OF DEAD ZONES & DRINKING WATER:

FARMING’S WATER QUALITY CHALLENGES

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WATER QUALITY CHALLENGES

- Gulf of Mexico Hypoxia
- Des Moines Waterworks Lawsuit
- Reducing Nutrient Losses from farming
**Gulf Hypoxia & The Mississippi River Basin**

- Third largest drainage basin in the world; Drains 41% and 31 of the 48 contiguous states; 242 million acres of cropland

- 242 million acres of cropland; $54 billion in agricultural products and 92% of the nation’s farm exports.

- Hypoxia or dead zone: over 5,000 square miles in 2014.

- Agriculture may contribute 70% of the delivered nitrogen and phosphorous; estimated that Nitrogen losses could be 17 to 41 lbs. N per acre.
Des Moines Waterworks Lawsuit

- Clean Water Act: agricultural storm water discharge is a nonpoint source; not subject to regulation

- DMWW’s novel legal theory: district drainage is ‘artificially drained groundwater’ not storm water = a point source

- Costs: $4.1m on nitrate removal equip; $7,000 per day to operate; new equip at $76m to $183.5m; spent $1.5m since Dec. 2014

- Drainage Districts: local government; public utility; tax/assessment & eminent domain
Nutrient Loss Reduction

- Gulf Hypoxia Task Force: 45% reduction in nutrient loading.
- Illinois contributes 20% of nitrate and 11% of phosphorous.
- Goal is a 15% Nitrate reduction by 2025 with ultimate goal of 45% reduction; could cost as much as $800 million annually.
- Est. 9.7m acres of tile-drained farmland; over 22m acres total; 440m pounds N lost each year = 82% of total
## Illinois Nutrient Loss Reduction Strategy

**Science Assessment: Examples of practices for N Reduction**

<table>
<thead>
<tr>
<th>Practice</th>
<th>Per Acre reduction</th>
<th>Total (million lb)</th>
<th>From baseline</th>
<th>Cost per lb N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrification inhibitor-fall applied, tiled corn</td>
<td>10%</td>
<td>4.3</td>
<td>1.0%</td>
<td>$2.33</td>
</tr>
<tr>
<td>Cover crops-all corn/soy tiled</td>
<td>30%</td>
<td>84</td>
<td>20.5%</td>
<td>$3.21</td>
</tr>
<tr>
<td>Wetlands-25% of tiled</td>
<td>40%</td>
<td>28</td>
<td>6.8%</td>
<td>$5.06</td>
</tr>
<tr>
<td>Buffers on all applicable land</td>
<td>90%</td>
<td>36</td>
<td>8.7%</td>
<td>$1.63</td>
</tr>
<tr>
<td>Bioreactors-50% of tiled</td>
<td>40%</td>
<td>56</td>
<td>13.6%</td>
<td>$1.38</td>
</tr>
</tbody>
</table>
### IL Conservation Investments (Thousands)

<table>
<thead>
<tr>
<th>Year</th>
<th>CSP</th>
<th>EQIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$13,524</td>
<td>$16,389</td>
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<tr>
<td>2012</td>
<td>$18,184</td>
<td>$18,785</td>
</tr>
<tr>
<td>2013</td>
<td>$17,387</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>$15,840</td>
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</tr>
</tbody>
</table>

Source: NRCS

www.farmdoc.illinois.edu

www.policymatters.illinois.edu
Regional Conservation Partnership

Address Conservation Challenges

Farm Business Management

Precision Agriculture Technology

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THANK YOU!

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