

State Approaches to Reducing Agricultural Nutrient Impacts on Water Quality in the United States

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Research Methods

- 50 state review of laws, regulations, policies, programs, incentives that require or encourage reduction of non-point water quality impacts from agricultural nutrients.
- State-based approaches that result from state government action.

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State approaches to reducing agricultural nutrient pollution	
<i>Type of approach</i>	<i>Definition</i>
1. Statewide reduction strategies	A comprehensive planning effort or program to address nutrient reduction from a coordinated statewide perspective.
2. Nutrient management plans	Written plans for managing the amount, source, placement and timing of plant nutrients and soil amendments.
3. Conservation programs	Programs that encourage or require farmers to adopt conservation practices on the land.
4. Applicator certification	Knowledge standards for individuals who apply agricultural nutrients on the land.
5. Application restrictions	Limitations on how, when or where agricultural nutrients may be applied to land.
6. Informational tools	Tools to assist with determining the proper conditions for utilizing agricultural nutrients.
7. External partnerships	Efforts to collaborate with private and non-profit partners on nutrient reduction activities.

Nutrient Management Plans

- Voluntary NMPs
- Mandatory NMPs
 - Maryland: Required for all farms grossing +\$2500 a year or livestock producers with +8,000 lbs. live animal weight.
- Certification for NMP writers
- Recordkeeping requirements
- Periodic revisions

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Conservation Programs

Maryland Agricultural Water Quality Cost-Share Program

- Applies to farmers in areas with large amounts of agricultural runoff.
- Funds for installing cover crops, waste treatment lagoons, fencing, riparian buffers, filter strips, grassed waterways, terraces, wetland restoration
- Eligibility is dependent upon potential of water quality improvement and economic return to the operator.

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Conservation Programs

Minnesota Buffer Law

- Perennial rooted vegetative buffer required for lands adjacent to waters identified in buffer protection zone map.
 - 16.5 to 50 feet, depending upon type of water.
- Farmers may use approved alternate practices to substitute for buffer requirement.
- Complaint and enforcement process with penalties for non-compliance.
- Cost sharing available.

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Applicator Certification

Applicators for hire

- Indiana: must pass examination on planning, storage, equipment, transportation, techniques, environmental concerns.

Farmer applicators

- Ohio: educational program or test on proper time, place, amount, application, storage and handling if applying on more than 50 acres of agricultural production land.

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Application Restrictions

Indiana Fertilizer Use Rule

- Applications of +10 cubic yards or +4,000 gallons of commercial fertilizer or manure for agricultural crops.
- Staging requirements, application setbacks, restrictions for highly erodible land, frozen or snow covered ground, monitoring requirements.

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Informational tools

Wisconsin Runoff Risk Advisory Forecast

- Map of state color coded with high to low risk over 3 day period.

Washington Application Risk Management System

- Precipitation forecasts at regional and field levels.
- To be used in conjunction with NMP to determine runoff risks and setbacks.

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External Partnerships

Illinois Nutrient Research and Education Council

- Guided by council of farmers, agribusinesses, environmental, agencies, research stations
- Pollution research, education programs, project installations financed by \$1/ton fee on fertilizer.

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Initial Conclusions

More activity in states with significant water resources and/or higher rainfall.

- Great Lakes, Chesapeake Bay, Mississippi River

Most common responses thus far are costly:

- Conservation practices
- Nutrient Management Plans
 - Are NMPs subject to judicial scrutiny?

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Initial Conclusions

Few solutions include monitoring and assessment components.

- Need for data.
- Monitoring and assessment occurring independent of laws, regulations, programs.

National landscape is outwardly disjointed.

- Scattered among different agencies.
- External not collaborating with internal.
- Independent of statewide or watershed planning.

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