Inorganic Ag Fertilizer Data for the Watershed Model (CAST)

Tom Butler, EPA

Ruth Cassilly, UMD

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Outline

- Task
- History
- Current efforts
- Timeline

Task

What?

- An evaluation of fertilizer sales data reported to AAPFCO by state chemists.

Why?

- Request of MD, PA, VA, and NY during CAST-21 workplan discussions
  - Itemized in the Ag Workgroup (AgWG) CAST Issue Tracker.

Deliverables?

- Phase 7 inorganic fertilizer input
- Status quo or new state reported data

How will we tackle this task?

- Provide a history of options already considered or recommended
- Collect an overview of existing fertilizer data reporting
- Analyze data quality
- Address options for improving data with jurisdictions

What is our current data source?

AAPFCO: Association of American Plant Food Control Officials

Consistent: Uniform Fertilizer Tonnage Reporting System (UFTRS).

- Shipper
- County
- Tons sold
- Grade (analysis)
- Use

Two main purposes for the reports:

1. Generate income to support the regulatory program

2. Reveal the kinds and amounts of fertilizers being distributed in the state

What is our current method?

Ag Fertilizer Data is summed to the watershed-level then redistributed at county-level

- Smooth variability of fertilizer sales spatially and temporally
- Calculate a regionwide fertilizer amount by summing all states
- Determine watershed wide fertilizer use with cost from Ag Census data
- Distribute fertilizer sales to counties by inorganic crop application goal.

What are the issues with our current method?

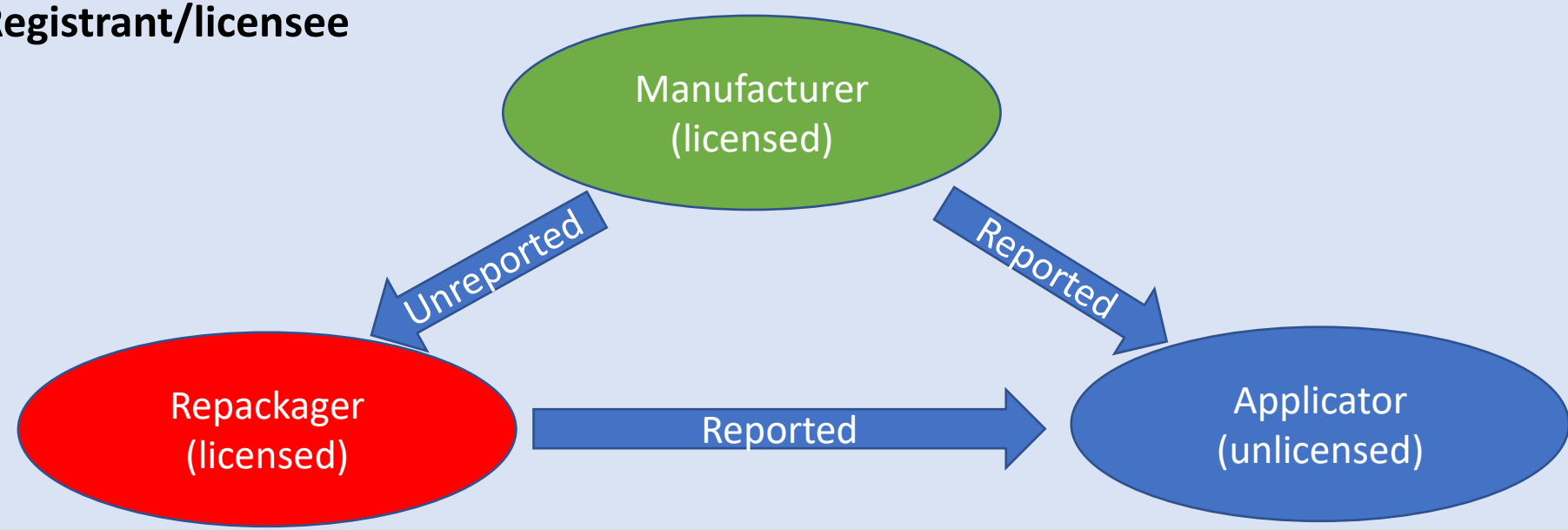
- **Data reliability**
- **Data Latency**
- **Accuracy of designated use**
- **Point of sale does not equal application**
- **Duplicate reporting**

Example of double counting

Reports of sales are only from a Registrant/licensee to a Non-Registrant/non-licensee

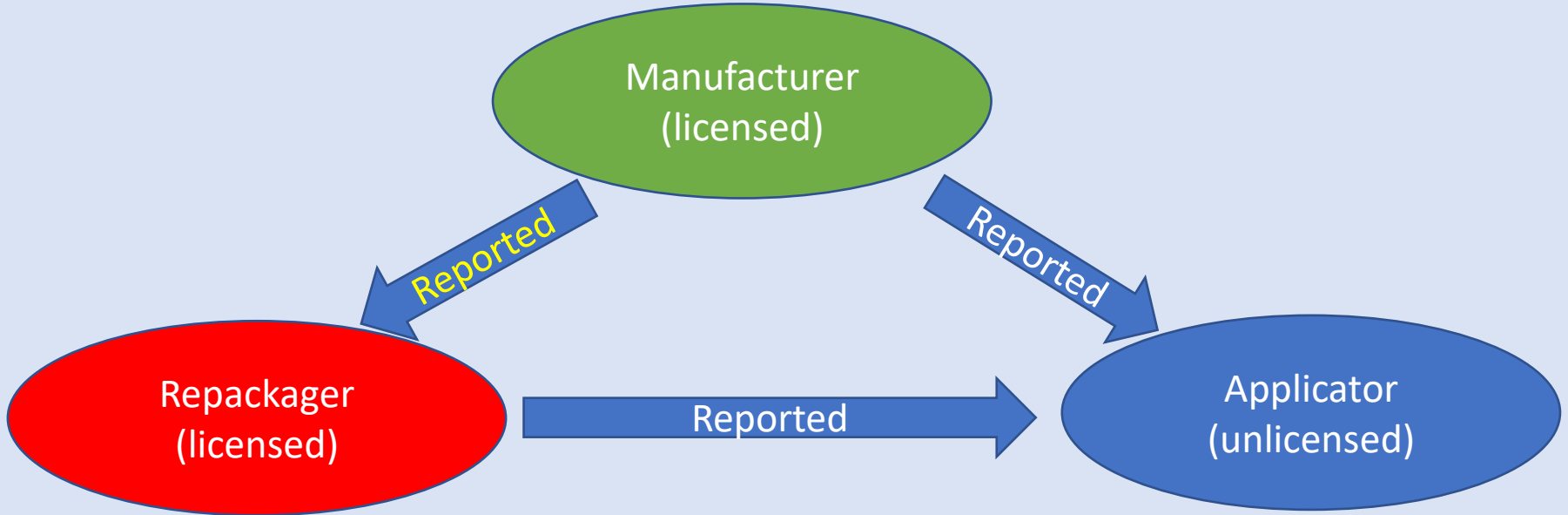
Ideal Scenario

- A licensed business distributes to another licensed business but **DOES NOT reporting fertilizer tonnage**. Tonnage is only reported to an unlicensed party.



Real world

- A licensed business distributes to another licensed business but **DOES reporting fertilizer tonnage**. Tonnage is only reported to an unlicensed party.



If there are so many issues, why do this?

Data Source:

- Each state with a fertilizer law has a requirement of reporting fertilizer tonnage.
- No reliable alternative
- Most accurate and creditable fertilizer use data in the US are generated by the fertilizer regulatory programs in each state.

Data Processing Methods:

- Iterative process with stakeholder input.

How have we tried to improve data in the past?

"Understanding Fertilizer Sales and Reporting Information" Workshop: May 2007

- Farm surveys
- Nutrient management plan reporting
- Application questionnaires
- Zip code reporting
- Regulatory changes through legislation

Building a Better Bay Model: A Workshop for Agricultural Partners May 2013

- Replace fertilizer use with direct representation of applications
- Utilize sales information for nutrient content of chemical fertilizer
- Collect data from International Plant Nutrition Institute.

What have been obstacles to our progress?

Resources

Structure

Time

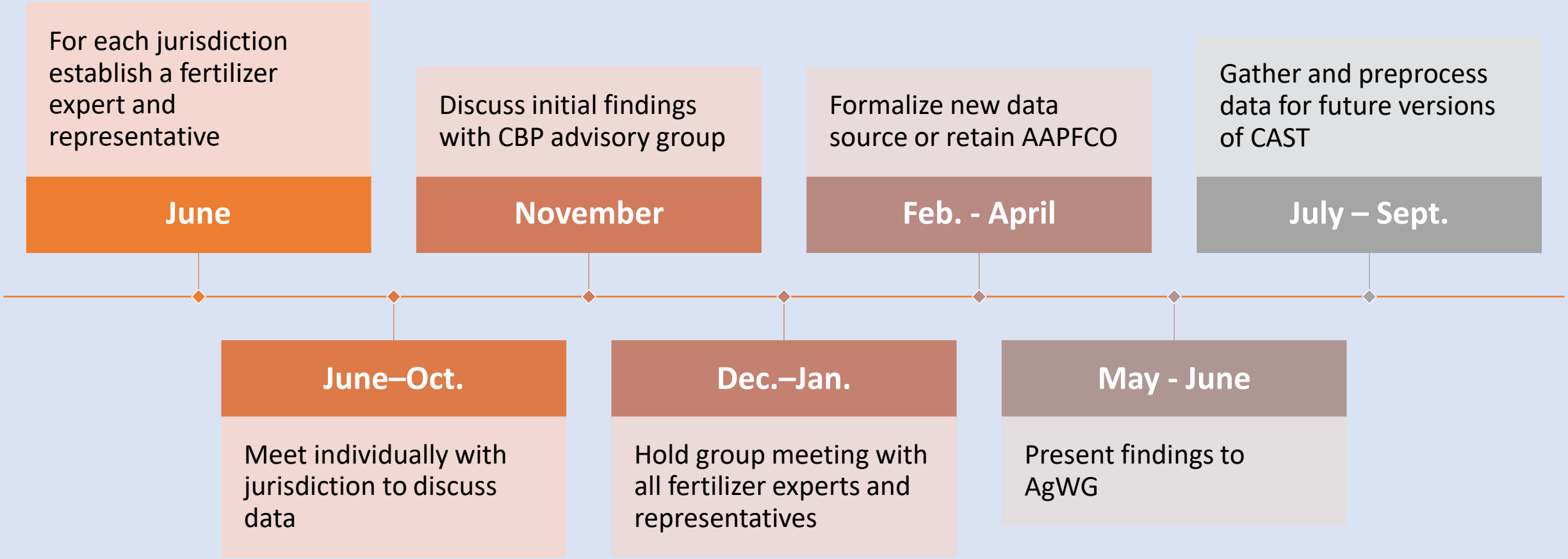
Bay Program Commitments

Role	POC
Lead	Tom Butler
Agriculture	Mark Dubin, Loretta Collins, Ruth Cassilly
CAST	Olivia Devereux, Jessica Rigelman
Watershed Technical Workgroup	Vanessa Van Note, Jeff Sweeney
Modeling Workgroup	Gary Shenk
Urban Stormwater Workgroup	David Wood

Jurisdiction Commitments

Jurisdiction	POC	Fertilizer Expert
MD	Elizabeth Hoffman	Alisha Mulkey
PA	Frank Schneider	David Dressler
NY	Greg Albrecht	Jan Morawski
VA	In Progress	In Progress
DE		
WVA	Dave Montali	In Progress

PROPOSED Timeline



Summary

Inorganic fertilizer is a large source of nutrient pollution in the Chesapeake Bay Watershed

And

Jurisdictions would like to improve this data input in environmental models

BUT

Investigations have previously been undertaken with limited success.

THEREFORE

A new framework including increased jurisdictional engagement has been created to successfully improve this data input.

Questions?