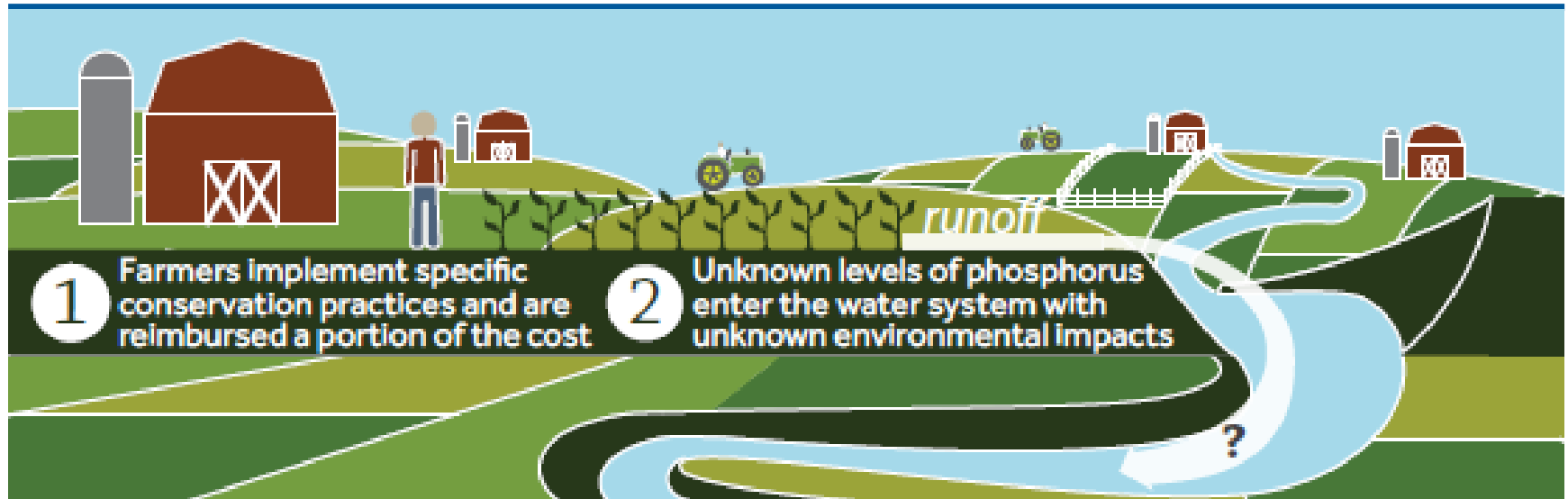


# **An Overview of Pay-for-Performance Conservation and Its Potential for the Chesapeake Bay**

Jonathan Winsten, Ph.D.  
Winrock International  
June 22<sup>nd</sup>, 2020

# Current Approach: “Pay-for-Practice” Conservation



- USDA spends >\$5 Billion/Year on practices
- Field-specific outcomes are not quantified
- Does not motivate farmers to solve problem

# Landscape is Diverse: BMP Performance is Highly Variable

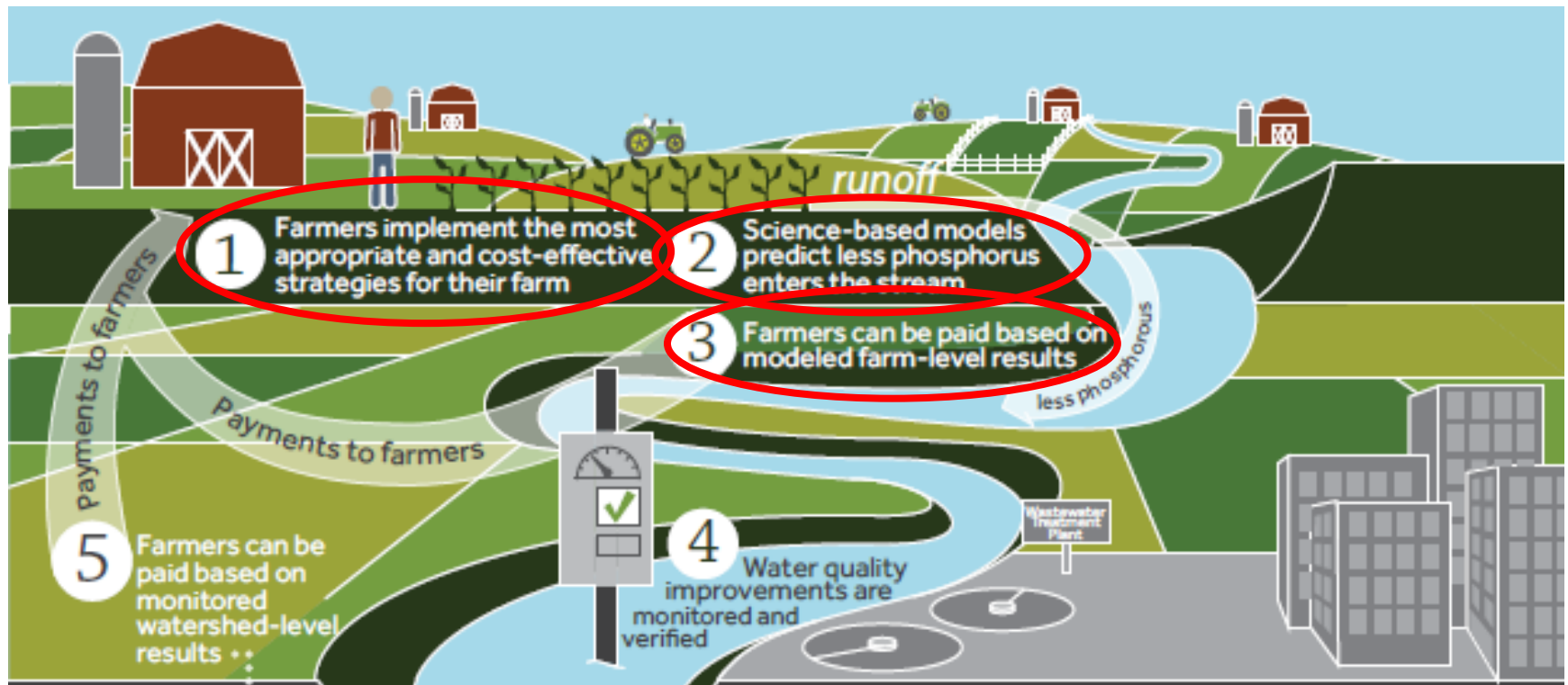
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- Field-specific information is essential



# Alternative Approach: “Pay-for-Performance” Conservation



- Payments based on estimated outcome from specific fields

# Why Pay-for-Performance?

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1. Address market failure
2. Motivate farmers
  - A. Create specific goals
  - B. Increase farm profits
3. Quantify outcomes
4. Meet WQ goals given budget constraints

# Key Program Design Questions: What, How, and Where?

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**What** ecosystem service(s) do we target?

**How** do we quantify environmental performance?

**Where** do we quantify environmental performance?

- Need performance measures that are closely related to ultimate water quality concern **AND** directly influenced by farm management decisions.

# Pilot-Testing Pay-for-Performance

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- Iowa, Vermont, Wisconsin, Ohio
- Focus on P loss; also N loss (Ohio)
- Models: P Index, Snap-Plus, NTT
- WQ Measurement (Ohio)
- Payments: \$10-35/lb P; \$5/lb N

*Pilot-testing Pay-for-Performance Conservation  
in the Old Woman Creek Watershed*

PROGRAM SIGN-UP SHEET FOR 2019

Farm Name: \_\_\_\_\_  
 Farmer Name(s): \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City: \_\_\_\_\_ Zip: \_\_\_\_\_  
 County: \_\_\_\_\_ Township: \_\_\_\_\_  
 Telephone #: \_\_\_\_\_ Social Security or Tax ID#: \_\_\_\_\_

I understand that I am eligible for up to \$250 for soil testing done at the farm to increase the accuracy of data entered into NTT. I understand that the successful implementation of the changes listed on the attached sheet, with no other that affect phosphorus (P) or nitrogen (N) loss from my farm, will result in an estimated reduction of \_\_\_\_\_ lbs of total P loss and an estimated reduction of \_\_\_\_\_ lbs of total N loss from my farm for the 2019-20 crop year. I understand that I will receive a \$35 per lb of total P loss reduced and \$5 per lb of total N loss reduced from my farm's baseline. This will result in a nutrient loss reduction payment of \$\_\_\_\_\_.

In addition to the above, I also understand and agree to the following:

- That I am making the listed changes voluntarily and am in no way obligated to make the listed changes on my farm.
- That any changes that I make on my farm will be my choice and my responsibility and I will not hold the project or its implementers responsible for any impacts caused by these changes.
- That any changes I make on my farm must be verified by staff of the Erie Soil Conservation District, which may include obtaining copies of seed purchase receipts, performing site visits, taking photographs, or requesting other records from the farmer to demonstrate practice implementation.
- That if I make additional changes during the crop year, other than those listed, which further reduce the estimated loss of N or P from my farm, the project or its implementers are not responsible for paying the incentive for those additional nutrient loss reductions.
- That if I make additional changes during the crop year, other than those listed, which increase the estimated N or P loss from my farm, this will be accounted for and the total incentive payment will be adjusted to reflect the net change in estimated N+P loss from the farm. The payment rates will remain the same, but the lbs. of N+P reduced will be adjusted.
- That the only information specific to my farm that will be released will be the type of BMP(s) implemented and the township in which my farm is located, which the project funder (U.S. EPA) requires. The project will only make other results available in an anonymous fashion, including the nutrient runoff reductions and cost-effectiveness of the field management changes analyzed. All other information, such as individual soil test results, fertilizer application rates, and field-specific nutrient or sediment runoff estimates, will be held as confidential within the project team and will not be released to any persons or entities without the prior written permission of the farmer.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



# Results of Good Business Decisions

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<b>Watershed</b>	<b>P Loss Reduced (lbs/acre/yr)</b>	<b>Farm Cost (\$/lb P)</b>	<b>Farm Profit (\$/lb P)</b>	<b>Sediment Loss Reduced (tons/acre/yr)</b>
<b>Iowa</b>	<b>0.88</b>	<b>-\$0.61</b>	<b>\$10.61</b>	<b>1.58</b>
<b>Vermont</b>	<b>0.26</b>	<b>\$4.86</b>	<b>\$20.14</b>	<b>1.01</b>

# Lessons Learned

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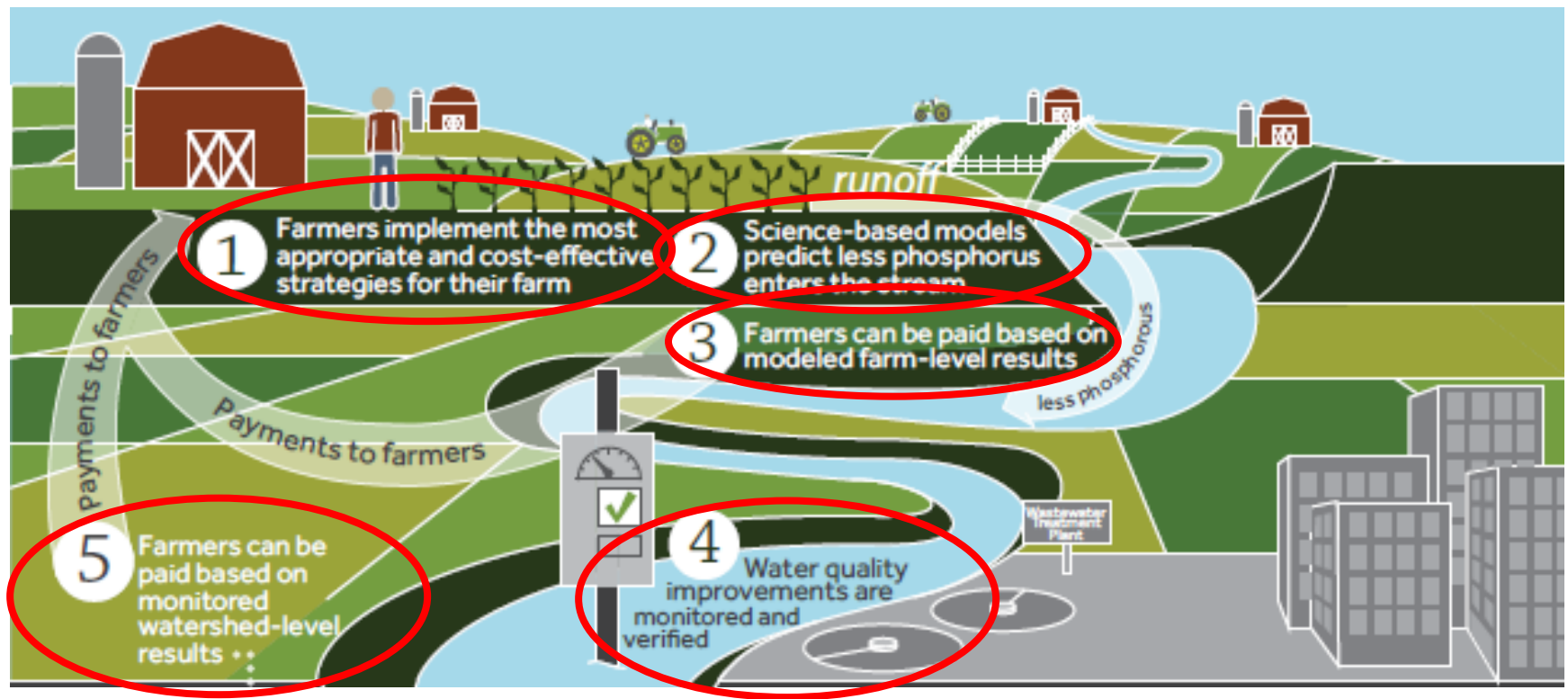
- Low-hanging fruit remains
- Perf-based incentives inspire new ideas
- Farmer motivation varies
- Boots on the ground is essential
- Transaction Costs < Program Benefits
- Models: a necessary evil??
- Policy change is slow; private sector moves faster

# Chesapeake Bay Watershed

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- Agriculture contributes:
  - 38% N, 45% P, 60% sediment
  - Most cost-effective solutions from agriculture.
- Pay-for-performance:
  - most cost-effective approach (Ribaud et al. 2014).
  - Can achieve TMDL goals with 12% of cropland.

# “Model-at-the-farm, measure-at-the-watershed”



# Model at the Farm – Measure at the Watershed

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- Modeling farm performance
  - Triggers primary incentive payment
- Measuring watershed performance
  - Provides a focal point and real report card
  - Triggers a secondary incentive payment
  - Farmer-to-farmer peer pressure for participation
- Winner of U.S. Nutrient Challenge (2015)



# Pay-for-Performance Conservation: A How-To Guide

- Describes steps and data needs
- Goals:
  - Reduce transaction costs
  - Create opportunities for scale
- Funded by Great Lakes Protection Fund



<https://www.winrock.org/project/running-off-pollution-paying-midwestern-farmers-to-improve-water-quality/>

# Contact Information

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