

Michigan's Approach to Agricultural Water Protection



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Why does it matter?

- Great Lakes represent 20% of world's available fresh water
- Every single watershed in Michigan drains to a Great Lake
- Drinking water source for 40M U.S. and Canadian citizens
- Water tourism in Michigan
 - \$1B in coastal tourism
 - \$3.9B in recreational boating
 - \$2B in recreational fishing
 - \$140M in kayaking/canoeing
- The Great Lakes are the rarest and most valuable commodity on earth!



History of the Environmental Push

- 1977- Federal Clean Water Act
 - Point sources leading cause of water pollution
 - Unlawful to discharge to US waters
 - NPDES Permits- Point Sources
- 1981- Michigan Right to Farm Act
 - Challenged in court- '86-87
 - Challenge overturned- GAAMP's
- 1988- Generally Accepted Agricultural Management Practices (GAAMP's)



Recent Legislation

- Great Lakes Water Quality Agreement- 2015
 - Set goal of 40% nutrient reduction by 2025
 - Signed by Ohio, Michigan and Ontario
- Domestic Action Plan (DAP)
 - Michigan's plan to achieve 40% reduction
 - MDARD, EGLE and DNR plan
- Adaptive Management Plan (AMP)
 - Evaluative measurement of DAP
 - Provides feedback loop to change DAP methods



Michigan Focus Areas

- WLEB
 - Chronic algal blooms
 - Drinking water source for over 14 million people
 - Predominantly agriculture use
 - 70% of nutrient loading from agriculture
- Saginaw Bay
 - Michigan's largest watershed
 - Encompasses 22 counties (25%) of the state
 - Highly agricultural use (5.5M acres, 45% agricultural lands)
 - EGLE has filed with EPA to declare impaired for nutrients
- Lake Macatawa
 - Closed watershed- internal loading-predominant ag lands
 - Haven't acted yet



Michigan's Agricultural Programs

- Right To Farm (RTF)- Mike Wozniak
 - Nuisance more than environmental
 - Complaint driven
- Michigan Agriculture Environmental Assurance Program (MAEAP)
 - Environmental focus-water quality
 - Holistic farm view-comprehensive
 - Legislated certainties
- NPDES Permits- EGLE-CAFO's
 - General
 - Individual



MDARD's Programs-Why Voluntary over Regulatory?

- Variability in agriculture
- Farm specific
- Relationships-expectations
- Changes mindset- lasting behavior
- Producers achieve beyond minimums- carrot or stick?



How do we implement Conservation

- MAEAP is our main tool
 - No cost for farmers to participate
 - Comprehensive evaluation of farm practices
 - 42 Conservation District Technicians
 - Boots on the ground
 - Provide individual technical assistance to farmers
 - Work through our risk assessments to evaluate practices
 - Help find cost share opportunities
 - Help farms achieve MAEAP verification
 - Farms receive legislated certainties
 - Program is built on relationships!



Tools we Use?

- Partnerships (CD's, Ag/Commodity Groups NGO's)
- USDA NRCS EQIP funding
- Robust grant opportunities
 - Grant coordinator on staff
 - MDARD acts as lead or sub-awardee on partner grants
 - Feed grants through local CD's to implement BMP's
 - STRAND
 - Erb Farmer to Farmer Grant
 - RCPP
 - CREP-through USDA FSA
- \$25M state appropriation for the WLEB- Outreach, Research, Demonstration and Cost share



Recent and Upcoming Implementations

- Watershed modeling-EWG-Agricultural Conservation Planning Framework (ACPF) tool
- Increased tributary monitoring/sampling
- Focused watershed implementation approach
- Edge of Field Research
- Intensified inventory of practice implementation



Questions?



What is the Michigan Agriculture Environmental Assurance Program (MAEAP)?

- Partnership

- Farmers
- Industry Groups
- Conservation
- Agency
- University



- Directed by Advisory Committee-Partner/Industry Representation



MAEAP Structure

- Four Systems
 - Livestock
 - Farmstead
 - Cropping
 - Forest, Wetlands and Habitat (FWH)
- Built on existing, recognized programs and standards
- Built on education, complimented by technical assistance
- Voluntary, confidential, non-regulatory
- Every farm, every size, every commodity





FOUR-SYSTEM/THREE-PHASE PROGRAM

Phase **1**

EDUCATION

Phase **2**

ON-FARM RISK
ASSESSMENT

Phase **3**

THIRD-PARTY
VERIFICATION

PHASE 2 SYSTEMS



FARMSTEAD SYSTEM
Farm*A*Syst & Greenhouse*A*Syst



CROPPING SYSTEM
Crop*A*Syst & Greenhouse*A*Syst



LIVESTOCK SYSTEM
Livestock*A*Syst & CNMP



**FOREST, WETLANDS &
HABITAT SYSTEM**
Forest, Wetlands, and
Habitat*A*Syst

MAEAP Codified, P.A. #1 & 2, 2011

- Minimized fines beyond resource reparations if following MAEAP standards
- Defined “act of God” for rain events
- TMDL requirements considered met
- Farms **MUST** be verified in ALL applicable systems to receive these protections



MAEAP Funding

- 2 sources of funds for MAEAP
 - General Funds (GF)- \$900,000 annually
 - Freshwater Fund- legislative lifespan
- Freshwater fund
 - Fee of \$270 placed on the registration of all pesticides used in Michigan. Annual fee.
 - \$1/ton fee on all agricultural fertilizers. NOT soil amendments such as lime.
 - Generates approximately \$6.2M annually



Domestic Action Plan (DAP)

- Document required by Great Lakes Water Quality Agreement (2015)
 - Requires states/provinces to provide a plan to address nutrient loading to Great Lakes.
 - Addresses both point and non-point pollution
 - Requires 40% loading reduction from 2008 base levels by 2025
- Adaptive Management Plan (AMP)- component of DAP, 2-year revolving cycle-track, analyze, course correction



Environmental Outcomes on MAEAP verified farms in the WLEB

Practice Implementation	FY 19 Verifications	FY 18 Verifications	FY17 Verifications	FY16 Verifications	FY 15 Verifications	WLEB Sums FY15-19 (5 year)
Acres of Conservation Tillage	14,397	11,200	4,925	20,573	19,155	70,250
Acres of Cover Crops	11,480	2,318	1,671	6,480	5,542	27,491
Acres of NMP/CNMP	49,100	23,533	15,356	36,862	38,737	163,588
Linear Feet Filter Strips	285,627	99,122	128,327	112,712	267,023	892,451
Total, Lbs/Year Phosphorus Reduction	116,627	64,311	36,677	54,248	57,497	329,360
Total, Tons/Year Sediment Reduction	72,502	34,652	22,985	96,432	94,607	321,178
Total Lbs/Year Nitrogen Reduction	235,643	168,857	73,181	236,986	201,119	945,786



Environmental Outcomes on MAEAP verified farms Statewide

	FY19 Verifications	FY18 Verifications	FY17 Verifications
Practice Implementation			
Acres of Conservation Tillage	129,440	135,303	56,670.60
Acres of Cover Crops	63,789	37,672	18,162.50
Acres of NMP/CNMP	282,335	216,209	109,997.85
Linear Feet Filter Strips	922,422	894,639	548,257.49
Total, Lbs/Year Phosphorus Reduction	673,535	547,049	283,487.00
Total, Tons/Year Sediment Reduction	414,714	318,337	163,526.23
Total, Lbs/Year Nitrogen Reduction	1,391,050	1,264,363	669,337



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Michigan Farmers are Proud to be Recognized for their Stewardship!

