SECTOR LOAD GROWTH TRACKING

Patricia Gleason and Olivia Devereux

Tracking and Accounting Systems to Support the Sector Load Growth Demonstration: Follow-Up Discussion on Addressing Challenges

November 19, 2014

OVERVIEW

- Trends in the 2014 land use and animal data

- How the Chesapeake Bay Program Partnership Watershed Model is used to estimate sector load growth

- Offset demonstration expectations

- Reporting trades and offsets

- Bay Model Updates

2014 UPDATED LAND USE AND ANIMALS

- Agriculture Data
  - Crop Acres and Animal Populations updated based on 2012 Ag Census.
  - Crop Acres distributed to better match overall Harvested Acres and Pasture trends reported in Ag Census.
  - States updated estimates of animals within CAFO operations.
- Urban Land Uses
  - Population projections for PA (March, 2014), MD (July, 2014) and WV (March, 2014) used to update urban lands and population.
  - 2011 National Land Cover Dataset used to update land uses and future populations on sewer vs. septic.
  - WV and MD localities provided updates for sewer service boundaries.
  - Method for capping total urban acres in a county was corrected (error found in November, 2013 version).
- Construction
  - States provided permitted, disturbed acres
- Harvested Forest
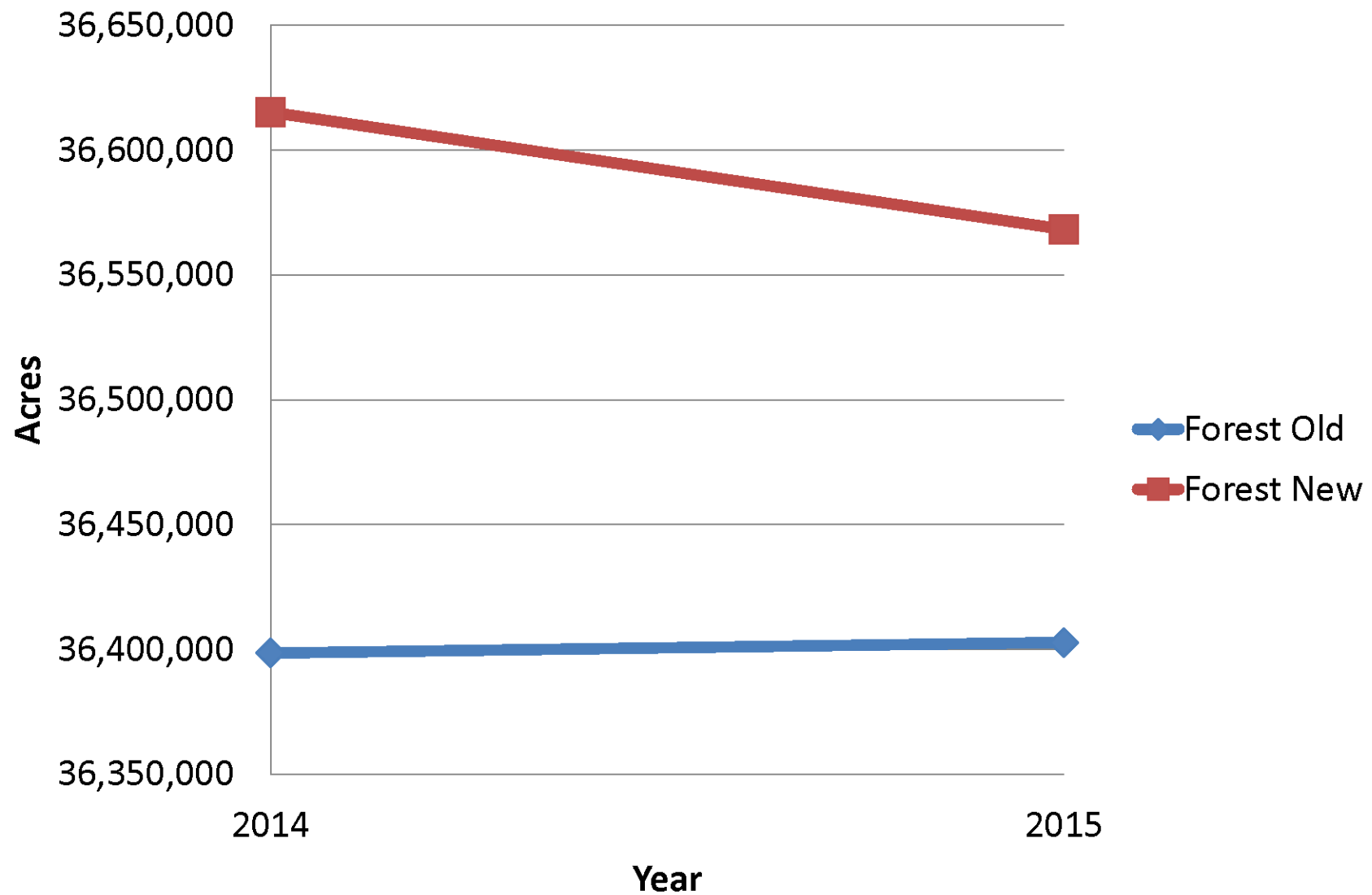 - States provided permitted, harvested forest acres
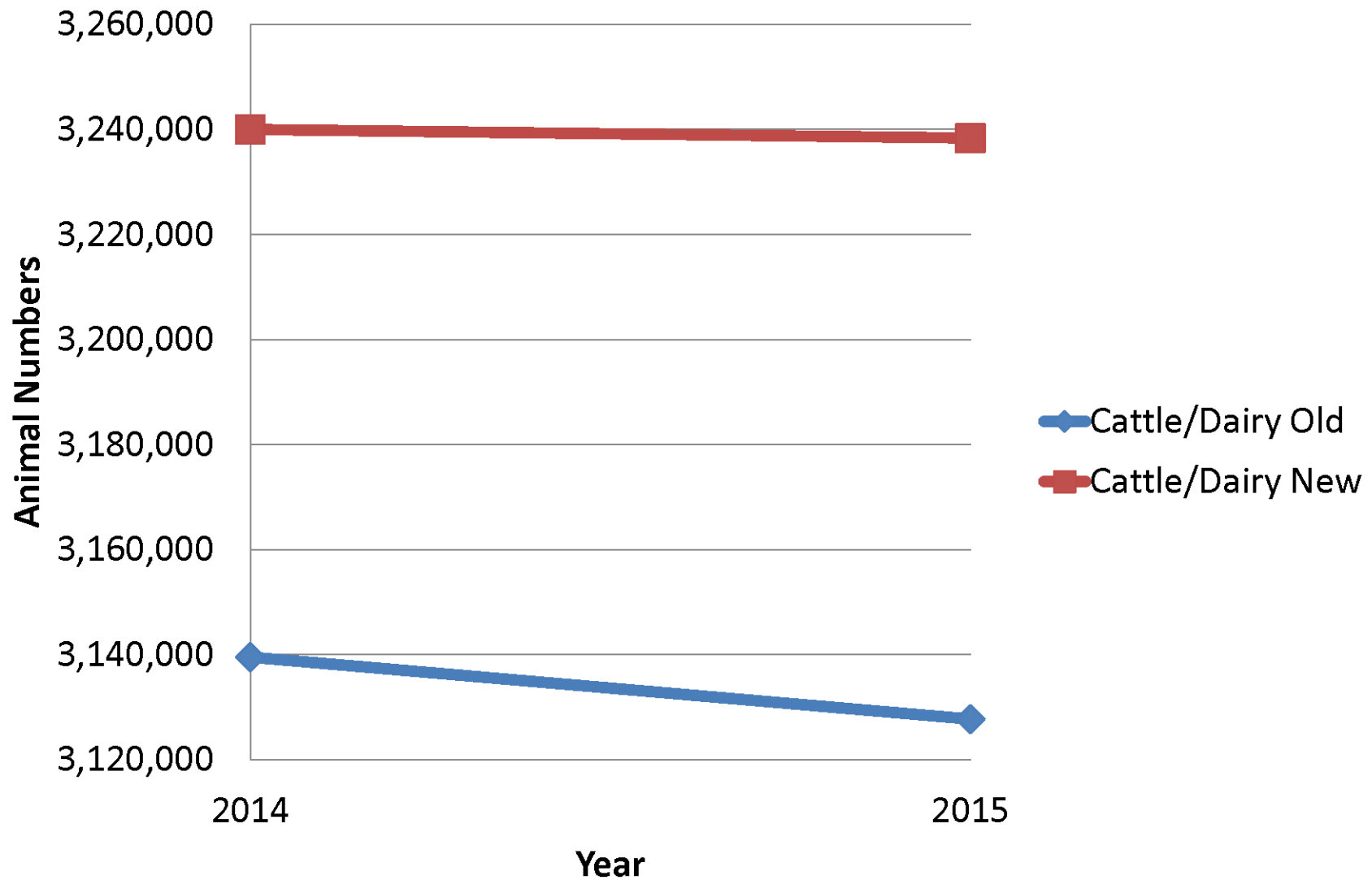
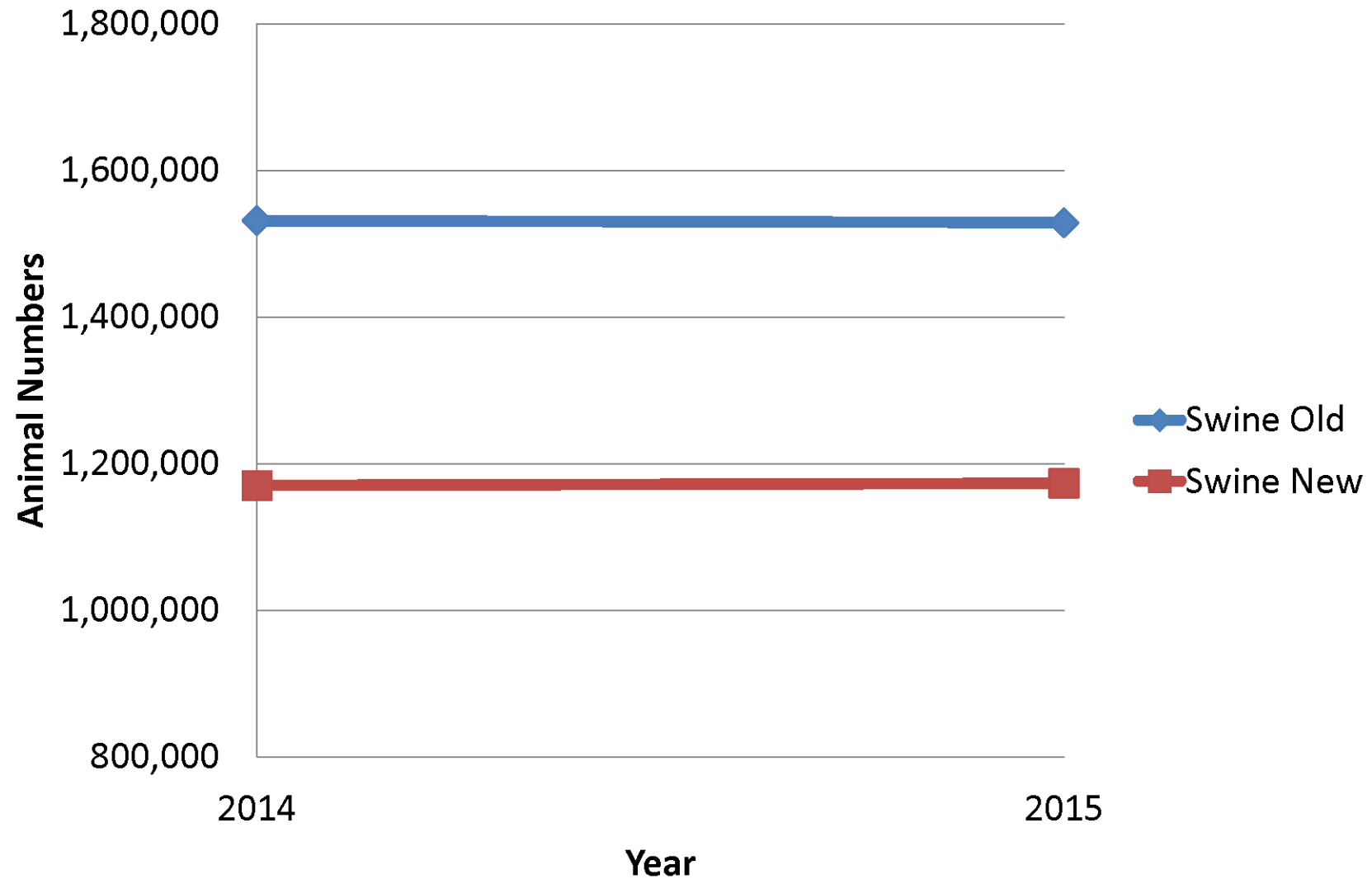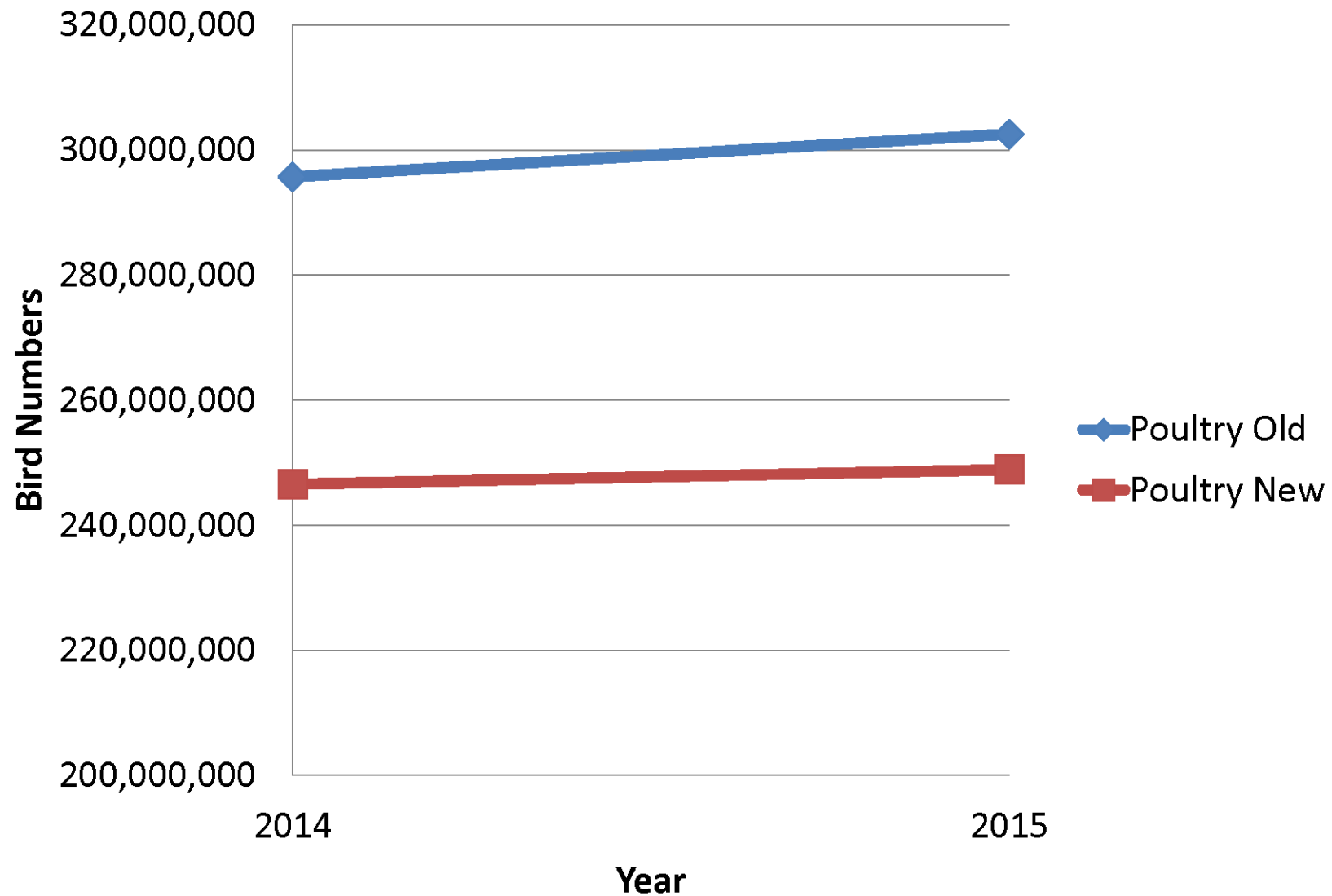Watershed Agricultural Projections
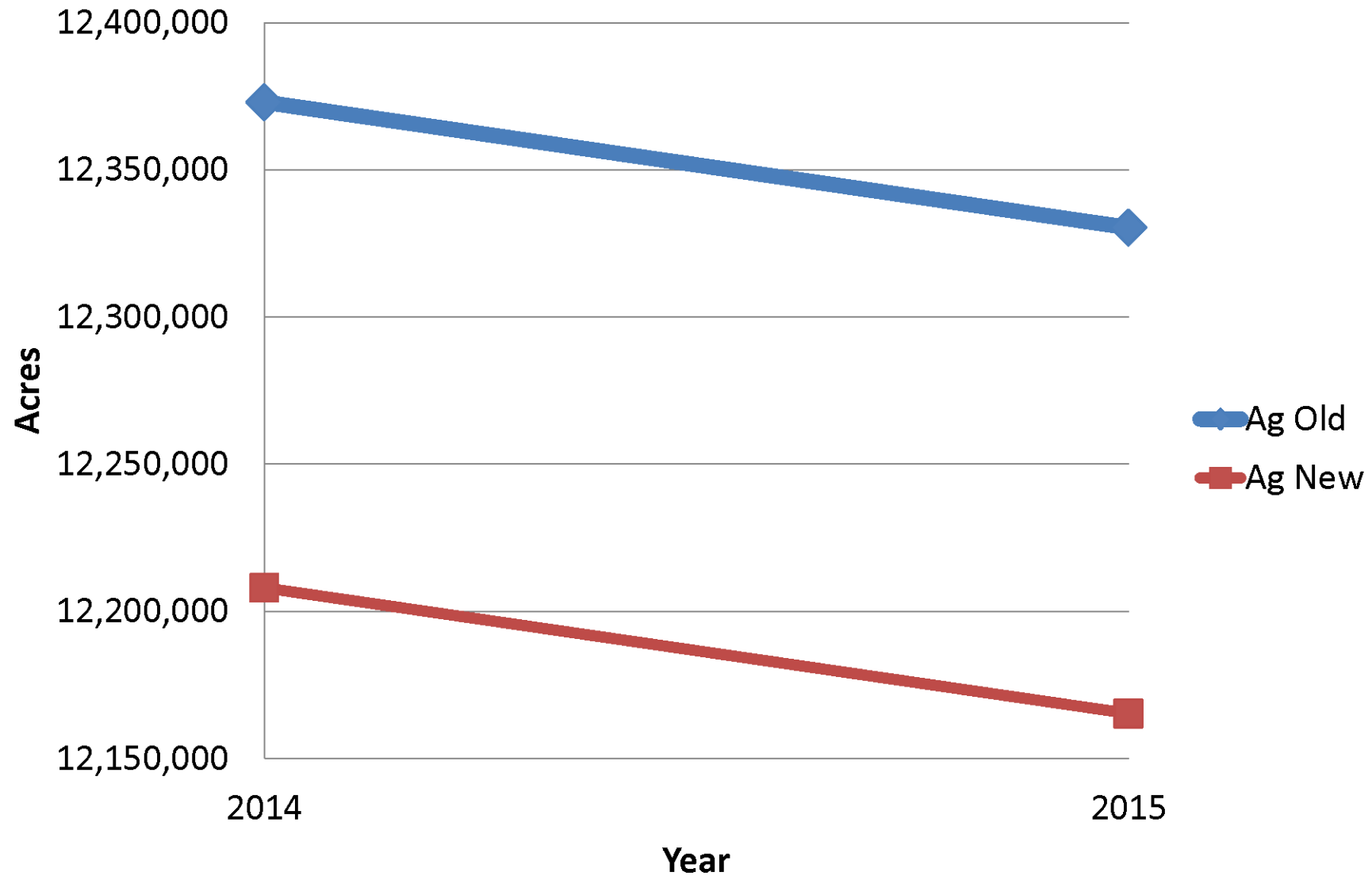
Watershed Urban Projections
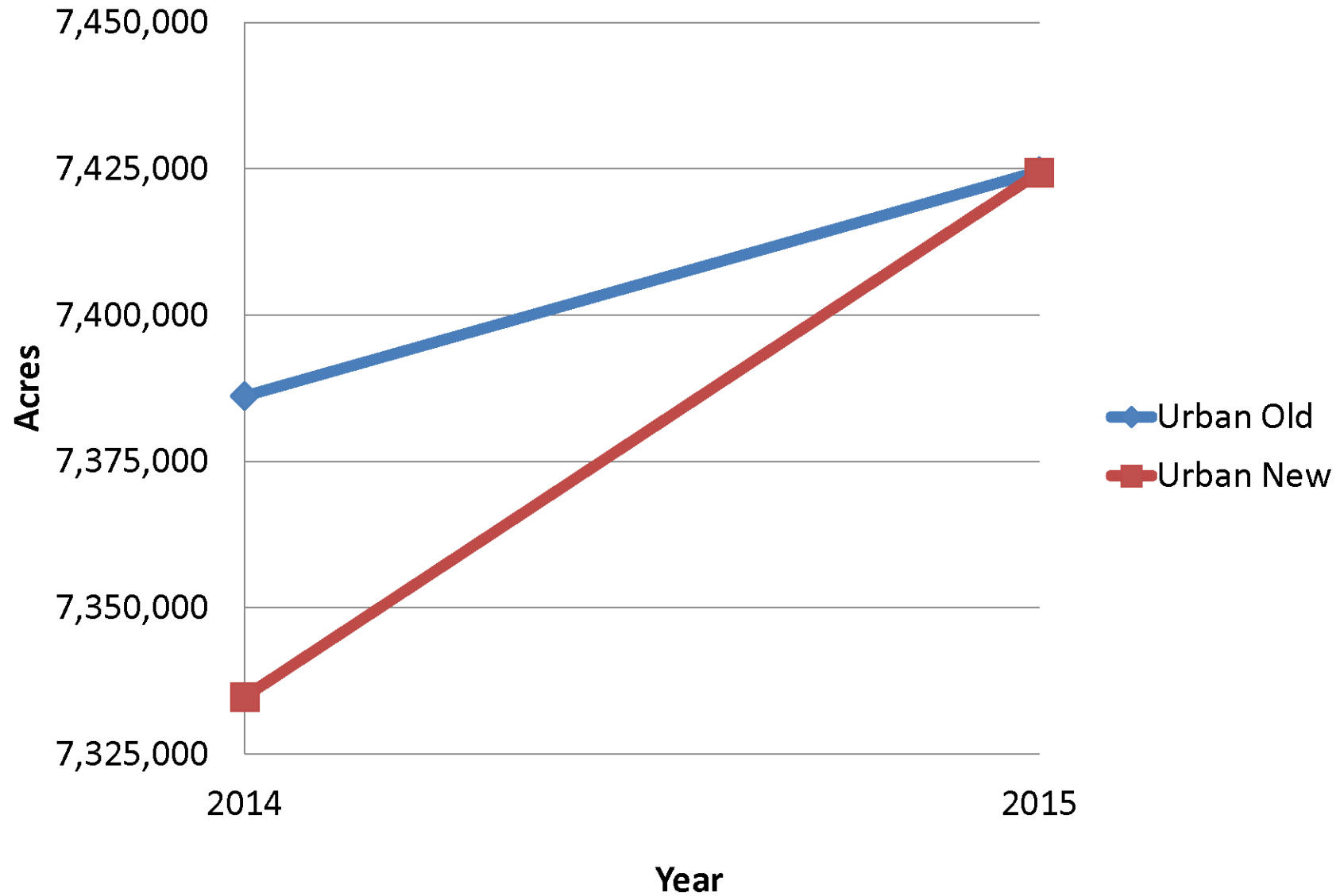
Watershed Forest Projections
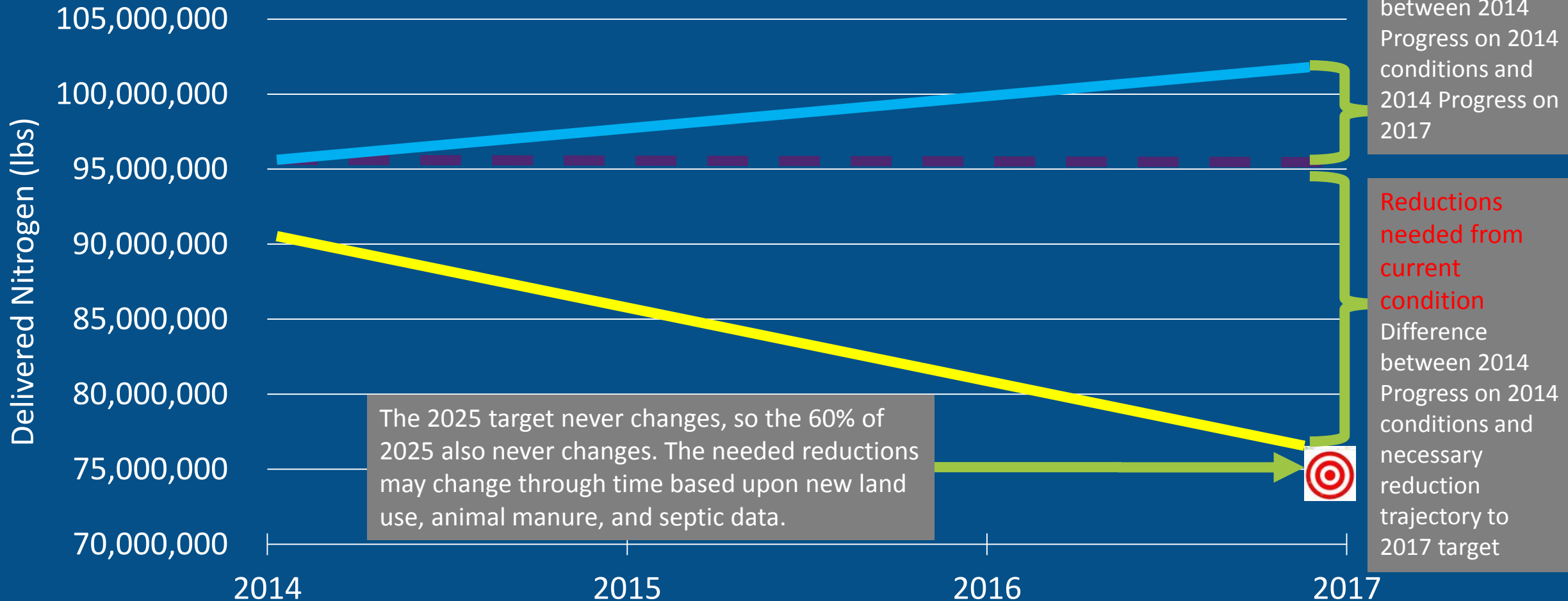
Watershed Poultry Projections

Accounting for Sector Load Growth

EVALUATE: By Jurisdiction, Basin, and Sector
Step 1: Run 2014 Progress on 2014 conditions.
Step 2: Run 2014 Progress on 2017 conditions.
Step 3: An offset scenario must achieve reductions to hit target load **on target year's conditions**.

Reductions needed to offset growth
Difference between 2014 Progress on 2014 conditions and 2014 Progress on 2017

Reductions needed from current condition
Difference between 2014 Progress on 2014 conditions and necessary reduction trajectory to 2017 target

The 2025 target never changes, so the 60% of 2025 also never changes. The needed reductions may change through time based upon new land use, animal manure, and septic data.

Delivered Nitrogen (lbs)

105,000,000
100,000,000
95,000,000
90,000,000
85,000,000
80,000,000
75,000,000
70,000,000

2014   2015   2016   2017

TRACKING AND ACCOUNTING

- By specific geography, such as state-major basin.

- By sector. Growth may result in a shift among sectors, even while the 2025 goal stays the same.
  - Offset load reductions can come from land use change, such as ag land becoming urban land where that generates a load reduction

- Each jurisdiction is expected to have a management system to address these changes among sectors due to growth. This management system will help with individual decisions about new permits, zoning, and overall effect on a particular geographic area.
  - One option: Assess land use conversions using the average land use load by sector and geography for 2025. Weigh land use changes, new animal operations, etc. using these average land use loads. This information, in addition to programmatic restrictions, is likely to be adequate for sector load growth management.
  - Example for Virginia's urban sector: track and account for changes using the average land use load for 2025 plus the programmatic requirement that 50% of the load be managed onsite. The average land use load was determined using all potentially developable lands.

- The CBP Partnership Model is used to account for changes in land use, animals, and septics. If there are data available to inform projections in a more time-sensitive fashion than what CBPO is currently using, then this information also will be used for the annual progress review, milestones, etc.

RISK REDUCTION

These situations may not be accounted for in CBPO projections that depend on data collected every 5 years (Ag Census) or longer (NLCD)

- Grandfathered projects from the Great Recession of 2008-2009: already permitted at a time when ESD was not required, projects put on hold, now being built under that original permit.

- Poultry populations may be increasing since there are many new houses being built
    - If these are replacing abandoned houses, how to track abandoned houses?

- New integrated swine operations

To reduce risk, jurisdictions may collect data on a more frequent basis. The Chesapeake Bay Program will incorporate these data in the land use, animals, and septics used for Progress, Milestones, and other scenarios.

Note that the WQGIT approves all data and data changes.

TRADING AND OFFSET REPORTING

- BMPs for NEIEN. Attribute as a trade or offset once used.
  - Not looking for land use change, since that is accounted for in the land use projections.

- Load traded by sector and state-major basin

- Evaluation is likely to occur as part of the Milestone Assessments

MIDPOINT ASSESSMENT AND CHANGES/UPDATES TO THE CHESAPEAKE BAY PARTNERSHIP MODELS

- Mid-Point Assessment

http://www.chesapeakebay.net/groups/group/water_quality_goal_implementation_team/wmp_for_the_mpa