

MAJOR ENVIRONMENTAL ISSUES AND WISCONSIN LIVESTOCK AGRICULTURE

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Federal Level

Coastal Zone Act

Passed in 1990 to protect US coastal waters from sedimentation and environmental degradation. Administered by the National Oceanic and Atmospheric Administration (NOAA). NOAA utilized the scientific research branch of the Environmental Protection Agency (EPA) to establish the following definitions for agricultural livestock operations:

Small livestock operations — 28 to 97 animal units (AU) dairy, 50 to 300 AU beef. These operations must implement some form of Nutrient Management (including reducing soil loss to tolerable levels), upgrade design capacity of barnyard runoff control practices to withstand 25 yr/24 hr storm event (current design requires 10 yr/24 hr design capacity).

Large livestock operations — Greater than 97 dairy or 300 beef animals. Large livestock operations must: contain all runoff from barnyard areas; no winter spreading of manure is allowed; must implement phosphorus based nutrient management (not specifically defined by the legislation).

Until now, Wisconsin has chosen not to move ahead with implementation of the Coastal Management Zone because of lack of funding and limited enforceability by NOAA. The EPA's Clean Water Action Plan has prominently positioned the Coastal Management Zone Program within their rules and will limit federal 319 Clean Water Act funds to states that do not comply with the Coastal program. Wisconsin will negotiate with NOAA to integrate the Coastal Management Program into ongoing redesign of the Nonpoint Source Water Quality Program in the most reasonable way that we can.

USDA/EPA Animal Feeding Operation (AFO) Joint Strategy

EPA's Clean Water Action Plan called for more consistent enforcement of permitting of livestock operations as defined by the Clean Water Act.

Current definitions —

- A) Concentrated animal feeding operation (CAFO): Greater than 1000 AU (AU=1000 lb live weight equivalent). Wisconsin currently permits all livestock operations and is considered in full compliance with this requirement. Some other

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states are not currently requiring permits for large operations and EPA has threatened to issue permits in states that do not implement their own program. Concentrated animal feeding operations are defined as “point sources” of pollutants by federal code and are required to obtain pollutant discharge permits like other point sources such as paper mills and wastewater treatment plants.

- B) Animal feeding operations (AFO), 300-999 AU with prohibited conditions: Prohibited conditions are defined as:
- Direct discharge into waters of the nation via a “man-made conveyance”
 - Feedlots, of this size, where waters of the nation flow through the lot and livestock come into direct contact with the waters.

Proposed changes —

- A) A three-tier structure where AFO’s with more than 1000 AU would be considered a CAFO as would operations 300 to 1000 AU in size that meet certain conditions. All facilities 300 to 1000 AU must certify that they do not meet the conditions or apply for a permit; or
- B) A two-tier structure where AFO’s with 500 AU or more would be considered a CAFO.
- C) Eliminating the 25-yr, 24-hour storm permit exemption

Comprehensive Nutrient Management Plans

The AFO Joint Strategy establishes a goal that ALL livestock operations will have a comprehensive nutrient management plan (CNMP) by 2009. The CNMP would be mandatory for permitted operations and voluntary for all other AFO’s. Wisconsin currently requires nutrient management plans for all permitted livestock facilities. The Wisconsin NRCS Nutrient Management Standard (590) is largely in compliance with the CNMP as proposed. Wisconsin will need to strengthen record keeping requirements and does not address feed management to reduce phosphorus content of manure.

Comprehensive nutrient management plans shall consider:

- A) Manure and wastewater handling and storage: Construct structures to recognized engineering standards (NRCS 634 Manure Transfer and NRCS 313 Waste Storage Structure for Wisconsin) and divert clean water from manure storage areas. Other considerations include air quality and pathogens. WDNR currently has an interim odor policy that utilizes an Agricultural Odor Complaint Database.
- B) Land treatment practices: Soil conservation measures shall be in place on all land where manure is applied such that soil erosion is at or below tolerable (T) rates. Other conservation practices, such as buffer strips near surface waters, may be necessary in some areas to control N or P losses.
- C) Nutrient management: Land apply manure as a fertilizer source. Nutrient application rates should not exceed the capacity of the crops to utilize these nutrients in order to prevent pollution. Timing and methods of manure application should be planned to prevent land spread manure from entering surface or ground waters. NRCS 590, Nutrient Management Standard, is currently recognized as the reference for manure handling in Wisconsin. WPDES permits can take steps beyond NRCS to protect water quality.
- D) Record keeping: AFO operators should keep records of the where, when and the amount of manure applied by field. Soil and manure testing for nutrient content is required by the 590 Nutrient Management Standard. The final version of the AFO Strategy indicated that AFO operators are responsible to maintain records of manure that leaves their farm and corporations that contract with farmers to raise livestock can be held accountable for the management of manure produced by the contract grower.
- E) Feed management: Research indicates that a 10% reduction in the phosphorus content of

manure can be achieved by implementing feed management. Producers can voluntarily implement feed management to reduce acres of land required to spread manure, especially in areas where phosphorus based nutrient management is critical to meet surface water quality criteria.

- F) Other utilization activities: Adopt other technologies to treat and/or dispose of manure such as solids separation, waste water recycling, manure composting and treatment. These technologies have not become widely adopted within the live-stock industry likely due to cost. In general, these technologies concentrate the nutrient content of the waste making transport of the nutrients more cost effective. Many of these alternatives would require significant investment of capital in higher levels of technology.

{NOTE: As a minimum, a CNMP would address elements 1-4 above.}

Total Maximum Daily Loads

A total maximum daily load (TMDL) is a waste load allocation plan designed to maintain pollutant discharges at a level below a threshold where impairment would occur. The goal of a TMDL is to identify background levels of a given pollutant and manage human caused inputs. In agriculture, phosphorus and nitrogen are the pollutants of primary concern.

Key Points

Cost of implementation: EPA is seeking estimates on the cost of implementing TMDLs. Nutrient management, conservation tillage, crop rotation, buffers, etc. are all practices being considered.

Surface water criteria: EPA is working to establish TMDL thresholds for pollutants in surface waters

Re-permitting of existing dischargers- Existing point sources will be required to lower the levels of pollutants such as phosphorus in their discharge and in turn will place increasing pressure on nonpoint sources to also lower pollutant losses. Agricultural performance standards and pollutant trading are example responses to this.

Safe Drinking Water Act

As drinking water standards get more stringent, the demand for water is increasing. Agriculture, industry and urban and rural residents all compete for the resource. As a result, one should expect more wellhead and source water protection regulations in the future. From a cost standpoint, protection is much cheaper than clean up. Agriculture is working voluntarily with municipalities and using BMPs to protect surface water and groundwater recharge areas. New York City is an example, as is Waupaca, WI.

State Level

AFO/CAFO

Wisconsin currently addresses AFOs under 1000 AU with direct discharge via a “man made conveyance” or where the waters of the state flow through a feedlot and livestock come in direct contact with the waters through the NR 243 Notice of Discharge (NOD) program. EPA may not accept NR243 as a “functionally equivalent” program because implementation is currently based on receiving a complaint from the public and is not enforceable unless cost-sharing is available to the livestock operation. The proposed revision of NR243 will remove the cost-share requirement for operations 300 to 999 AU in size. Operations over 1000 AU are required to have a Wisconsin Pollutant Discharge Elimination System (WPDES) permit and are not eligible for cost-sharing.

New WPDES permits and expiring permits expanding 25% or more and seeking re-issuance that are located in watersheds draining to surface waters with identified water quality impacts associated with nutrients will have to address P in nutrient management plans to the extent that there is no further impairment of the 303(d) listed water body. New permittees in outstanding/exceptional resource waters shall control P loadings to the extent that background quality of the water body is not altered.

Any livestock operation, including those with less than 1000 AU, may be permitted if the permitting authority determines that an operation, or an aggregate of operations significantly contribute to nonattainment of the designated use for a water body. Again Wisconsin currently utilizes the NR 243 NOD program to address these situations.

Wisconsin's response to the AFO Strategy has been to propose a "Functionally Equivalent" program based on the following concepts:

Develop strategies to voluntarily address farms with 300 to 999 AU that meet the criteria for "prohibited conditions" or "impact caused by an aggregation of operations".

Utilize the Wisconsin Nonpoint Source Watershed Program to restore waters listed as impaired on the Wisconsin 303(d) report to EPA.

Implement the Agricultural Performance Standards developed as a part of the DNR/DATCP Program Redesign :

- No overflow of manure storage structures
- No unconfined manure piles in the water quality management area
- No direct runoff from a feedlot or stored manure into the waters of the state.
- No unlimited access by livestock to waters of the state in a location where high concentrations of animals prevent the maintenance of adequate sod cover.

WI-NRCS 590 Revision

WI-NRCS has been directed to revise the NRCS 590 Nutrient Management standard to address phosphorus. This work has begun through the Standards Oversight Council (SOC) process and the team's goal is to finish the revision by May 2001. Other states finished with the revision have used a version of the Phosphorus Index (PI) to address phosphorus.

Wisconsin TMDLs

EPA is developing enforcement authority under the concept of TMDLs in watersheds that have been listed as impaired on Wisconsin's 303(d) report to EPA. Large-scale models such as the Surface Water Assessment Tool (SWAT) take into account land use, soil types, slopes, climatic factors and more on a large-scale basis to determine pollutant loading to a water body. Response models such as the Wisconsin Lake Management Suite are used to determine what loading reductions must be made to reach certain levels of chlorophyll a or Secchi depth readings. One can then use the large-scale model to determine what practices or BMPs will produce the desired reduction in loading.

A) Squaw Lake- WI's First TMDL

Nonpoint source dominated impairment

Addressing P loading through wetland restoration; other options include nutrient management, manure storage, limiting soil loss

B) Efforts to address issue

Agricultural Performance Standards

Pollutant Trading Initiatives Under Development

- Fox, Upper and Lower Rock, and Red Cedar Rivers
- DNR approved contract between industry/municipality and farmers
- For every pound of P reduction required at a point source, 2 lb must be prevented from leaving the land

590 revision