

EMU study finds multi-drug-resistant bacteria near CAFOs here

Bacteria resistant to five antibiotics found in waters of Rice Lake Drain

Eastern Michigan University researchers tested streams in our area for antibiotic resistant bacteria. Their study, begun in 2004, was published recently in the journal *Water, Air, and Soil Pollution*.

The full EMU study, "Antibiotic Resistance, Gene Transfer, and Water Quality Patterns Observed in Waterways near CAFO Farms and Wastewater Treatment Facilities," by Bridgett West, Peggy Liggitt, Daniel Clemans and Steven Francoeur, is available on our website.

EMU researchers tested several sites impacted by area CAFOs – Medina Drain, Rice Lake Drain, and Lime Creek (Lime Lake Inlet East) downslope from the former Vreba-Hoff 2, now SMD 2.

They also tested water in streams that are not impacted by CAFOs, and upstream and downstream from two wastewater treatment plants.

Antibiotic resistant bacteria were found at all sites, but the researchers note that, "Multi-drug-resistant bacteria were significantly more common at sites impacted by CAFO farms."

Water tests after one rain event found fecal coliform bacteria Too Numerous To Count at Medina Drain and at Rice Lake Drain; and 4,400/100 ml at Lime Creek. Downstream from the wastewater treatment plants, by contrast, the bacteria counts were much lower: 198/100 ml and 174/100 ml.

Rice Lake Drain - Superbugs

At Rice Lake Drain, 56.9% of bacteria tested were resistant to multiple antibiotics, and 8.6% of those were resistant to **five** important antibiotics: ampicillin, kanamycin, chlorotetracycline, oxytetracycline, and streptomycin.

The EMU study concludes, "CAFO farms not only impair traditional measures of water quality but may also increase the prevalence of multi-drug-resistant bacteria in natural waters."

The High Cost of Cheap Meat

Nationally, the increase in multi-drug-resistant bacteria is a critical public health concern, with "Superbugs" from livestock factories finding their way into people. On CAFOs, where animals are often fed antibiotics to promote growth, bacteria can quickly mutate, swap genes, and develop resistance to drugs.

A minor infection in a person can become serious or deadly if one or two – or more – antibiotics don't work. New antibiotics can take decades to develop.

"The High Cost of Cheap Meat," an editorial in *The New York Times* on June 2, 2011, noted: "What factory farms are really raising is antibiotic-resistant bacteria, which means that several classes of antibiotics no longer work the way they should in humans. We pay for cheap meat by sacrificing some of the most important drugs ever developed."

Flies Fly

New research published this year from North Carolina State and Kansas State Universities found that even flies on large farms can acquire antibiotic-resistant bacteria and "have the potential to spread these bacteria throughout the farm and to residential settings."

"We pay for cheap meat by sacrificing some of the most important drugs ever developed."

–New York Times, June 2, 2011

"Multi-drug-resistant bacteria were significantly more common at sites impacted by CAFO farms." –EMU study



Rice Lake Drain at Haley Rd – photo from the first ECCSCM Water Monitoring Project, taken on Aug. 21, 2002. On that day, Dissolved Oxygen tested at 1.7 mg/L – fish-kill level. E. coli was Too Numerous To Count. A week later, DO was 0.7 mg/L and E. coli count was 14,790/100ml – too polluted to touch. MI Water Standard for E. coli, for partial body contact is 1,000/100ml or less.

ECCSCM plans follow-up water project, new air monitoring near manure fields

Follow-up Water Monitoring

After 10 years of CAFOs and liquid manure application, how's the water doing? Worse? Better?

These days we hear people say, with Vreba-Hoff gone, the bad actors are gone. Other CAFOs are managing manure just fine.

But nobody really knows. Nobody's been testing the water.

From 2001 to 2003, when CAFOs were first gearing up here, ECCSCM conducted a Water Monitoring Project testing for *E. coli* bacteria and Dissolved Oxygen. During the 2 years, we tested 79 sites, collecting a total of 430 water samples. We sampled 10-12 sites twice a month during most months. Some critical sites were sampled repeatedly.

Water tests identified several streams at risk, with repeatedly high bacteria counts and/or low Dissolved Oxygen at Rice Lake Drain, Toad Creek, Medina Drain, and Durfee Creek Extension.

DEQ followed up with their own investigations and water tests. In 2004, they placed Medina Drain and Durfee Creek Extension on Michigan's 303(d) list of "impaired waters," citing Vreba-Hoff manure discharges. Both streams have their origin on Vreba-Hoff (now SMD) property. True headwaters of Lake Erie.

But nobody's tested the water routinely since then or followed up with the other at-risk streams. Nobody knows if it's better, just as bad, or worse.

We decided to do a Follow-up Water Monitoring Project, sampling some of the same sites as 10 years ago, beginning in July 2011. We'll keep you posted on the website and in the next newsletter about what we find.

New Air Monitoring Project

A generous donation to ECCSCM has led to a plan for an Air Monitoring Project near CAFOs. How polluted is the air near manure application fields? What's in that stink?

NEW PROJECTS, continued on p.2

NEW PROJECTS, continued from p. 1

What are you breathing if you live nearby?

ECCSCM will purchase monitors for measuring one or more CAFO pollutants – hydrogen sulfide, ammonia, or particulates.

New technologies make it possible to stream data from single point monitors to computers, to get real-time and continuous measurements of pollutants.

Michigan lags behind in data about CAFO air pollution. DEQ has few air meters and does not monitor CAFO air quality. The Michigan Department of Agriculture and Rural Development, the agency responsible for responding to complaints about CAFO air emissions/odor, has NO air meters.

The Minnesota Pollution Control Board has monitors near CAFOs and other industrial sites, and streams the data online. One CAFO in Minnesota was shut down last year as a public health risk, because of hydrogen sulfide emissions.

A recent 2-yr air quality study near CAFOs, funded by the livestock industry, found significant ammonia emissions at numerous facilities. The study did not monitor air pollution from land application.

An air monitoring project from 2003 - 2005 near hog CAFOs in North Carolina sampled for hydrogen sulfide, particulates, and endotoxins, and documented health symptoms neighbors living nearby reported. That study concluded that "air pollutants near hog operations cause acute physical symptoms, particularly upper respiratory symptoms and irritation of the nose and eyes."

Neighbors are suffering here, too, especially when liquid manure is applied on fields, particularly cut hay fields, where manure is not incorporated.

But no one – no health department, no other agency – has monitored air quality near the CAFO facilities or near land application sites.

We'll pass along more details as we implement the air monitoring project.

ECCSCM is now on Facebook and YouTube

Post your comments

Report CAFO pollution in your area

Let us know where the action is for a video



ECCSCM Photo Album – from our Facebook page



JOIN US!

AT LAST, WE'RE TAX-DEDUCTIBLE!




ECCSCM is now a 501(c)3 organization!

In April, 2011, ECCSCM was granted federal 501(c)3 status as a tax-exempt organization qualified to receive tax-deductible donations.

Our mission is the same as always – to educate the public on the risks and the damage Confined Animal Feeding Operations have caused in our community and its watersheds; and to advocate for sustainable alternatives, including pasture-based livestock production.

We will continue our efforts to document our concerns with data from monitoring projects and other research, to document violations, and in the public interest to archive all data and violations on our website.

Please support us and donate to our monitoring projects!

Click the  button on www.nocafos.org

or mail a check to
ECCSCM
P.O. Box 254
Hudson, MI 49247

All donations are tax-deductible!



JOIN US: Yes, I want to help protect our water and air, and promote sustainable agriculture. **All contributions support monitoring projects and community education.**

Name: _____

Address _____

City _____ State _____ Zip _____

___ Annual Membership \$25 ___ Senior Membership \$10

ECCSCM is a 501(c)3 nonprofit. Donations are tax-deductible

Click on the  button on www.nocafos.org

Or, mail check to: ECCSCM, P.O. Box 254, Hudson, MI 49247

Thank You!

We Support Sustainable Agriculture

- that preserves and protects our air, streams and lakes
- that raises animals in a healthy, natural environment, grazing, absorbing sunshine
- that avoids the steady diet of hormones and antibiotics given animals in the crowded, confined conditions of industrial facilities
- that values and protects farmland, the environment and the rural community

ECCSCM joins groups in petition to EPA to regulate ammonia under Clean Air Act

Led by the Environmental Integrity Project, a group of organizations petitioned the EPA in April this year to regulate ammonia as a "criteria pollutant" under the Clean Air Act.

ECCSCM joined the petition because of concerns for ammonia emissions from CAFOs, both from lagoons and from field application of liquid manure.

Exposure to airborne ammonia can cause serious respiratory problems. Agriculture is the largest source of ammonia emissions.

EPA has the authority to designate pollutants that endanger public health as 'criteria pollutants' and to establish National Ambient Air Quality Standards, which can lead to changes in practices to reduce emissions.

NEWS, UPDATES

Ban on Phosphorus fertilizer exempts Ag

The Michigan legislature voted to ban Phosphorous lawn fertilizers beginning in January next year. Phosphorus feeds toxic algae and contributes to the low-oxygen "dead zone" in Lake Erie. But agriculture, which puts the most Phosphorus into our streams – in fertilizers and manure – is (as usual) **exempt**.

Ag team recommends "whole-system redesign"

Recommendations of a nationwide team of agriculturists on Ag Systems in the 21st Century appear the May 6 issue of *Science*. With important issues such as global climate change, biodiversity, resource conservation and public health problems, the ag team notes, agriculture needs a **"transformative approach"** to change. For decades, they say, "the agricultural industry, research community and government have looked to incremental improvements in agricultural practices and technologies."

They recommend a **"whole-system redesign"** that "would incorporate innovative agricultural systems such as organic farming, grass-fed and other alternative livestock production systems, mixed crop and livestock systems, and perennial grains."

See the team's 598-page 2010 National Research Council report, "Toward Sustainable Agricultural Systems in the 21st Century" – http://books.nap.edu/openbook.php?record_id=12832&page=R1

MSU awarded air monitoring grant

MSU was awarded a 5-year, \$8 million research grant from the EPA for studying the health effects of air pollution. Dr. Jack Harkema of the College of Veterinary Medicine will be the lead investigator.

MSU has done considerable lab research on animal air pollution and diet, on the health effects of air pollution on mice. Dr. Harkema's lab has a portable air monitor that's been used in Detroit and Los Angeles to study air pollution on urban communities from traffic, diesel fumes.

When will MSU look at rural communities and agricultural air pollution? CAFO pollution?

Southern Michigan Dairies and DEQ sign Consent Order with new deadlines, fines

An Administrative Consent Order detailing compliance requirements was signed March 2, 2011 by the DEQ and Southern Michigan Dairies. This reworking of penalties and deadlines was negotiated following the takeover of the 3 Vreba-Hoff CAFOs by Rabo Agrifinance and its Southern Michigan Dairies subsidiary in November 2010.

The Order requires SMD to pay \$100,000 as partial payment of Vreba-Hoff fines owed, requires SMD to empty and close the satellite lagoon on Packard Rd by Sept. 30, 2011, as well as close the failed concrete lagoon at SMD 1 (formerly V-H 1 on Dillon Hwy).

The Order also requires SMD to notify DEQ if any potential buyer is "involved with Wilhemus van Bakel personally or any of his business entities, including but not limited to: Vreba-Hoff Dairy, LLC; Vreba-Hoff Holding, LLC; Vreba-Hoff Dairy Development; the Van Bakel Group, or Nova Lait, LLC. The DEQ reserves the right to leave whole the Judgment Liens...should SMD transfer Dairies I, II, or III ... to a van Bakel or Vreba-Hoff affiliated entity."

Public Meeting with DEQ

At an open meeting on May 18 with ECCSCM, Rabo Agrifinance and SMD personnel, Nicole Zacharda from DEQ discussed the Consent Order and ongoing compliance issues. Zacharda acknowledged the EarthMentor "treatment system" of lagoons Vreba-Hoff had installed "never worked as described."

Given the heavy rain this spring, Zacharda said DEQ is working with SMD to keep manure issues from getting "out of control."

Volunteers keep us going – and flying!

Volunteers with ECCSCM sample water, write grants, keep the books, write this newsletter, serve on state-level committees, go to conferences, document health symptoms of neighbors, keep the website and Facebook and YouTube going, FOIA documents, write letters, make calls, take videos and photos.

See the aerial photos on the next page – that's all volunteer, too, thanks to volunteer pilots with **Lighthawk**, a group that provides donated flights to make "the aerial perspective" available to conservation groups all over the US and around the world.

Without Lighthawk pilots and volunteer photographers, no one could see the CAFO lagoons, the extent of manure application, the runoff from fields to streams. So much environmental damage is hidden.



Thanks to every volunteer, and every Lighthawk volunteer pilot!

ECCSCM Meetings - 3rd Wednesday of the month, 7:30 p.m. Hudson Community Center

How to document the health impacts on our community

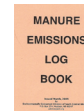
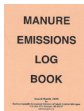
When you notice manure emissions and have physical or mental health symptoms, when you have to change your daily activities, please report the details to ECCSCM. All information will be anonymous. We use the health data to raise awareness and to inform policy makers, legislators and health departments.

To report health symptoms from manure emissions

1) go online: www.nocafos.org/reportform.htm

or

2) use printed log: contact us for a free copy of *Manure Emissions Log Book*



All photos from ECCSCM/Lighthawk flight on June 4, 2011



Area lagoons were nearing capacity after winter build-up of manure and heavy spring rains. Photo above, Hartland Farms.



Black lagoons at Southern Michigan Dairies, Facility 2 along US-127.



SMD 2 along US-127 – DEQ reported lagoons were nearly full and SMD 2 was hauling manure in tankers to vacated SMD 1.



SMD 1 on Dillon Hwy – lagoons appear full here, too. No cows in these barns since last fall when SMD took over Vreba-Hoff, moved animals to SMD 2.



"Satellite" lagoon on Packard Rd, ordered emptied and closed last year. DEQ postponed the deadline for SMD until September 30, 2011.



Close-up of SMD 1 "composting" area, upper left, bunker with collapsed wall, lower right.