2014 Whole Foods Market Supplier Award for Outstanding Quality Assurance
2012, 2009 US EPA Sustained Excellence in IPM Award
2005 Children’s Environmental Health Recognition Award, US EPA Office of Children’s Health Protection
Our Focus

• What are the ag retail **revenue opportunities** that also reduce nutrient losses?

• How can we **increase those sales**?

• What kinds of improvements are we generating when **we track sales** and **estimate impacts**?

• How can we better **communicate positive impacts** to retail employees, shareholders, regulators, the public and policy makers?
Stationed in Madison, Wisconsin

**Most beach closings in years**

Nutrient runoff helps fuel bacterial growths that forced a record number of Dane County beach closings this year.

Minimum number of beach days lost, by cause

- Blue-green algae: 118 days in 2018
- E. coli: 103 days in 2018
- Both: 90 days in 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Blue-green algae</th>
<th>E. coli</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>70</td>
<td>62</td>
<td>1</td>
</tr>
<tr>
<td>2014</td>
<td>40</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>2015</td>
<td>119</td>
<td>62</td>
<td>17</td>
</tr>
<tr>
<td>2016</td>
<td>40</td>
<td>55</td>
<td>12</td>
</tr>
<tr>
<td>2017</td>
<td>103</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>2018</td>
<td>118</td>
<td>28</td>
<td>18</td>
</tr>
</tbody>
</table>

Source: Public Health Madison & Dane County State Journal
Who cares?
Projected change in average county-level federal crop insurance premiums

**CORN**

Warming effects of greenhouse gases stabilize after 2100
- RCP4.5 scenario
- "Business-as-usual" RCP8.5 scenario

**SOYBEANS**

Warming effects of greenhouse gases stabilize after 2100
- RCP4.5 scenario
- "Business-as-usual" RCP8.5 scenario

Source: USDA Economic Research Service

By Patterson Clark, POLITICO Pro DataPoint
Our Shared Challenges


Ag Retailers Driving Stewardship and Sustainability
<table>
<thead>
<tr>
<th>Product/Service</th>
<th>Total P-loss reduction (lbs/acre)</th>
<th>Dissolved Reactive P-loss reduction (lbs/acre)</th>
<th>Total N-loss reduction (lbs/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover crops</td>
<td>0.69</td>
<td>0.02</td>
<td>6.89</td>
</tr>
<tr>
<td>Soil tests/apply at Extension recs</td>
<td>0.36</td>
<td>0.12</td>
<td>5.30</td>
</tr>
<tr>
<td>Variable rate applications</td>
<td>1.01</td>
<td>0.09</td>
<td>7.14</td>
</tr>
<tr>
<td>Custom banding</td>
<td>0.55</td>
<td>0.17</td>
<td>11.57</td>
</tr>
<tr>
<td>Apply in rooting zone (strip till)</td>
<td>0.55</td>
<td>0.15</td>
<td>1.11</td>
</tr>
<tr>
<td>Notify farmers after P applications to lightly incorporate (2-3”)</td>
<td>.71</td>
<td>0.16</td>
<td>11.13</td>
</tr>
<tr>
<td>Nitrification inhibitors</td>
<td>-</td>
<td>-</td>
<td>3.75</td>
</tr>
<tr>
<td>Split N application</td>
<td>-</td>
<td>-</td>
<td>5.44</td>
</tr>
<tr>
<td>Enhanced efficiency fertilizers</td>
<td>-</td>
<td>-</td>
<td>23.25</td>
</tr>
</tbody>
</table>
Major Product and Service Trends in the Sandusky River Watershed 2012-2018

% of Total Acres Serviced

BMP

- Rotational Soil Sampling
- Weather Was Considered
- Cover Crops
- VRT P
- VRT N

Ag Retailers Driving Stewardship and Sustainability
If an ag retailer were to offer their own VRT cost share program, would it create a positive return on investment?

- Yes: 82%
- No: 18%

What percent of growers that used the cost-share do you expect to continue with VRT on their own?

- 0-25%: 7%
- 26-50%: 20%
- 51-75%: 40%
- 76-100%: 33%
## 2018 Season Products and Services Profitability

<table>
<thead>
<tr>
<th>GLB and UMRB Product/Service Profitability 2018</th>
<th>I am not breaking even</th>
<th>I am breaking even</th>
<th>I am generating a profit</th>
<th>I do not know</th>
<th>I do not offer this service</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product/Service</strong></td>
<td>Count</td>
<td>% Offering</td>
<td>Count</td>
<td>% Offering</td>
<td>Count</td>
<td>% Offering</td>
</tr>
<tr>
<td>Cover Crops</td>
<td>3</td>
<td>3.70</td>
<td>30</td>
<td>37.04</td>
<td>40</td>
<td>49.38</td>
</tr>
<tr>
<td>Rotational Soil Sampling</td>
<td>5</td>
<td>5.81</td>
<td>28</td>
<td>32.56</td>
<td>46</td>
<td>53.49</td>
</tr>
<tr>
<td>VRT</td>
<td>2</td>
<td>2.38</td>
<td>21</td>
<td>25.00</td>
<td>57</td>
<td>67.86</td>
</tr>
<tr>
<td>Subsurface Preplant</td>
<td>3</td>
<td>10.34</td>
<td>4</td>
<td>13.79</td>
<td>14</td>
<td>48.28</td>
</tr>
<tr>
<td>Topdress</td>
<td>1</td>
<td>1.16</td>
<td>8</td>
<td>9.30</td>
<td>74</td>
<td>86.05</td>
</tr>
<tr>
<td>Sidedress</td>
<td>4</td>
<td>5.63</td>
<td>8</td>
<td>11.27</td>
<td>55</td>
<td>77.46</td>
</tr>
<tr>
<td>Foliar Feeding</td>
<td>1</td>
<td>1.20</td>
<td>7</td>
<td>8.43</td>
<td>67</td>
<td>80.72</td>
</tr>
<tr>
<td>Gypsum Application</td>
<td>3</td>
<td>5.26</td>
<td>21</td>
<td>36.84</td>
<td>26</td>
<td>45.61</td>
</tr>
<tr>
<td>Custom strip-till</td>
<td>3</td>
<td>14.29</td>
<td>6</td>
<td>28.57</td>
<td>5</td>
<td>23.81</td>
</tr>
</tbody>
</table>
GLB and UMRB Customer Barriers to Adopting Precision Ag

- Translating precision ag information and inferring various practices is too thought and time-intensive for customers.
- Customers lack assurance in precision ag recommendations based on specified data (yield maps, soil sampling data, remote sensing).
- The type of soil and/or topography in the area limits customer profit.
- The cost of precision services is a barrier.

GLB and UMRB Dealer Barriers to Adopting Precision Ag

- Communicating and presenting the benefits of precision ag services to customers is too challenging.
- Lack of compatibility between precision ag equipment and technology is a barrier to adoption.
- Financial and other support from manufacturer is absent or insufficient to utilize precision services.
- Difficulty finding applicants who have knowledge and experience in precision agriculture services.
- Inability to compensate employees knowledgeable in precision ag because of increased cost.
- The cost of precision ag equipment limits ability to offer services.
Ag Retailers Report Progress on Products and Services that Improve Water Quality

By CropLife Staff | September 28, 2017

Ag retail-serviced acres of variable rate technology (VRT), cover crops, rotational soil testing, and other phosphorus-saving strategies continue to grow in the Sandusky River Watershed and the Great Lakes Basin. Sixty-two Great Lakes Basin ag retailers participating in the Partnership for Ag Resource Management (PARM) reported 2016 sales of products and services that help keep phosphorus fertilizer on cropland, and out of waterways.

Variable Rate Technology Among Key Topics in New Phosphorus Loss Reduction Handbook

By PrecisionAg Professional Staff | December 12, 2016

The Partnership for Ag Resource Management has released an updated approved Phosphorus Loss Reduction Handbook for Agronomists, a communication tool for sales agronomists, Certified Crop Advisors, and growers.

The handbook features topics such as adoption, education, and implementation strategies, with each chapter focusing on a different aspect of phosphorus management. The handbook includes case studies, best practices, and resources for further learning.

Can working with ag retailers help our lakes?

Building an agricultural partnership to reduce phosphorus

With the goal of reducing phosphorus in lakes and streams, the Partnership for Ag Resource Management (PARM) and the Great Lakes Commission have partnered to develop a comprehensive strategy for reducing phosphorus levels in the Great Lakes Basin. The Partnership works with ag retailers to provide education and resources to help reduce phosphorus runoff from agricultural lands.
PARM Webinar Series Demographics

- Ag Retailer - Agronomist: 23%
- Ag Retailer - Manager: 19%
- Ag Retailer - Other: 10%
- Independent Consultant/Agronomist: 9%
- Agribusiness Association: 8%
- Producer: 8%
- Production Company or Manufacturer: 9%
- State/Federal Agency: 5%
- Watershed Organization or Other Non-Profit: 9%
- Research or Academia: 5%
- Other: 2%

Cover Crops for Soil and Water Quality Improvement
To receive CEUs for watching this video, watch through this link: https://attendee.gotowebinar.com/register/360784246579781633. If you are watching this video more than two weeks after the webinar took place,

The Economics of Renting and Owning American Farmland
To receive CEUs for watching this video, watch through this link: https://attendee.gotowebinar.com/register/6807102171456115331. If you are watching this video more than two weeks after the webinar took place,
4R-Approved Resources

More than 25,000 wallet cards distributed and 927 Handbooks downloaded!

Phosphorus (P) loss from any field is possible. Fields with any of the following conditions may be at higher risk. Your special attention can help prevent P losses.

- Soil test levels are above maintenance.
- Areas with high surface runoff potential:
  - Poorly or imperfectly drained soils.
  - Sloping fields.
  - Fields with less than 30% crop residue cover on soil surface.

**4R Nutrient Stewardship for Green Crops and Blue Lakes**

**Do**
- Inject or band phosphorus (P).
- Lightly incorporate (2-3") P applications; ag retailers can notify customer when applications are made.
- Follow recommendations for setbacks.
- Broadcast P for one crop year at a time only.
- Soil test at least every three years.
- Apply at University recommendations.
- Plant cover crops.
- Consider variable rate application.
- Consider reduced tillage: no till, strip till.

**Don’t**
- Broadcast without light incorporation.
- Broadcast application before heavy rain.

*Ag retailers driving stewardship and sustainability*
Seven Modules From SPARC:
Sustainability 101 for Ag Retailers
Sustainability 101 for CCAs
Environmental Sustainability Metrics
Practices and Services Supporting Sustainable Agronomy
Measuring Sustainability Success
The Farmer Business Case for Sustainability
Developing a Sustainability Program
Other Projects

Great Lakes Conservation Connect

Fig. 1
Percent of U.S. Farmland Rented or Leased, by County, 2012

U.S. = 38.8%


Ag Retailers Driving Stewardship and Sustainability
Participating Ag Retailers

Other 2018 participants (multiple locations across the US):


Interested in getting involved? Contact Caitlin, project manager caitlin@partnershipfarm.org
Thanks to Members, Funders and Collaborators!
The IPM Team

Dr. Tom Green  
Director

Kelly Adams  
Co-Director of Operations

Ryan Anderson  
Outreach Specialist

Josie Dillon  
Coordinator

Julia Freuck  
Coordinator

Will Fulwider  
Project Manager

Sharon Haberkorn  
Office Manager

Ariel Larson  
Project Manager

Richard Mansheim  
Senior Manager

Lauren Mordini  
Team Member

Leah Reuter  
Coordinator

Gabriel Schaffner  
Team Member

Dan Skolnik  
Senior Software Engineer

Maria Weber  
Team Member

Peter Werts  
Project Manager

Caitlin Leahy  
Project Manager

Email:  
Caitlin@partnershipfarm.org

Ag Retailers Driving Stewardship and Sustainability