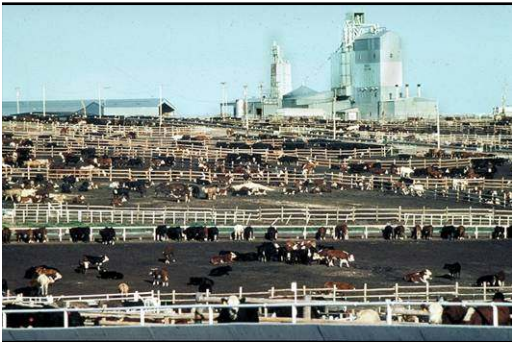




Concentrated Animal Feeding Operations



Ag101 Training

Presented by K.R. Young – EPA Region 3

Beltsville, Maryland

August 21, 2008



EPA Animal Feeding Operation (“AFO”)

Animal Feeding Operation (AFO) - A lot or facility (other than an aquatic animal production facility) where both of the following conditions are met:

- 1) Animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12 month period, and
- 2) Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

[40 Code of Federal Regulation (CFR) Part 122.23(b)(1)]

Which AFOs are defined as Concentrated Animal Feeding Operations? (“CAFO”)

AFOs are CAFOs if they meet the regulatory definition [40 CFR 122.23 (b) (4) or (6)] of a Large or Medium CAFO or have been designated as a CAFO on a case-by-case basis [40 CFR 122.23 (c)] by the NPDES permitting authority or by EPA.

Large CAFO Thresholds

INDUSTRY THRESHOLDS	
Animal Type	Large CAFO
Dairy Cows	700
Veal Calves	1,000
Beef Cattle	1,000
Swine	2,500 (55 lbs or more) 10,000 (under 55 lbs)
Horses	500
Sheep or Lambs	10,000
Turkeys	55,000
Chickens, liquid manure	30,000
Chickens, other than a liquid manure system	125,000 (not laying hens) 82,000 (laying hens)
Ducks	30,000 (except liquid manure system) 5,000 (liquid manure system)

Medium CAFO Thresholds

INDUSTRY THRESHOLDS	
Animal Type	Medium CAFO
Dairy Cows	200 - 699
Veal Calves	300 - 999
Beef Cattle	300 - 999
Swine	750 - 2,499 (55 lbs or more) 3,000 - 9,999 (under 55 lbs)
Horses	150 - 499
Sheep or Lambs	3,000 - 9,999
Turkeys	16,500 - 54,999
Chickens, liquid manure	9,000 - 29,999
Chickens, other than a liquid manure system	37,500 -124,999 (not laying hens) 25,000 - 81,999 (laying hens)
Ducks	10,000 – 29,999 (except liquid manure system) 1,500 – 4,999 (liquid manure system)

NPDES Regulations for CAFOs

Plus the facility must meet one of the two discharge criteria below. The criteria are applicable only to the production area of the AFO and are not applicable to land areas where manure and waste water are applied.

Pollutants are discharged into waters of the US through a man-made ditch, flushing system, or other similar man-made device;

Pollutants are discharged directly into waters of the US which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.

Definition of Production Area

Production area means that part of an AFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas.

With subsequent definitions of animal confinement, manure storage, raw materials and waste containment areas found at;

[40 CFR 122.23 (b) (8)]

Region 3: Estimated CAFOs

National: 15,400

Large: 10,700

Medium: 4,700

Region 3: 910 ~ 6%

Large: 550

Medium: 360

R4: 3272: 21%

R6: 1701: 11%

R7: 3238: 21%

R10: 523: 3%



PA: 462



VA: 204



MD: 126

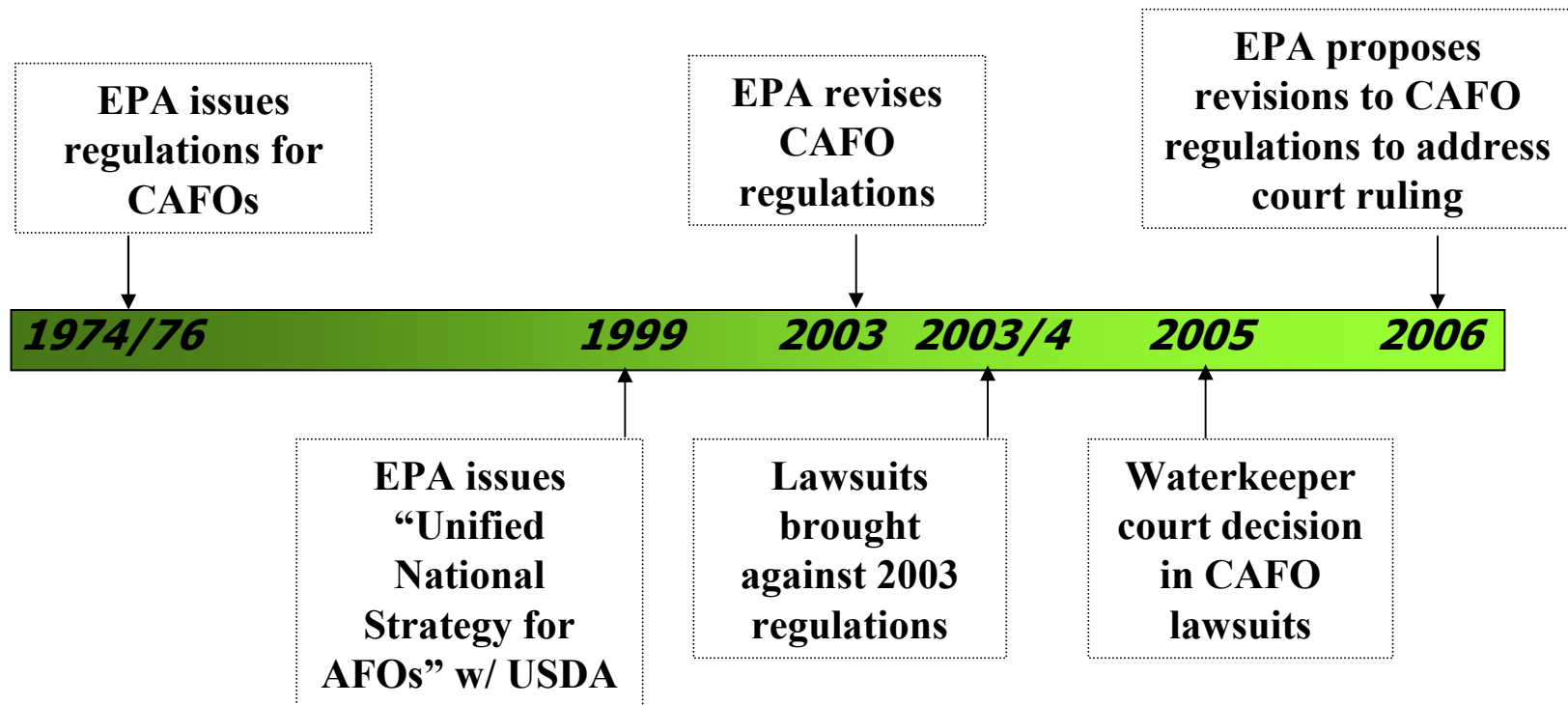


DE: 86



WV: 32

Regulatory History for CAFOs



Court Decision in Waterkeeper Case

**February 28, 2005 -- 2nd Circuit
Court of Appeals (New York)**

Unaffected by the Court:

Production area “No Discharge”
requirement;

NMP requirements for land application;

Agricultural stormwater definition:

Regulation of runoff from land application
areas

Aspects of Waterkeeper decision requiring EPA action

The Court vacated:

The 2003 rule requirement that all CAFOs need permits or to demonstrate no potential to discharge;

Issuance of NPDES permits without permitting authority and public review of NMPs, and incorporation of NMP terms into the permit.

The Court remanded for further explanation:

Applicability of Water Quality Standards
New Source standards for veal, pork & poultry
Best Conventional Technology (BCT) for pathogens

Duty to Apply

The Court vacated:

The requirement that all CAFOs must apply for a permit

EPA proposed action:

Replace with requirement that CAFOs that either *discharge or propose to discharge* must apply for permit

Emphasize in preamble that no unpermitted discharges from the production area are allowed

CAFO Duty to Apply:

Factors to consider

Operator needs to decide whether to seek permit coverage. CAFOs falling into one of the following categories have a higher likelihood of discharging and should consider seeking permit coverage.

Where a CAFO:

is located in close proximity to waters of the United States with land classified in USDA Land Use Capability Classes III – VIII,

has a production area not designed and operated for zero discharge,

land applies but does not implement nutrient management planning designed to ensure any runoff from land application qualifies for the agricultural stormwater exemption,

had a discharge in the past and has not corrected the factors that caused the discharge to occur.

Duty to Apply: Agricultural stormwater exemption

NPDES permit is not needed if the only discharge from a CAFO is due to agricultural stormwater:

Agricultural stormwater is defined at 122.23(e) as a precipitation-related discharge from a land application area where an operator land applies in accordance with nutrient management planning requirements outlined in 122.42(e)(1)(vi)-(ix)

EPA is seeking comment on the relationship between the agricultural stormwater exemption and need to adhere to State technical standards for land application

Nutrient management planning and documentation will be necessary to support an operator's claim to the exemption

Nutrient Management Plans

The Court vacated:

Issuance of NPDES permits without Permitting Authority and public review of NMPs, and incorporation of NMP terms into the permit

EPA proposed action:

NMP requirements unchanged from 2003 rule

Establish a process for NMP public review and comment

Establish a process to incorporate terms of the NMP into the permit and also make available for public review and comment

Address how to modify a permit, including a general permit, when a facility's NMP changes

Highlights of the CAFO Rule

Nutrient Management Plan –Permitted CAFOs must have NMPs implemented by 12/31/06: Nine Critical Components

Ensure adequate storage of manure/litter&process wastewater

Ensure proper mgmt of dead animals

Ensure clean water is diverted from the production area

Prevent direct contact of animals with US waters

Prevent inappropriate introduction of chemicals into manure/litter, stormwater storage

Identify site –specific BMPs (setbacks) to control nutrient loss

Identify manure and soil protocols

Identify protocols for land application of manure/litter/wastewater- technical nutrient mgmt

Maintain proper record keeping

NMPs: Permitting process

Individual Permit Process

NMP submitted with application prior to permit issuance

Terms of NMP incorporated into permit through normal public review process

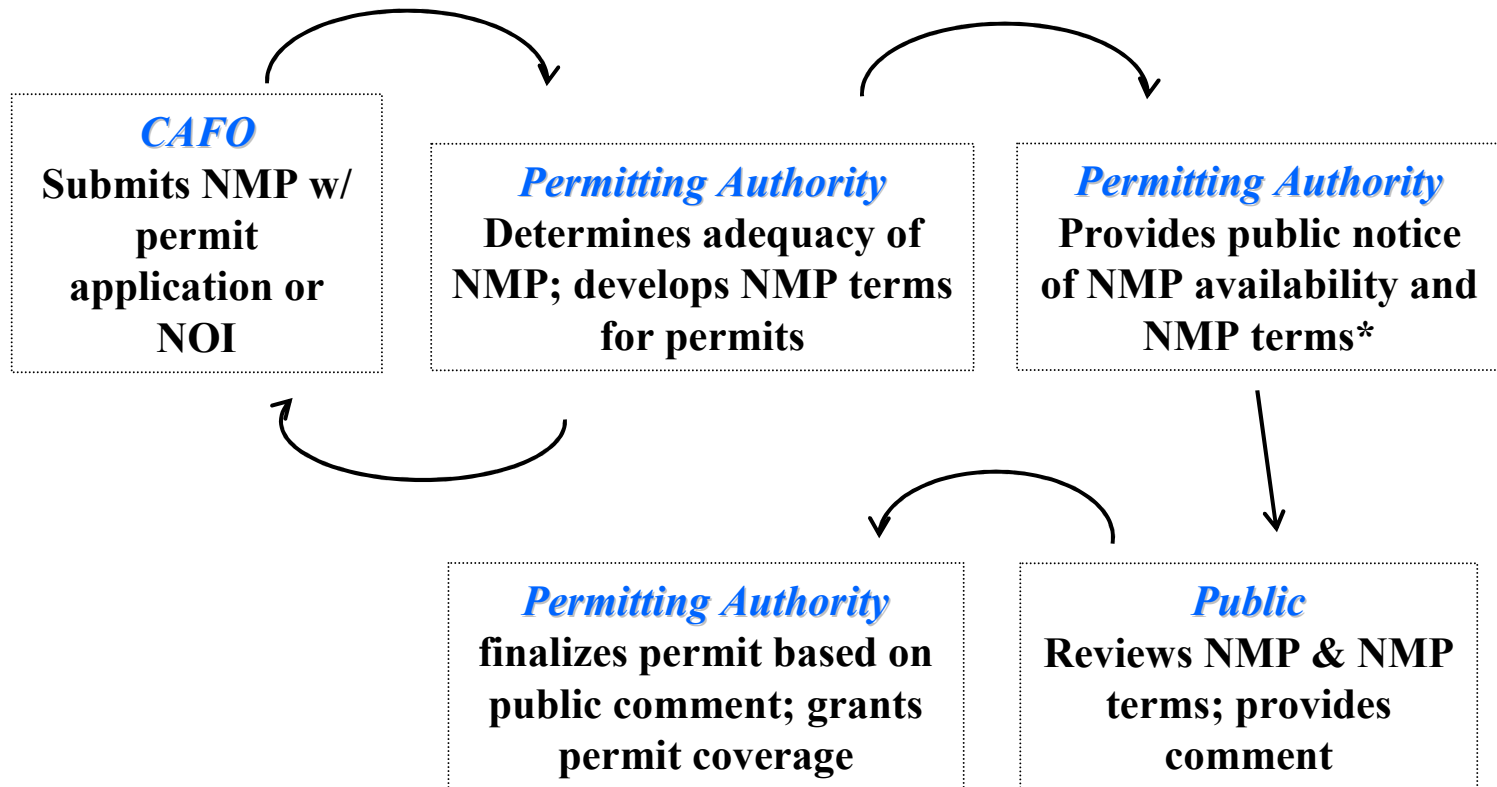
General Permit Process

Permitting Authority issues General Permit

CAFO submits Notice of Intent (NOI) with NMP

Process modified to allow terms of NMP to be reviewed and incorporated into general permit upon permit coverage

NMPs: Adding NMP provisions to General Permits



- * Process and timeframe for public notice of NMP is established by Permitting Authority

NMPs: Changes to NMPs after permit coverage

Proposed approach recognizes dynamic nature of NMPs

Regulatory language describes changes that warrant public notice; provides examples

Regulatory language describes process for NMP-related modifications

NMPs: Flexibility

NMPs can be developed to accommodate typical variations

Flexibility built into NMP would allow changes to practices without modifying the NMP

Operators can build in contingencies and options to reduce the need for modifications

NMPs: Permit modifications related to minor changes

Some changes at a facility would require modifications to the NMP and permit

Proposal provides examples of minor changes with no need for public review

Revised NMP would be submitted to Director and permit modified

NMPs: Permit modifications for “Substantial” changes

Substantial changes to the NMP require public review.
Examples include:

Increase in runoff

Increase in the rate of nutrients land applied

Significant change in the nutrient balance

Changes in handling, storage, treatment, or land application

Significant increase in the number of animals

Significant reduction of manure, litter, or process wastewater transferred

Addition of land application areas

NMPs: 180-Day Allowance for Substantial Changes

For “substantial changes” to NMPs, EPA is proposing permit authorities may grant CAFOs up to 180 days to proceed with implementing the change to the NMP, provided that:

The approval is temporary

The CAFO demonstrates that the NMP change would not cause increased runoff

The permit authority agrees with the CAFO’s claim of no increased runoff

The permit authority would need to notify the public and add the expedited decision to the public record

Changes would need to undergo public review prior to completion of the 180-day period

NMPs: NMP template

EPA is exploring the feasibility of using a template to facilitate NMP processing

Seeking public comment

Possible uses include:

- Template for operator to complete

- Template for incorporation into the NPDES permit

- Guide for operator development or permit writer review

Draft template available in public docket and EPA website

Key Remand Issues for Proposed Rule

Court remanded for further explanation:

Applicability of Water Quality
Standards for production area;

New Source standard for veal, pork &
poultry;

Best Conventional Technology (BCT)
for pathogens.

Water Quality Standards for Production Area

Court agreed with EPA that WQBELs are
unavailable for precipitation-related land
application discharges

Proposal clarifies that WQBELs might apply to:

Non-precipitation-related land application discharges

OR

Production area discharges

New Source Standards for Swine, Veal, and Poultry

The Court upheld:

- The no discharge requirements for new sources

The Court remanded:

- The compliance alternative that a lagoon designed for the 100-year storm is equivalent to no discharge

- The voluntary “Superior Alternative Performance Standards” provision

EPA proposal:

- Provide a process for a CAFO to model their site-specific open containment system for no discharge

- Demonstrate the system is a no discharge system

Best Conventional Pollutant Control Technology (BCT) for Pathogens

The Court directed EPA:

To evaluate pathogens in the context of BCT

EPA's BCT methodology:

Methodology answers the question of whether it is **“cost reasonable”** for industry to control conventional pollutants at a level more stringent than Best Practicable Technology (BPT) already requires.

Best Conventional Pollutant Control Technology for Pathogens

EPA proposal:

- BCT methodology:
 - Cost Test Part 1: POTW test
 - Cost Test Part 2: industry test
- All candidate technologies failed the 2-part Cost Reasonableness Test
- No new requirements for pathogens

CAFO Rule Timeline

2003 February 12	CAFO Final Rule
2005 February 28	<i>Waterkeeper</i> Decision
2006 June 30	CAFO Proposed Rule
2008 March 7	CAFO Supplemental Proposed Rule
2008 Summer	Projected Completion of Revised CAFO Final Rule

Mid-Atlantic State Status

- PA: EPA approved : March 14, 2006
- DE : State approved program - 8 CAFO permits issued
- MD: Draft program developed, EPA provided comments January 2005
- VA: Operating a State VPA program- has issued 134 permits for large CAFOs
- WV: Draft CAFO regulations pending EPA's revisions.

Agricultural Snapshot

- Agricultural land use in the Region is greater than 21 million acres
 - 28.4% total land use in the region
 - DE 46.3% agricultural
 - MD 35.5% agricultural
 - PA 25.1% agricultural
 - VA 33.0% agricultural
 - WV 22.7% agricultural
 - poultry and livestock
 - crop production
 - strong economic drivers



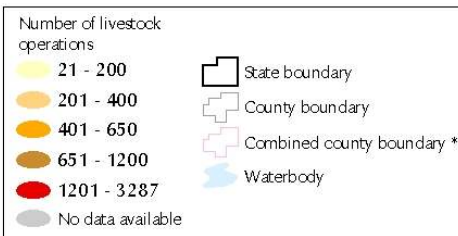
Top Agricultural Commodities in Region 3

STATE	COMMODITIES and Cash Receipts (in millions)				
DE	Broilers (507)	Greenhouse/ Nursery (29)	Soybean (26)	Dairy Products (26)	Chicken Eggs (15)
MD	Broilers (530)	Greenhouse/ Nursery (256)	Dairy Products (203)	Cattle and Calves (65)	Soybean (65)
PA	Dairy Products (1,706)	Cattle and Calves (369)	Mushrooms (319)	Greenhouse/ Nursery (306)	Chicken Eggs (25)
VA	Broilers (474)	Cattle and Calves (325)	Dairy Products (293)	Turkeys (221)	Greenhouse/ Nursery (157)
WV	Broilers (132)	Cattle and Calves (76)	Dairy Products (41)	Turkeys (41)	Chicken Eggs (25)



Number Of Livestock[†] Operations

County manure data (1997)
for US EPA Region 3



* Some counties have been combined to protect confidentiality
† Livestock include beef cattle, dairy cattle, swine, and poultry

Sources:

County manure data

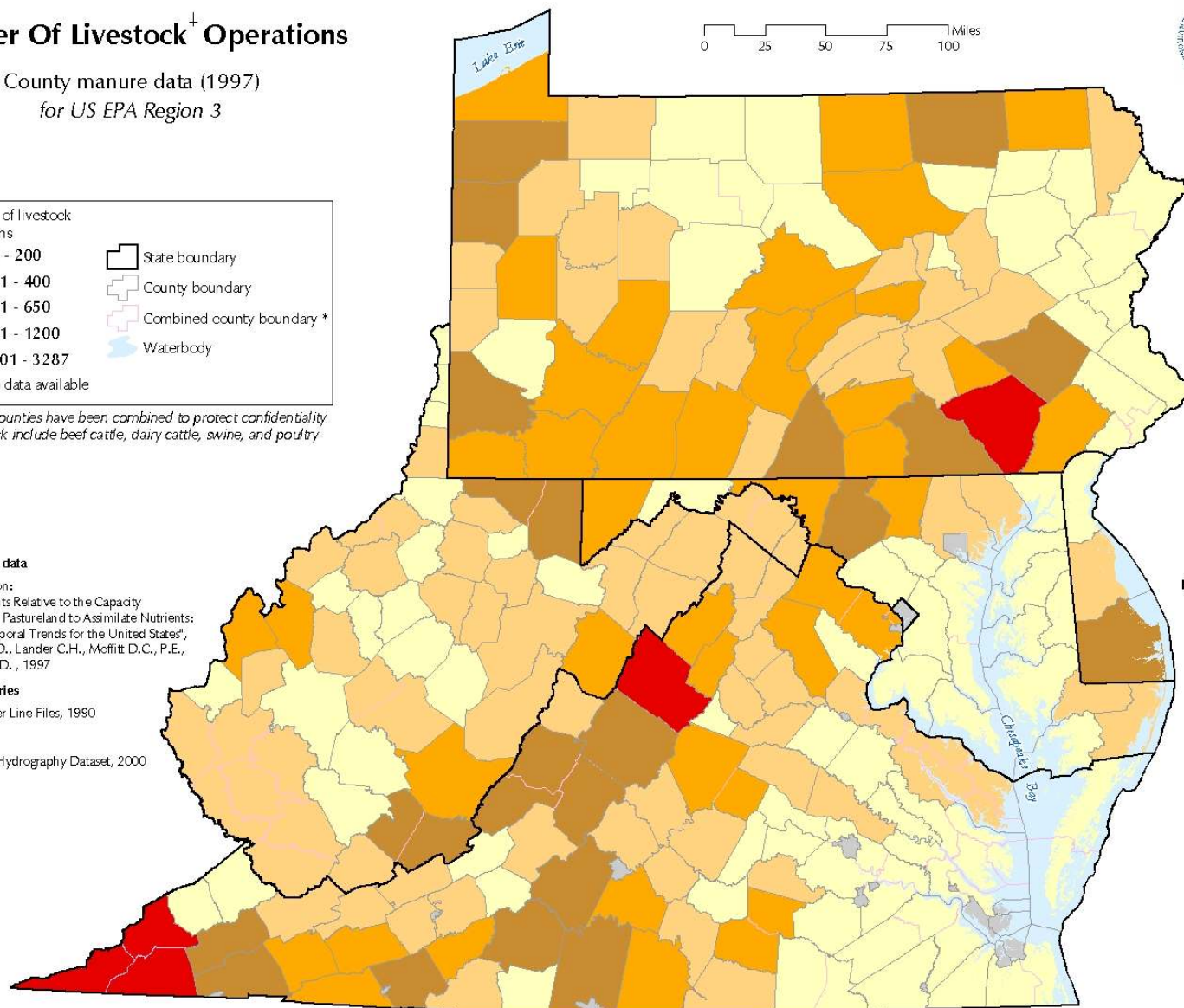
USDA Publication:
"Manure Nutrients Relative to the Capacity
of Cropland and Pastureland to Assimilate Nutrients:
Spatial and Temporal Trends for the United States",
Kellogg R.L., Ph.D., Lander C.H., Moffitt D.C., P.E.,
Collenon N, Ph.D., 1997

County boundaries

U.S. Census Tiger Line Files, 1990

Hydrology

USGS National Hydrography Dataset, 2000



Pounds Of Manure Nitrogen As Excreted From Confined Livestock[†]

County manure data (1997)
for US EPA Region 3

Pounds of manure nitrogen

- 0 - 1500000
- 1500001 - 4000000
- 4000001 - 7300000
- 7300001 - 16000000
- 1600001 - 50335403
- No data available

- State boundary
- County boundary
- Combined county boundary *
- Waterbody

* Some counties have been combined to protect confidentiality

† Livestock include beef cattle, dairy cattle, swine, and poultry

Sources:

County manure data

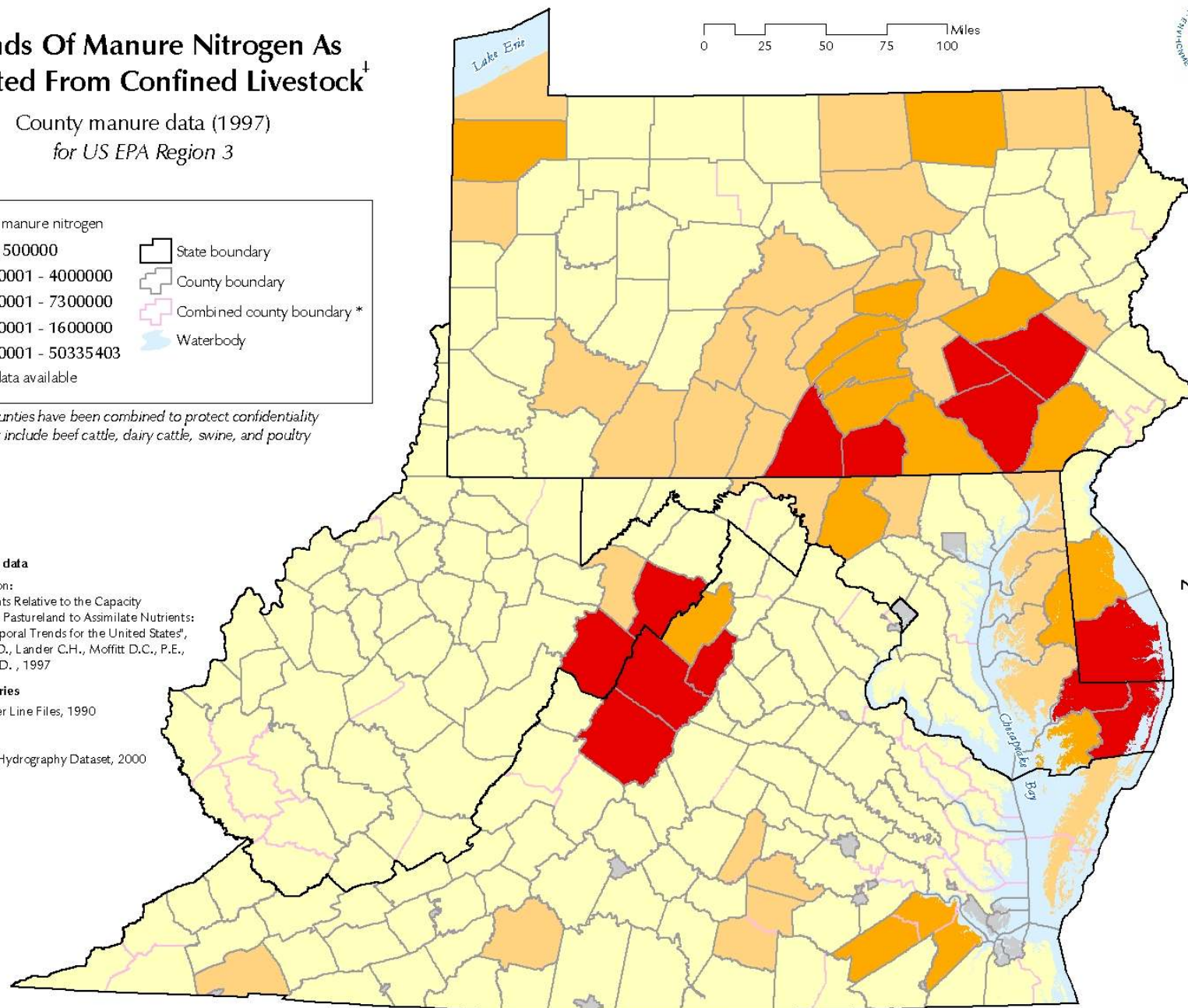
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County boundaries

U.S. Census Tiger Line Files, 1990

Hydrology

USGS National Hydrography Dataset, 2000



Pounds Of Manure Phosphorus As Excreted From Confined Livestock[‡]

County manure data (1997)
for US EPA Region 3

Pounds of manure phosphorus

0 - 375000

375001 - 1000000

1000001 - 2000000

2000001 - 5000000

5000001 - 15828720

⬜ No data available

⬜ State boundary

⬜ County boundary

⬜ Combined county boundary *

⬜ Waterbody

* Some counties have been combined to protect confidentiality

‡ Livestock include beef cattle, dairy cattle, swine, and poultry

Sources:

County manure data

USDA Publication:

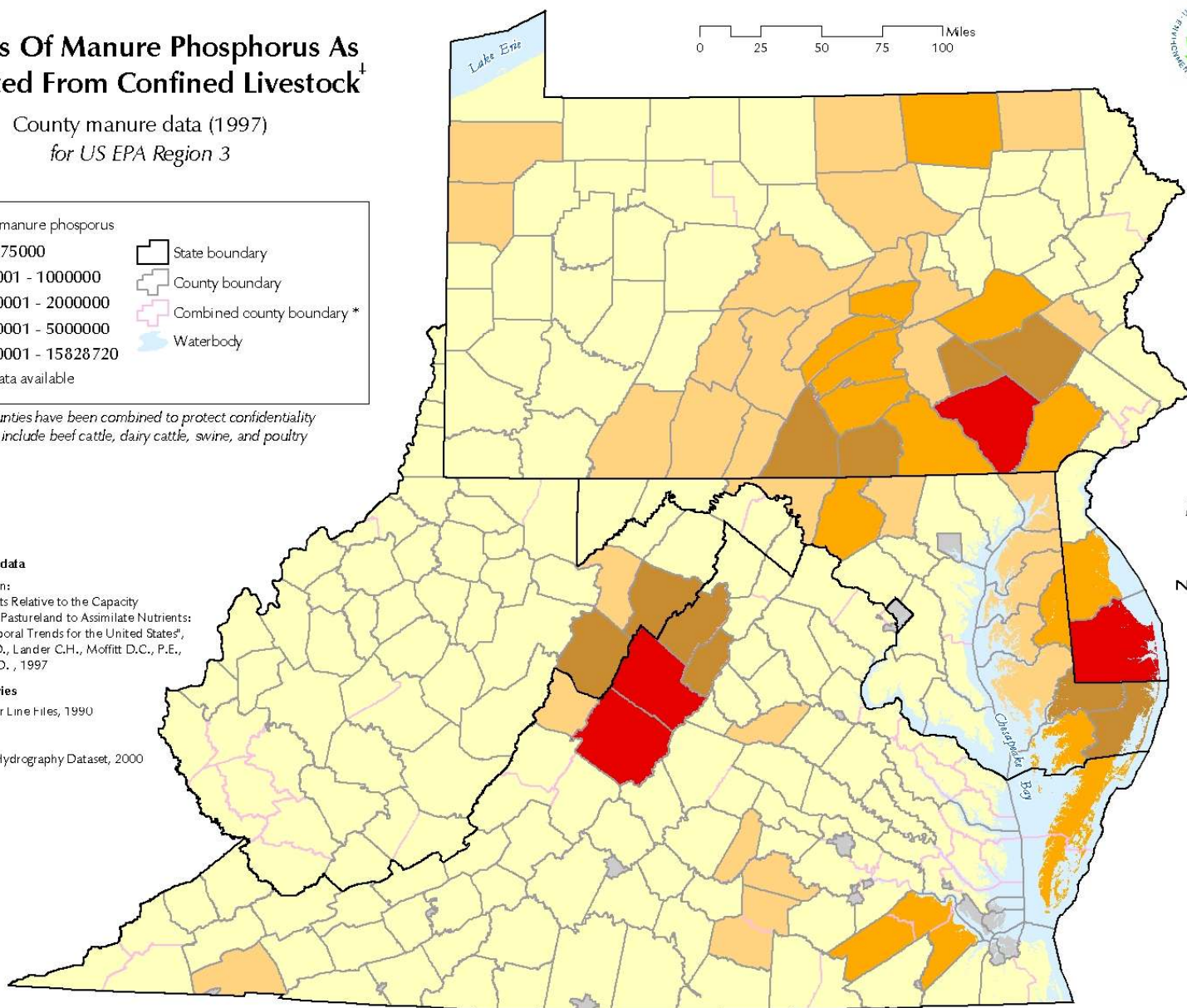
"Manure Nutrients Relative to the Capacity of Cropland and Pastureland to Assimilate Nutrients: Spatial and Temporal Trends for the United States", Kellogg R.L. Ph.D., Lander C.H., Moffitt D.C., P.E., Colleen N. Ph.D., 1997

County boundaries

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Hydrology

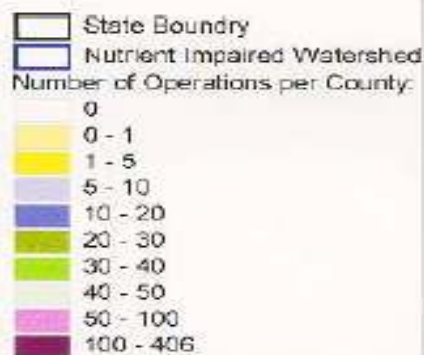
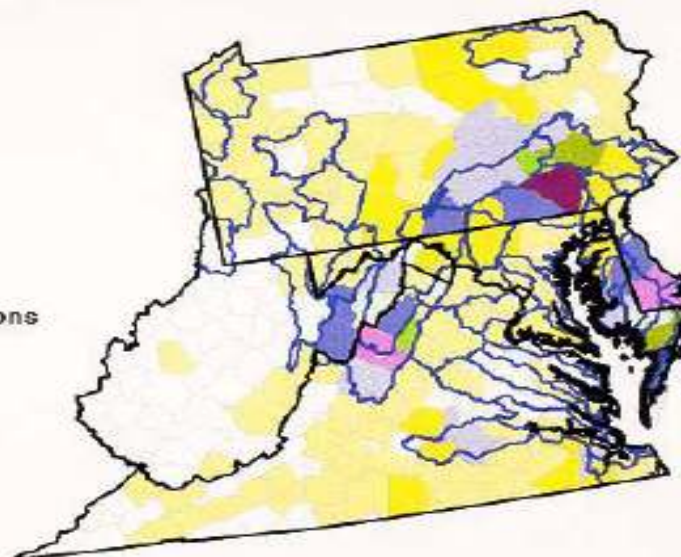
USGS National Hydrography Dataset, 2000



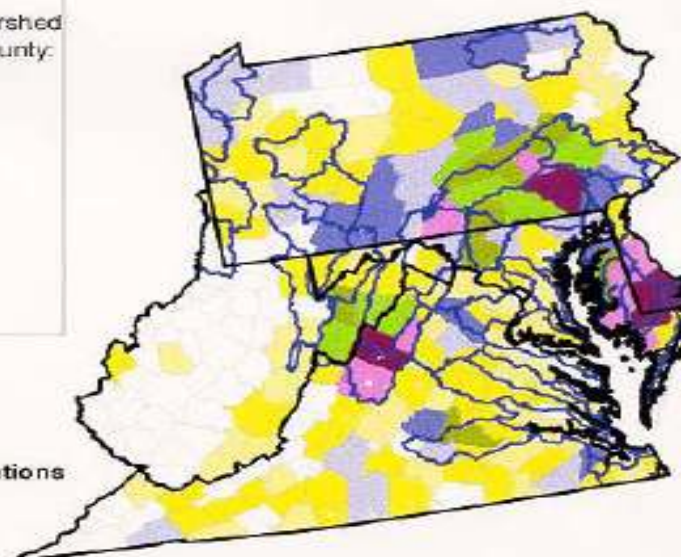
Number of AFOs in EPA Region 3



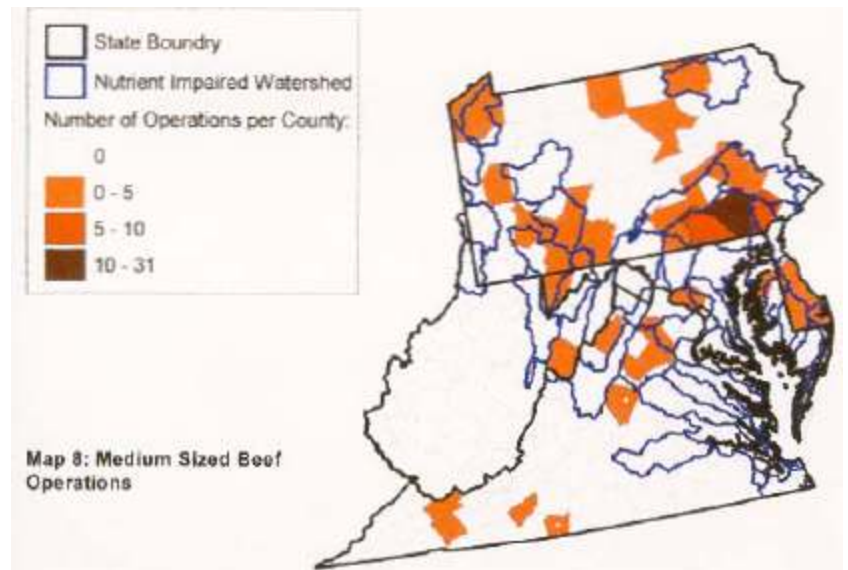
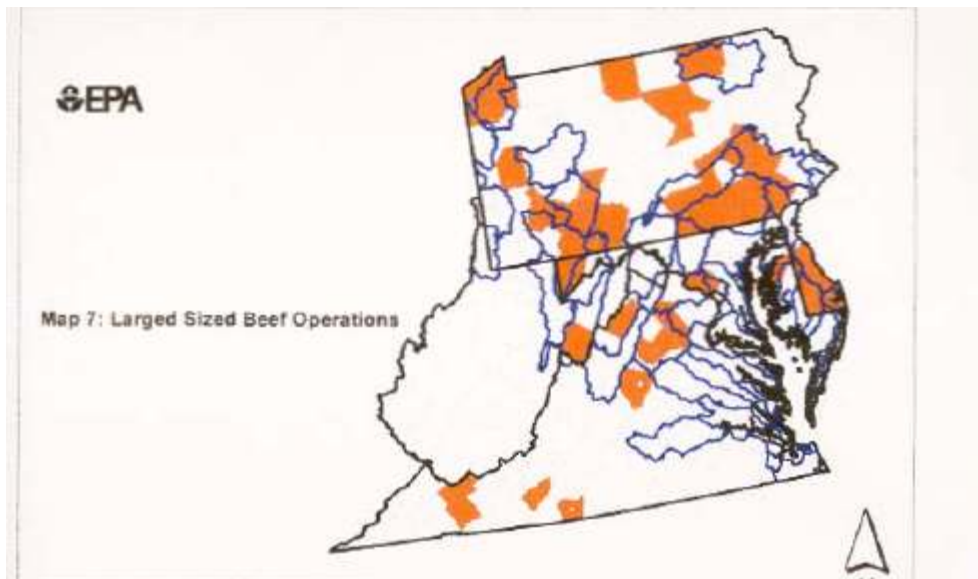
Map 9: Larged Sized Operations



Map 10: Medium Sized Operations



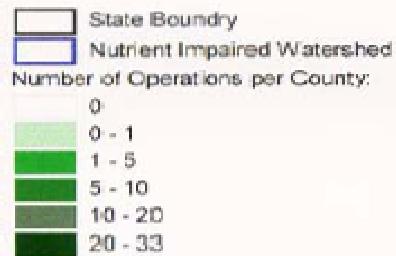
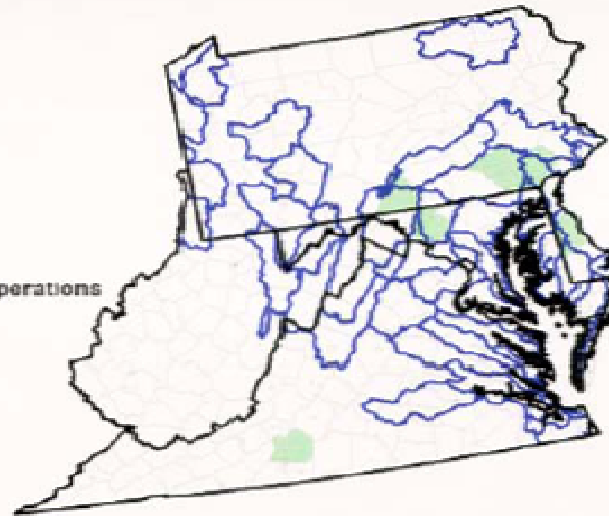
Number of Large and Medium Beef AFO in Region 3



Number of Dairy AFOs in EPA Region 3



Map 1: Large Sized Dairy Operations



Map 2: Medium Sized Dairy Operations

