-apply waste, nor must they report on these releases unless a spill occurs and pollutes a waterway, such as through runoff or a large accidental release. If a spill occurs, the facility can be retroactively fined for not having an NPDES water pollution permit, but only if the spill is noticed and reported, and only if the Illinois EPA refers the facility to the Attorney General's office for enforcement. Only 41 of the state's hundreds of factory farms have NPDES water pollution permits that require them to regularly report on releases of animal waste.⁹³ While other facilities are required to report major releases, they often do not do so until complaints trigger an Illinois EPA investigation.⁹⁴

Given the volume of waste that is land-applied on Illinois farmland each year, and the frequency with which polluted runoff enters streams and rivers, all factory farms should have an NPDES permit. NPDES permits require farms to submit waste management plans to the state, to produce an annual report on waste management practices and releases, and to be regularly inspected.



Scum and foam on the surface of polluted runoff from Stone Ridge Dairy in McLean County.

Taylor Creek, Macoupin County

From 2009 until 2011, Taylor Creek in Macoupin County suffered multiple alleged manure spills from Fragrant 40, a 4,500-head swine farm.⁹⁵ Taylor Creek flows in close proximity to Fragrant 40 swine farm, with one section of the creek flowing just a few hundred yards away from nearly 10 million gallons of swine waste held in the facility's two manure lagoons. It is also a tributary of the highly polluted Illinois River.⁹⁶ According to Illinois EPA investigations, spills from Fragrant 40's manure lagoons and other areas of the farm discharged into Taylor Creek, turning the waterway cloudy and making it smell strongly of swine manure.⁹⁷

The manure spills impacting Taylor Creek from 2009-2011 were primarily the result of Fragrant 40's inability to properly handle the large volumes of waste generated on the farm. For example, when new owners bought the facility in 2008, both of the facility's manure lagoons and all of its manure pits were completely full.⁹⁸ The operators also had very few options for disposing of this waste because, like Don Irlam, Fragrant 40 didn't own enough land to properly land-apply all the waste that the farm produced.⁹⁹ As a result, the facility's lagoons and pits were consistently full—resulting not only in water pollution problems, but also air pollution problems.¹⁰⁰ For example, in February 2012, several neighbors of the facility filed a lawsuit against Fragrant 40, claim-

ing that the strong odor originating from the excessive swine urine and manure on the farm prevented them from cooking or eating outdoors, or forced them to sleep in their basements due to the strong odors in their homes.¹⁰¹

Fragrant 40's logistical problems in dealing with so much waste were compounded by the CAFO's refusal to comply with Illinois EPA orders. For example, during one inspection, Illinois EPA inspectors noticed that damage to the outside of some of the swine confinement buildings allowed precipitation to seep into the manure pits below, which was increasing the total amount of wastewater to be dealt with.¹⁰² The inspectors instructed the operators to make the necessary repairs to seal off the manure

pits from rainwater, but the farm operators failed to do so for more than a year. In addition, because of its repeated releases of animal waste, Fragrant 40 was instructed to apply for a NPDES permit in February 2010; but by the time of yet another manure spill in July 2011, they still hadn't applied.¹⁰³ Finally, the farm failed to report two November 2009 spills from its secondary lagoon, and it only reported another spill from a pump blowout after receiving an order to do so from the Illinois EPA, five days later.¹⁰⁴

The Fragrant 40 case is another illustration of the need to give strong enforcement powers to the Illinois EPA that would allow them to take immediate action to penalize farms that consistently fail to comply with environmental regulations.

Stronger Regulation of Factory Farms Is Necessary to Protect Illinois' Waterways

By concentrating thousands of animals on just a few acres, factory farms rely on an inherently polluting business model. The animals at these industrial facilities produce far more waste than the facilities can properly dispose of or safely manage. As a result, animal waste is applied excessively to fields, hazardously stockpiled or illegally dumped to relieve pressure on full lagoons. As this report has shown, these activities result in acute damage to local waterways and contribute to the state's chronic water pollution problems.

Illinois must take stronger steps to hold factory farms accountable for the pollution they produce. Currently, the responsibility for determining whether factory farms' waste management practices are polluting rests with the factory farms themselves. Factory farms are permitted to perform their own evaluation of their operations to decide whether they should apply for a water pollution permit. Because the Illinois EPA does not require all factory farms to apply for water pollution permits, and only those that are caught polluting or admit that they discharge are made to apply, very few factory farms are subject to the regulatory oversight that is clearly necessary to protect Illinois' waterways.

In addition to taking the initiative to evaluate factory farms for pollution problems (rather than having them self-evaluate), the state must step up its inspections of these facilities. In 2011, the Illinois EPA visited

only 189 of the state's 30,000 livestock operations.¹⁰⁵ The state must also refer more pollution cases for enforcement. The U.S. EPA's 2010 review of the Illinois EPA's factory farm pollution program found that the agency fails to refer enough severe pollution cases to the Attorney General, particularly given the high number of CAFOs in serious or chronic non-compliance.¹⁰⁶

Finally, Illinois must improve its tracking of factory farms, which is currently so poor that the state has trouble locating these farms—let alone regulating them. For example, while the Illinois EPA estimated in 2004 that there were about 500 large CAFOs in the state, the agency only knew the size and location of around 30 percent of them.¹⁰⁷ Most of the Illinois EPA's information on CAFOs comes from the Illinois Department of Agriculture (which has issued construction permits for new or expanded CAFOs since 1996); the Illinois Department of Public Health (which collects information on dairies in the state); and their own inspection data. It is unknown how many older CAFOs (built pre-1996) are not captured by the above.¹⁰⁸ Additionally, while USDA agricultural census data can help estimate the number of large CAFOs (which are defined by their size) in the state, it cannot be used to determine the number of medium or small CAFOs, which are defined by both their size and their discharges. Because of this poor tracking, most illegal releases of animal waste likely go undetected unless they generate a complaint or a fish kill.

Policy Recommendations

To protect our waterways, Illinois should take strong action to limit pollution from factory farms. The state can strengthen its programs to regulate factory farm pollution by:

- **Placing a moratorium on new or expanded factory farms** — Factory farms produce unsustainable volumes of waste that threaten Illinois waterways. The state should ban the construction of new factory farms and prohibit expansion of existing factory farms. At a minimum, a moratorium on new or expanded factory farms should be in effect until the Illinois EPA has an accounting of all CAFOs and has inspected all existing operations for compliance with regulatory requirements.
- **Requiring all factory farms to obtain water pollution permits** — Illinois should require that any factory farm with the potential to discharge waste into state waterways should have a National Pollutant Discharge Elimination System (NPDES) or similar water pollution permit that requires it to submit enforceable waste management plans for approval, to report annually on waste management practices, and to be routinely inspected. At a minimum, all factory farms caught discharging should automatically be required to have a permit.
- **Placing restrictions on manure land-application and storage to protect water quality** — These restrictions should include a prohibition on land-applying waste in wintertime, when frozen soil cannot absorb manure, and in areas where sandy soils or natural underground drainages allow animal waste to easily migrate to groundwater. Finally, the state should increase the minimum setback between land application areas and surface waters or conduits to surface waters, and consider requiring minimum setbacks between manure storage units and surface waters.

- **Ensuring effective enforcement** — The state should ensure that the Illinois EPA has adequate resources to routinely inspect factory farms. The state's 2012 law requiring CAFOs to pay a fee for their NPDES permits was an important first step to help fund CAFO inspections, but given the very small number of CAFOs with NPDES permits in the state, stronger action is needed. The Illinois EPA must also refer more cases to the Attorney General's office for enforcement, including *all* cases involving persistent or severe non-compliance and any violations involving actual discharge of waste to Illinois waters. The Illinois EPA's use of informal enforcement actions, such as Notices of Violation or Compliance Commitment Agreements, should be limited only to regulatory violations that *could* lead to water pollution, such as damaged lagoon berms or waste pits exposed to precipitation. The state should also grant the Illinois EPA administrative authority to issue stiff penalties for regulatory violations.
- **Creating a comprehensive inventory of factory farms** — As a minimum first step to limiting pollution from factory farms, Illinois should require all CAFOs to register their livestock inventories and locations with the state so the public can understand the scale and scope of the threat factory farms pose to Illinois' rivers. This information should be mapped in Geographic Information Systems (GIS) and made available to the public.

Finally, federal officials must immediately restore the protections of the Clean Water Act to all of Illinois' waterways, including the small rivers, streams and wetlands that currently lack protection. Ensuring federal jurisdiction over all of Illinois' waters will allow Illinois residents to appeal to federal regulators when state efforts to rein in CAFO pollution fail.

Appendix

The following is a sampling of the information collected by Keith Harley from the Chicago Legal Clinic and his team of student clerks from Illinois Institute of Technology Chicago-Kent College of law in 2012 on water pollution cases brought against factory farms. This list does not include the cases profiled in the body of this report, and does not include multiple cases against a single factory farm.

Harley and his research team obtained water pollution case information from three sources: county circuit court

records, Illinois Pollution Control Records, and Illinois EPA records. When the Illinois EPA refers a pollution case to the Illinois Attorney General's office for enforcement, the Attorney General may choose to prosecute the case through the Illinois Pollution Control Board or, if the pollution case involves a particularly large discharge or necessitates urgent legal action, through the circuit court in the county where the factory farm is located.¹⁰⁹ In other cases, the Illinois EPA may file an administrative citation and resolve the case through direct negotiations with the facility.

CIRCUIT COURT CASES

Name	County (Year)	Facility Information	Polluted Water Body	Alleged Violations, Major Issues, and Penalties Levied
Bradshaw Enterprises, LLC	Douglas (2007)	2,300 swine; capacity 3,500; 5 of 7 buildings house animals Waste is land-applied to lower lagoon levels	Brushy Fork Creek to Embarras River	Lagoon seeping; failure to report or respond to orders No NPDES permit
Todd Chadler Ag. Inc.	Henderson (2009)	500 Beef cattle, 1,000 Swine Open lots, no confinement buildings On-site waste application	Henderson Creek	Wastewater flowing over sandy, permeable soil Cattle living up to neck in liquid manure No buildings to contain waste No NPDES permit
Dare Farms	Fulton (2010)	1,800 cattle 1.3 million gallon above ground storage tank	West Branch Copperas Creek to Canton Lake	Ignored previous enforcement order to reduce herd size to 290 Lagoon overflow, lagoon berm overgrown with weeds, no free space in lagoon Decomposing carcasses exposed to precipitation, caused run off No NPDES permit

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CIRCUIT COURT CASES

Continued from page 22

Name	County (Year)	Facility Information	Polluted Water Body	Alleged Violations, Major Issues, and Penalties Levied
Edmund Farms	Henry (2007)	425 swine, 45 cattle	Tributary of Spring Creek	\$7,500 fine \$211.15 for killed fish
Hellyer Bros. Swine Farm	Hancock (2003)	Swine	Tributary of Bronson Creek	\$1,533.21 fine \$466.79 for killed fish
The Highlands, LLC; Murphy Farms, Inc.; Smithfield Foods, Inc.	Knox (2007)	Swine	Tributary of French Creek	\$9,000 fine \$1,114 for killed fish
Malone Farms and Feedlot	Knox (2011)	600-3,000 cattle at a time 23 acre feedlot Waste collected in piles and moved to be land-applied by semi-trailer/conventional manure spreader	Latimer Creek to Cedar Fork	Heavily contaminated wastewater flowing at rapid rate No manure collection method, uncontained stockpiles of manure Undersized wastewater holding pond
Rich Lane Farms	Clinton (2007)	750 milking cows, 550 heifers	Sugar Creek to Kaskaskia River	Feedlots and land-application fields saturated with waste, waste flowing directly into creek Creek contaminated with nitrogen, ammonia, suspended solids Discharge violations span 6 year period Applied for NPDES permit, yet to receive one at time of violations No free space in eroded waste holding ponds

ILLINOIS POLLUTION CONTROL BOARD CASES

Name	County (Year)	Facility Information	Polluted Water Body	Alleged Violations, Major Issues, and Penalties Levied
Durkee Swine Farm	Henderson (2011)	Swine farm	Middle Creek	Discharging pollutants without permit Applying waste to land over the limit \$5,500 civil penalty
Giertz Swine Farm	Mercer (2007)	2 barns with cement feedlots and 3 confinement buildings, each with waste storage pits	Parker Run	Caused discharge of contamination without permit
Mil-R-Mor	Stephenson (2010)	Dairy cows 1,300 acres On-site waste application No containment or runoff structures	Tributary to Brush Creek	No manure stack/containment method Discharged manure into tributary Improper field application
Northwest Illini Feedlot	Carroll (2012)	Beef cattle feedlot	Straddle Creek	Lagoon berm failure allowed water to run off Didn't follow land application rules Had NPDES permit, but did not follow discharge limits \$6,500 civil penalty
Timmerman Farms, LTD.	Clinton (2007)	675 milking cows	Shoal Creek	Lagoon overflow due to rain and no available space Waste leaching from a bunker No NPDES permit

ILLINOIS EPA CASES

Name	County (Year)	Facility Information	Polluted Water Body	Alleged Violations, Major Issues, and Penalties Levied
Allen Barry Livestock	Ogle (2010)	300+ cattle	Tributary to Mill Creek leading to Rock River	Lacked capacity to contain precipitation to standard Permit mandated livestock waste disposal assimilates with land – did not do so Failed to monitor rainfall and waste storage NPDES permit expired; not renewed \$75,000 penalty
Birchen Farms, Inc.	Stephenson (2012)	700 dairy cattle	East Plum River and Mississippi River	Unpermitted Discharge \$25,000 penalty
Cold Springs Farm	Jo Daviess (2009)	Turkey and sow	Thames River	Land application contaminated groundwater \$66,000 in compliance costs
Greenville Livestock, Inc.; multiple feedlots	Centralia, IL (multiple counties) (2010)	1,000 cattle	Prairie Creek to Lost Creek to Crooked Creek to Kaskaskia River	Contaminated runoff from uncovered silage No NPDES permit \$40,000 penalty
Henrichs Dairy	Clinton (2011)	235 dairy cows	Shoal Creek	Order to provide containment structure for waste \$40,000 compliance cost

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