

Livestock and the environment

MPCA Feedlot Program overview

In Minnesota there are an estimated 18,000 livestock feedlots registered under the state's feedlot rule. They range in size from small farms to large-scale commercial livestock operations. Agriculture including livestock comprises a major portion of the state's economy. Many organizations and programs work with livestock producers to ensure that Minnesota continues to have a healthy livestock industry and a healthy natural environment.

The Minnesota Pollution Control Agency (MPCA) regulates the collection, transportation, storage, processing and disposal of animal manure and other livestock operation wastes. The MPCA Feedlot Program implements rules governing these activities, and provides assistance to counties and the livestock industry. The feedlot rules apply to most aspects of livestock management including the location, design, construction, operation and management of feedlots and manure handling facilities.



The MPCA feedlot staff are located in six offices: Brainerd, Detroit Lakes, Mankato, Marshall, Rochester, and St. Paul. They work in the areas of land application of manure, permitting, data management, technical assistance, and compliance with feedlot rules. On the web: www.pca.state.mn.us/water/feedlots.

Protect water

There are two primary concerns about feedlots in protecting water in our agricultural areas:

- Ensuring that manure on a feedlot or manure storage area does not run into water;
- Ensuring that nutrient-rich manure is applied to cropland at a rate, time and method that prevents nutrients and other possible contaminants from entering streams, lakes and ground water.

The MPCA works with farmers to make sure their feedlots are environmentally safe. Staff provides technical assistance to farmers, and conducts inspections at feedlots to be certain they comply with environmental requirements. Some of those requirements for feedlots include:

- Construction specifications for manure storage areas;
- Manure management plans for medium and large-sized feedlots; and
- Land application of manure on fields.

Feedlot rule

Feedlot rules have been in effect in Minnesota since the early 1970s. In October 2000 a major revision of the feedlot rule (Minn. R. ch. 7020) went into effect, followed by an update in 2014. The main goals are:

- Register all feedlots capable of holding 50 or more animal units (AU-see page 4), or 10 or more animal units within shoreland areas;
- Focus on animal feedlots and manure storage areas that have the greatest potential for environmental impact;
- Support the role of delegated counties in the feedlot program; and
- Maintain agency and delegated-county staff field presence.

The feedlot rule does not specifically regulate pasture operations; however, they still must abide by Minnesota Rules chapter 7050 prohibiting pollution of state waters.

Delegated county program

In 50 counties (current as of January 2021) the feedlot program is conducted through a cooperative arrangement between the MPCA and county government. County feedlot programs have responsibility for implementing state feedlot regulations for facilities with fewer than 1,000 animal units (AU) that are not subject to state or federal operating permit requirements. These responsibilities include: registration, permitting, inspections, education and assistance, and complaint follow-up. Current map of delegated counties: www.pca.state.mn.us/sites/default/files/wq-f1-12.pdf

Delegated counties receive state grants to help fund their programs. Funds are awarded based on the number of feedlots in the county with more than 50 AU (10 or more AU in shoreland) and the level of inspections completed. In recent years annual grants statewide have totaled nearly \$2 million. Delegated counties work together through the Minnesota Association of County Feedlot Officers: www.pca.state.mn.us/water/minnesota-association-county-feedlot-officers



Feedlot permits

Most smaller-sized feedlots are not required to have permits. Most large feedlots operate with state and federal permits. The National Pollutant Discharge Elimination System (NPDES) permit and the State Disposal System (SDS) permit require specific conditions to comply with state law and the federal Clean Water Act. Of the approximately 1,200 feedlots operating with an NPDES or SDS permit, most have a general permit; about 50 have individual permits. A general permit is a single document that can apply to all livestock facilities whose operations are similar. The MPCA or delegated counties also issue permits for feedlot construction, and interim permits allowing feedlots with pollution problems to operate in a two-year period during which the problems are corrected.

Nutrient and manure management

Livestock manure is a valuable resource if managed properly. It has been estimated that the amount of manure generated by livestock in Minnesota would be equivalent to that of a human population of about 50 million. Land application removes livestock manure from feedlots and provides fertilizer for crops. There are many ways to ensure that land-applied manure does not run off into waters, and is not over-applied beyond crop nutrient needs. Manure management plans are required when producers need to apply for a feedlot permit, or when a facility has 300 or more AU and does not use a licensed commercial applicator. Manure management plans help ensure that application rates do not exceed crop nutrient needs, and that setbacks from waters and drain tile intakes are observed.



Environmental assessment at large feedlots

An environmental assessment looks at how a proposed feedlot project will affect the air, water and land, and at ways to mitigate any problems so that the project can go forward and be environmentally safe. Environmental Assessment Worksheets (EAWs) are mandatory for proposed feedlots over 1,000 AU, or over 500 AU in a sensitive area. More information is available on the Environmental Quality Board Web site: www.eqb.state.mn.us/.

Pasture

Pastures are a common type of livestock operation. Typical examples include beef grazing and cow/calf operations. A pasture operation is not required to have a feedlot permit. Distinguishing pastures from feedlots is not always easy. Some operations include both pasture and feedlot components. An area of an operation with accumulated manure and a lack of vegetative cover beyond the immediate vicinity of supplemental feeding or watering devices, working areas, or access lanes, will not be considered to be pasture.

Winter feeding areas are exempt from feedlot rules, but they must be part of a larger grazing area where grass or other growing plants are used for grazing. Even if an operation is not required to get a permit because it is considered to be pasture, that operation is not allowed to discharge to waters of the state. For example, a pasture with a flow of manure-contaminated runoff from a supplemental feeding or watering area to a stream will be required to terminate the discharge. Seasonal or crop residue grazing may also be considered pasture. However, if the concentration of animals is such that unvegetated “feedlot” conditions develop and adequate forage is not available for livestock, requiring regular feed to be provided, the MPCA will require a feedlot permit for animals confined on cropland.



Air quality

As some livestock operations have grown larger and more people are living near livestock farms, odor (particularly hydrogen sulfide) has become an issue. There are regulations for hydrogen sulfide, which can be toxic at high levels. The MPCA does not regulate odor in general; however some local units of government may have restrictions related to odor.

The MPCA does regulate hydrogen sulfide emissions and requires the following:

- Requiring odor management plans to be included in the permits of large feedlots; and
- Monitoring hydrogen sulfide emissions at feedlots where there have been odor complaints.

Training and technical assistance

The MPCA provides training opportunities and assistance to counties and livestock producers. County feedlot officers receive inspection and permitting training, covering all aspects of the program. MPCA technical staff conduct workshops and presentations for county staff and producer groups.



Contacts

Contact information for feedlot program staff is available at www.pca.state.mn.us/water/mpca-feedlot-staff-contacts, or by calling the MPCA at 651-296-6300, or 800-657-3864.

For more information

Producer organizations also provide environmental management information to their members. The following Web sites are good information sources for feedlots and manure management:

- Manure and Odor Education Research – University of Minnesota Extension: extension.umn.edu/livestock-operations/manure-management.
- Minnesota Department of Agriculture: www.mda.state.mn.us/siting-livestock-farms-minnesota.
- National Agriculture Compliance Assistance Center: www.epa.gov/oecaagct/anafocom.html.

Animal units

Minnesota uses animal units to quantify the size of livestock feedlots. One animal unit is equivalent to the amount of manure produced by a 1,000-lb. steer. Following is a list of animal unit factors for several livestock types. The number livestock times the animal unit factor gives the number of animal units.

Mature dairy cow over 1,000 lbs.....	1.4	AU
Cow/calf pair	1.2	"
Stock cow/steer	1.0	"
Horse	1.0	"
Dairy heifer	0.7	"
Swine 55-300 lbs.....	0.3	"
Sheep	0.1	"
Broiler (over 5 lbs., dry manure)	0.005	"
Turkey over 5 lbs.	0.018	"
(Example: 3,334 market hogs = 1,000 AU)		

