



2017 Census of Agriculture Chesapeake Bay Watershed

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Water Quality GIT Meeting
September 30, 2019



2017 Census of Agriculture Categories

- CBP Animal Types
- CBP Land use/Crop Types and Categories



2017 Census of Agriculture

Time Period for Trends

- 1987 through 2012, then
 - 1) Post-2012 with old forecast through 2025, the background conditions for the Phase III WIP scenarios.
 - 2) Post-2012 with new 2017 Ag Census data and new forecast through 2025



2017 Census of Agriculture

Time Period for Trends

- Forecasts use methods recommended by Ag Modeling for Phase 6 Watershed Model (CAST) and approved through Agriculture Workgroup, Water Quality GIT, etc.



2017 Census of Agriculture

When will the new data be used?

- According to decisions through the PSC, introduction of new data and methods (science) occurs at the beginning of new Milestone periods.
 - 2017 Ag Census data will be incorporated with the next version of CAST for the 2020-2021 Milestone period.
 - Current schedule calls for updated CAST to be finalized Nov. 1.



2017 Census of Agriculture

When will the new data be used?

- The new forecasts are used for background conditions for the annual model Progress assessments.
 - Starting point is 2nd 2019 progress scenario, then 2020 and 2021 Progress scenarios.
- The new forecasts do not change the background conditions for Phase III WIPs which were finalized August, 2019.
 - “The bar” has not changed



2017 Census of Agriculture

Animal Forecast Methods

- Detailed documentation of the methods and data used for calculating manure nutrient inputs to the land – including data from the Census of Agriculture – are part of the Phase 6 Watershed Model documentation

<https://cast.chesapeakebay.net/Documentation/ModelDocumentation>

- Section 3, Terrestrial Inputs



2017 Census of Agriculture

Animal Forecast Methods

- Checks on the office's analyses have been done in-house and well as some stakeholders who specifically asked for detailed information.
 - Data is available by request during this draft period.
 - Please be specific as to what you're interested in – animals, crops, spatial scale, time period, etc.
 - It is imperative that users understand methods used by the CBP from the raw data in Census of Agriculture – as documented on web site.
 - There have been corrections to the forecasts since originally presented to the Ag Workgroup 7/18/19



2017 Census of Agriculture

Animal Forecast Methods

- For animals, forecasts are at the state scale
- State numbers are then proportioned to individual counties according to latest Census of Agriculture
- For broilers, turkeys, pullets, and hogs, use annual Census production numbers by state
- For all other animals, use 5-year Census inventory numbers by state
- For forecasts, greater weight is given to more recent short-term trends than long-term trends

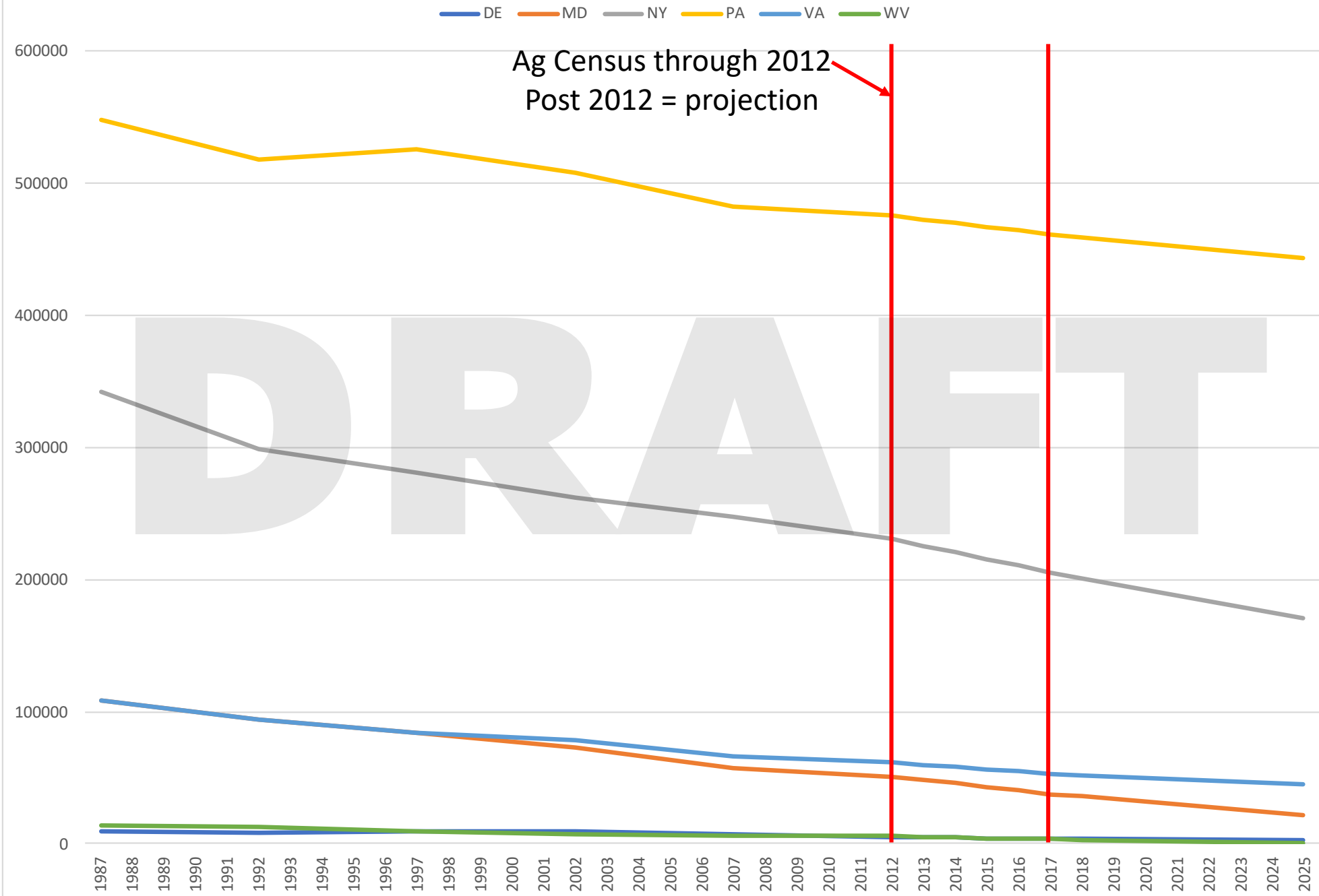


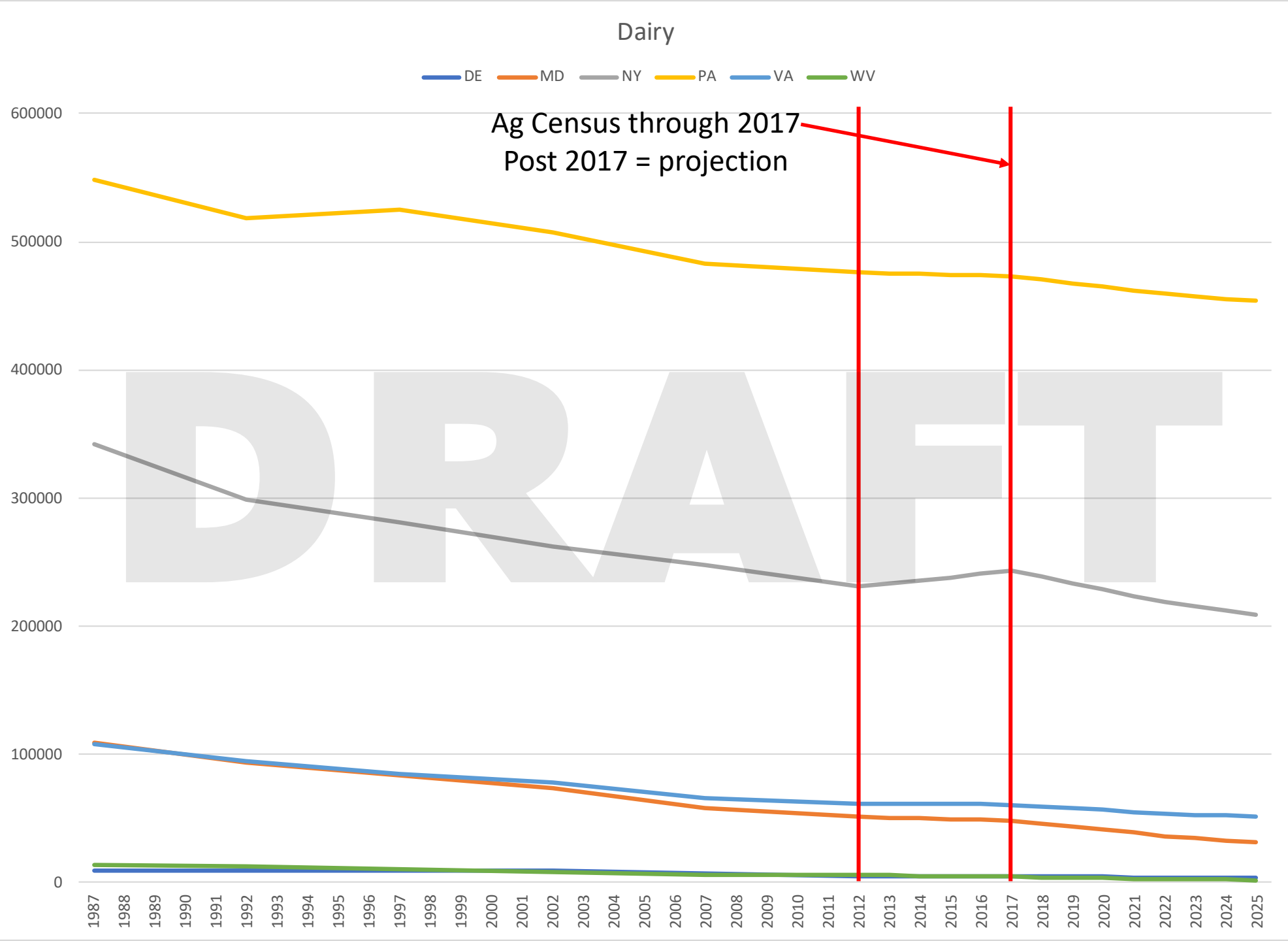
2017 Census of Agriculture

Animals and Crops

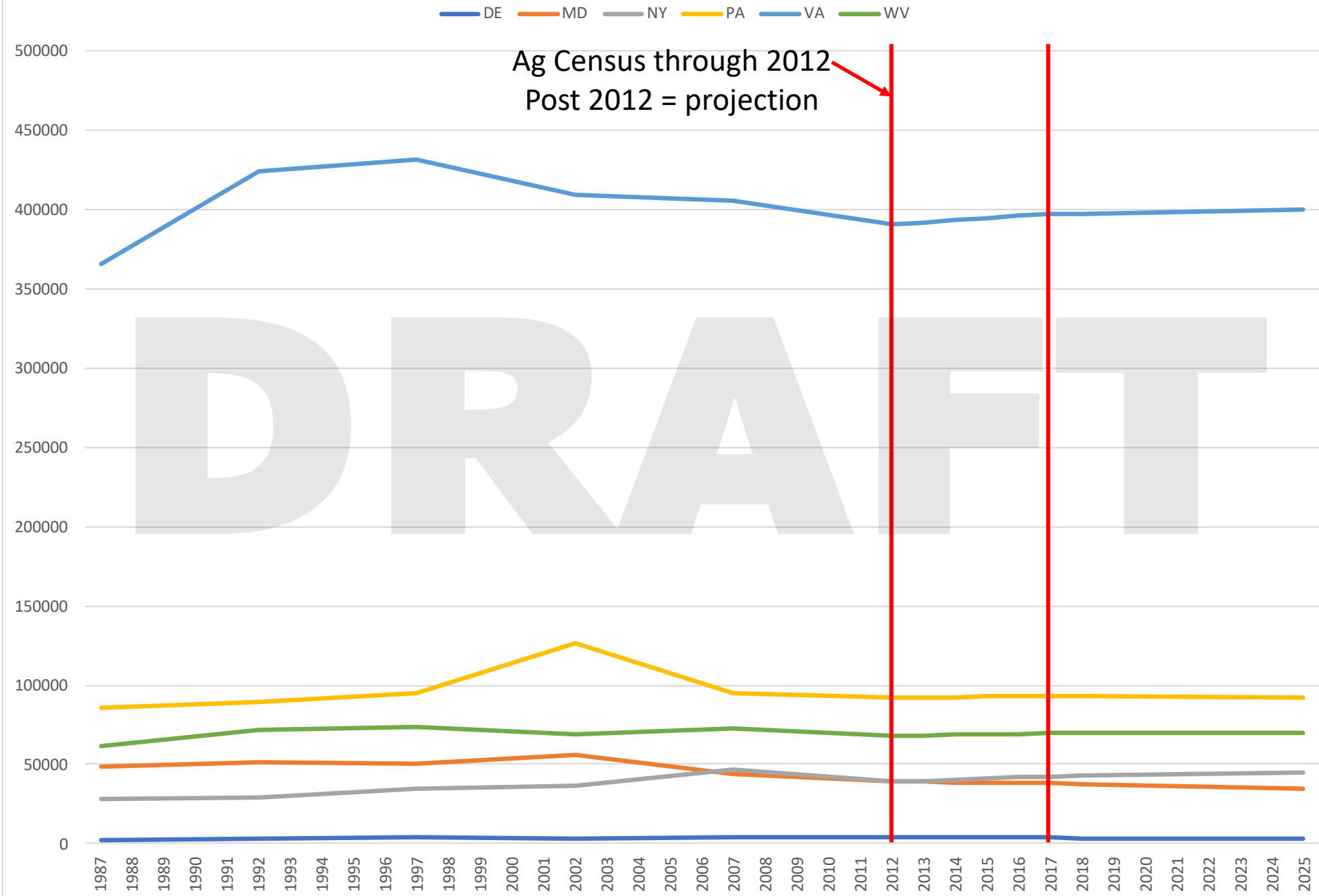
- Decreases in animal manure nutrients, generally, reduce loads.
- Increases in animal manure nutrients can be offset.
 - BMPs
 - Changes in crop types the manure is applied to
 - Less chemical fertilizer use
- It is unknown at this point the effects of the changes in animals on changes in loads to the CB.

Dairy

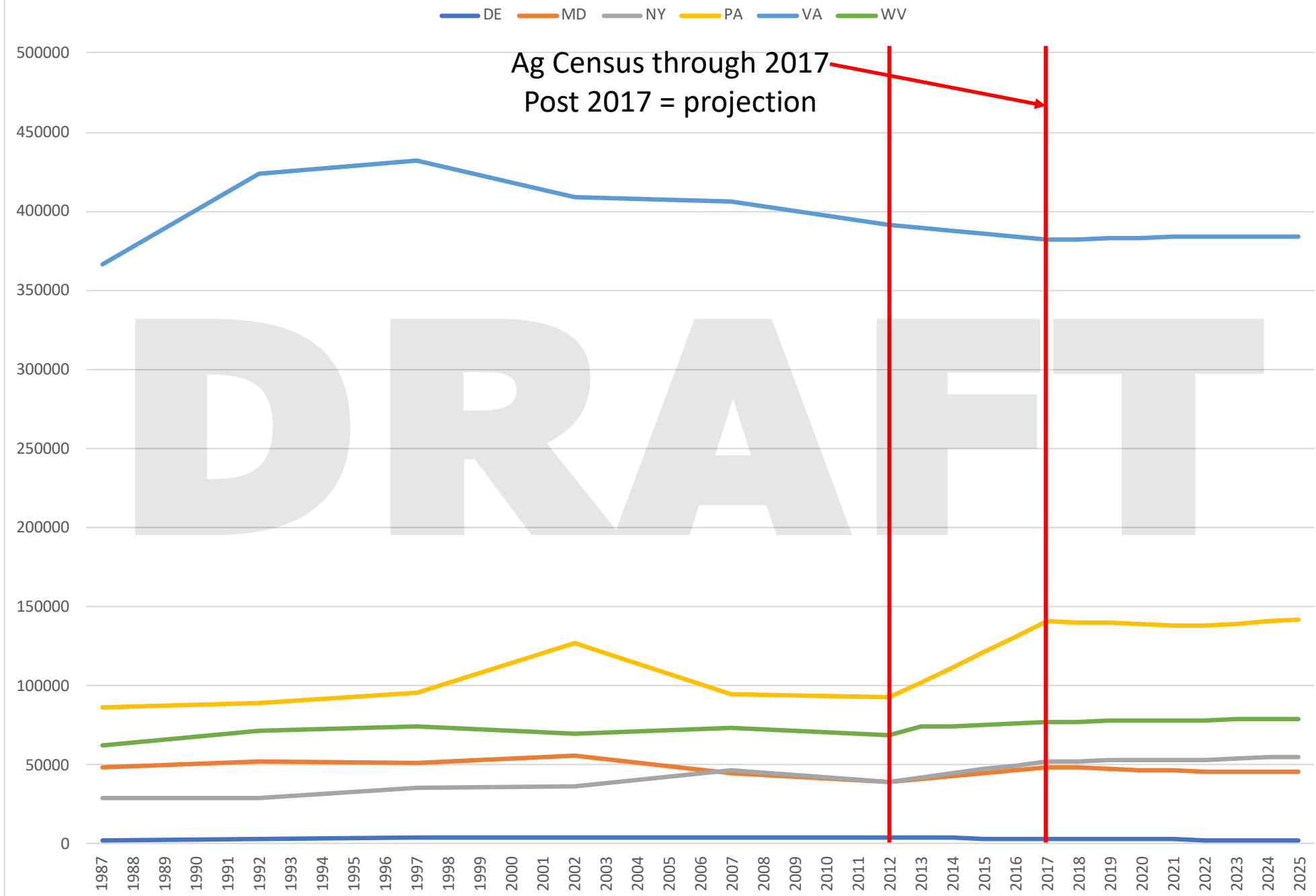




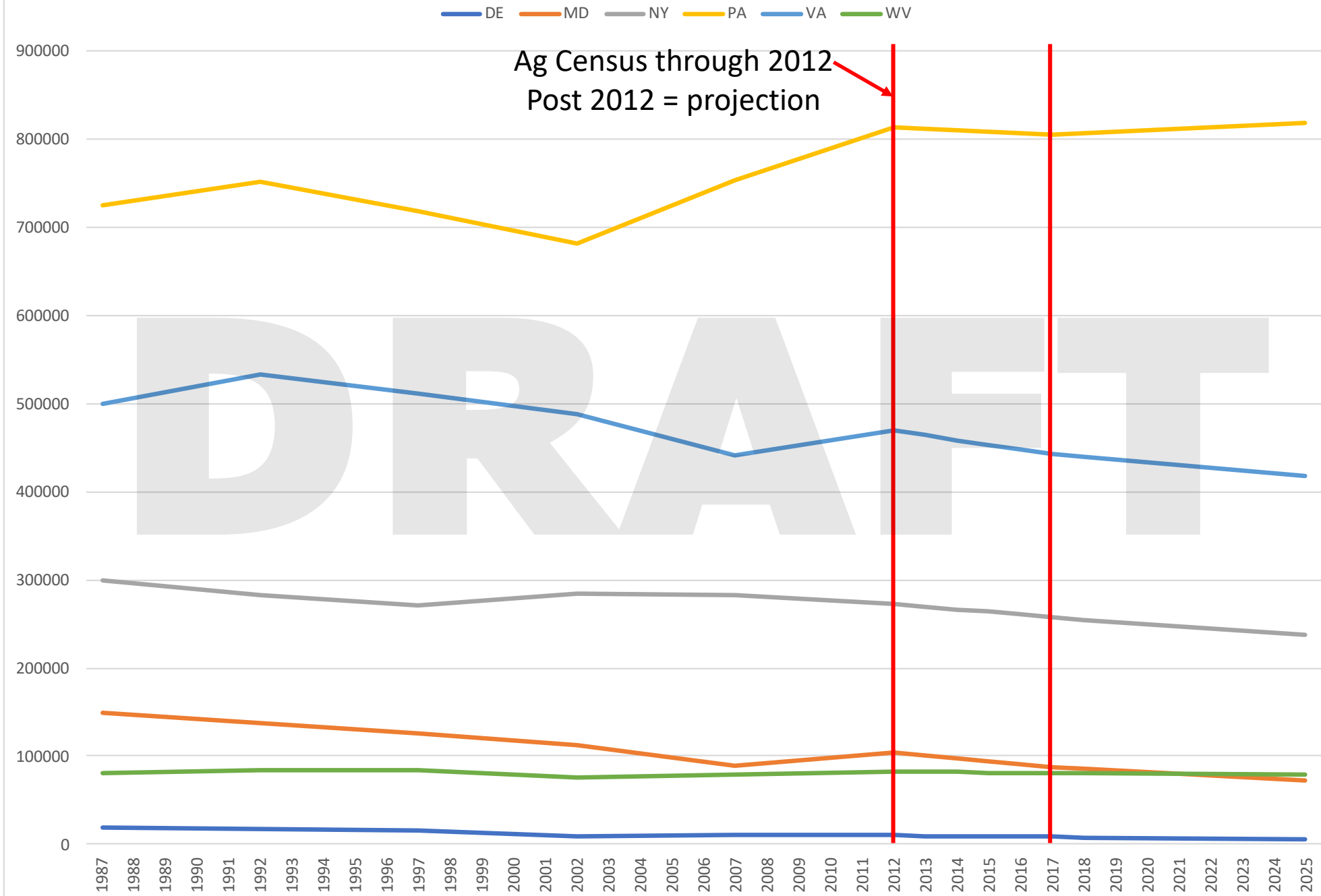
Beef



Beef



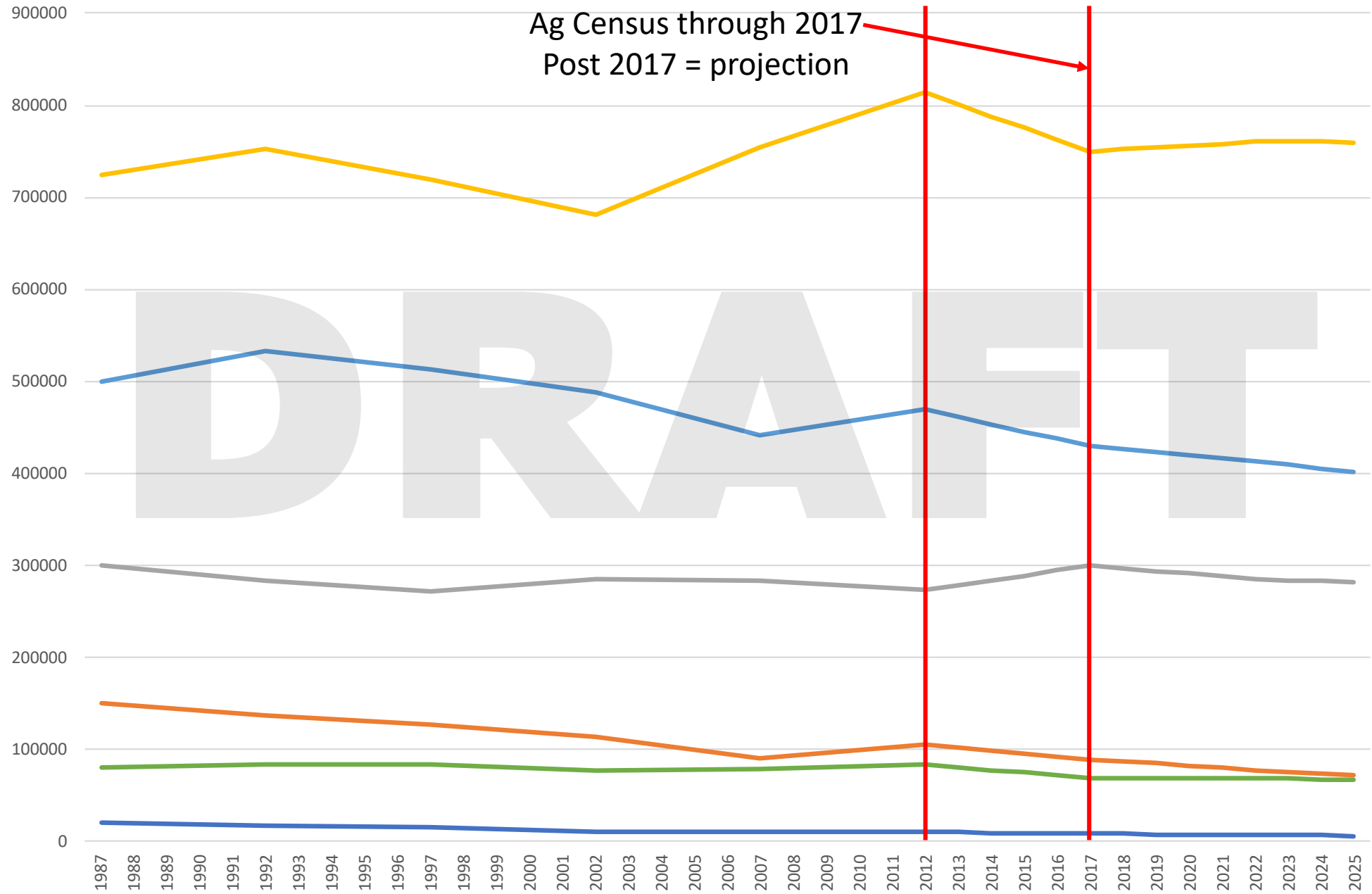
Other Cattle



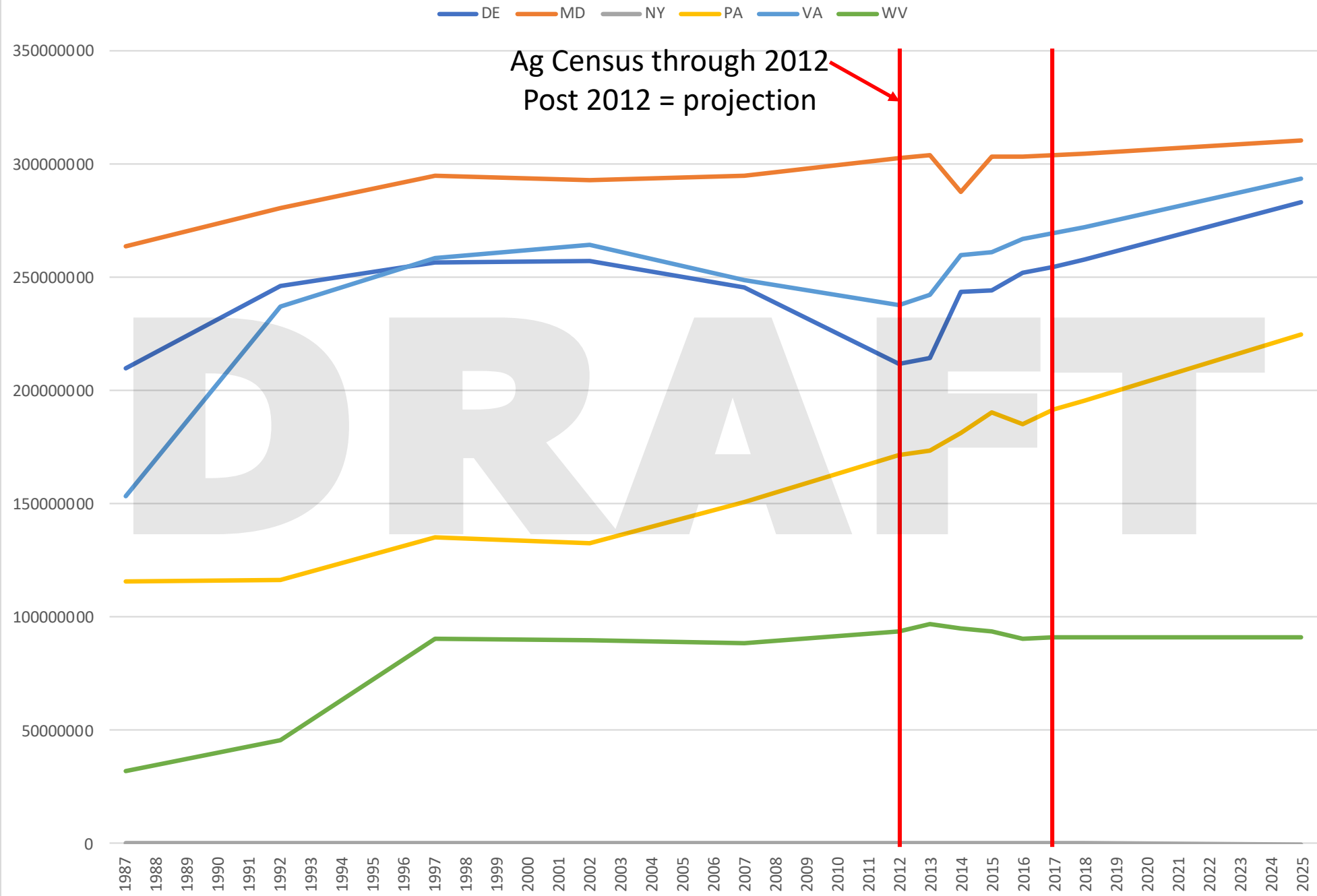
Other Cattle

DE MD NY PA VA WV

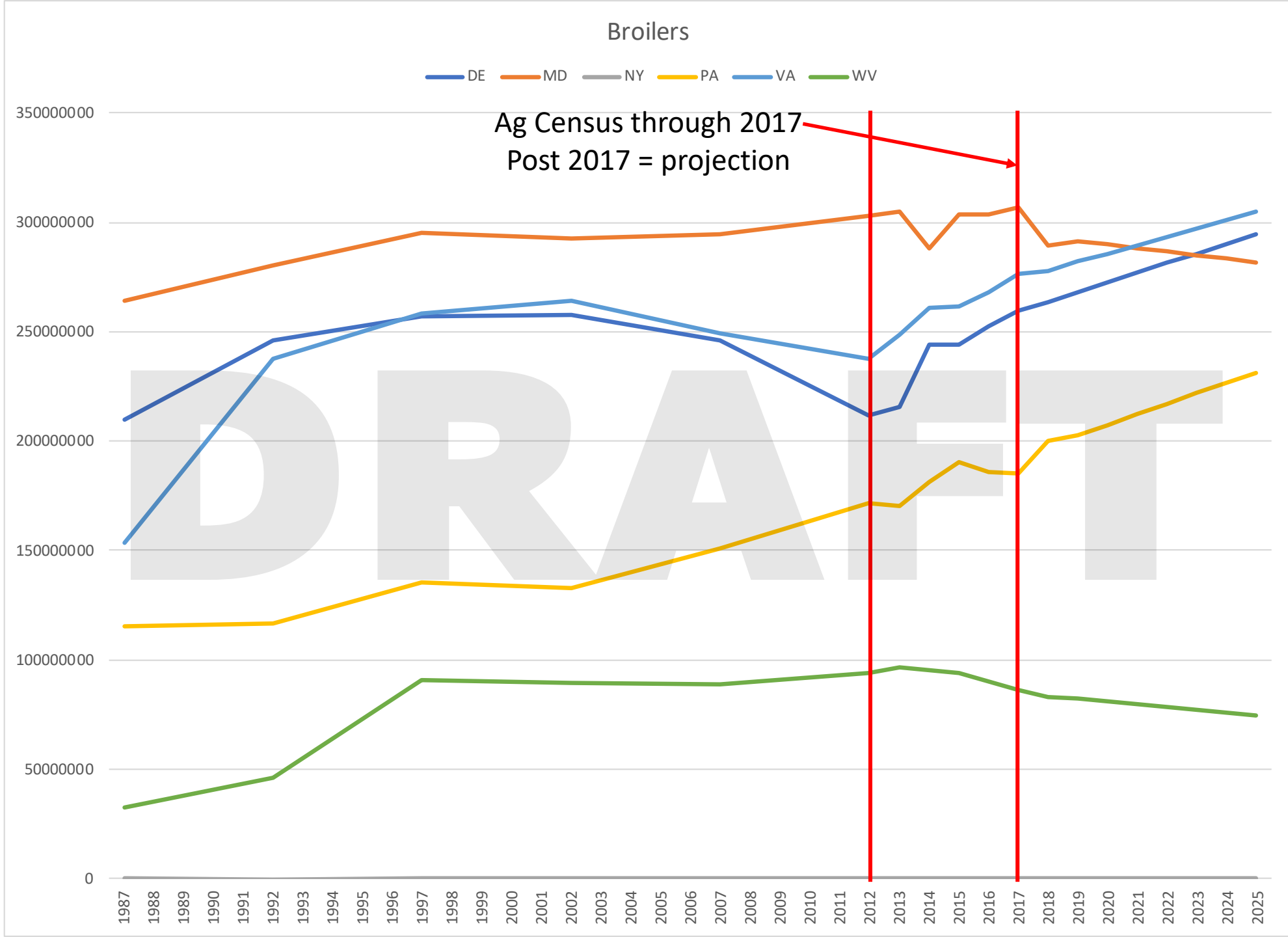
Ag Census through 2017
Post 2017 = projection

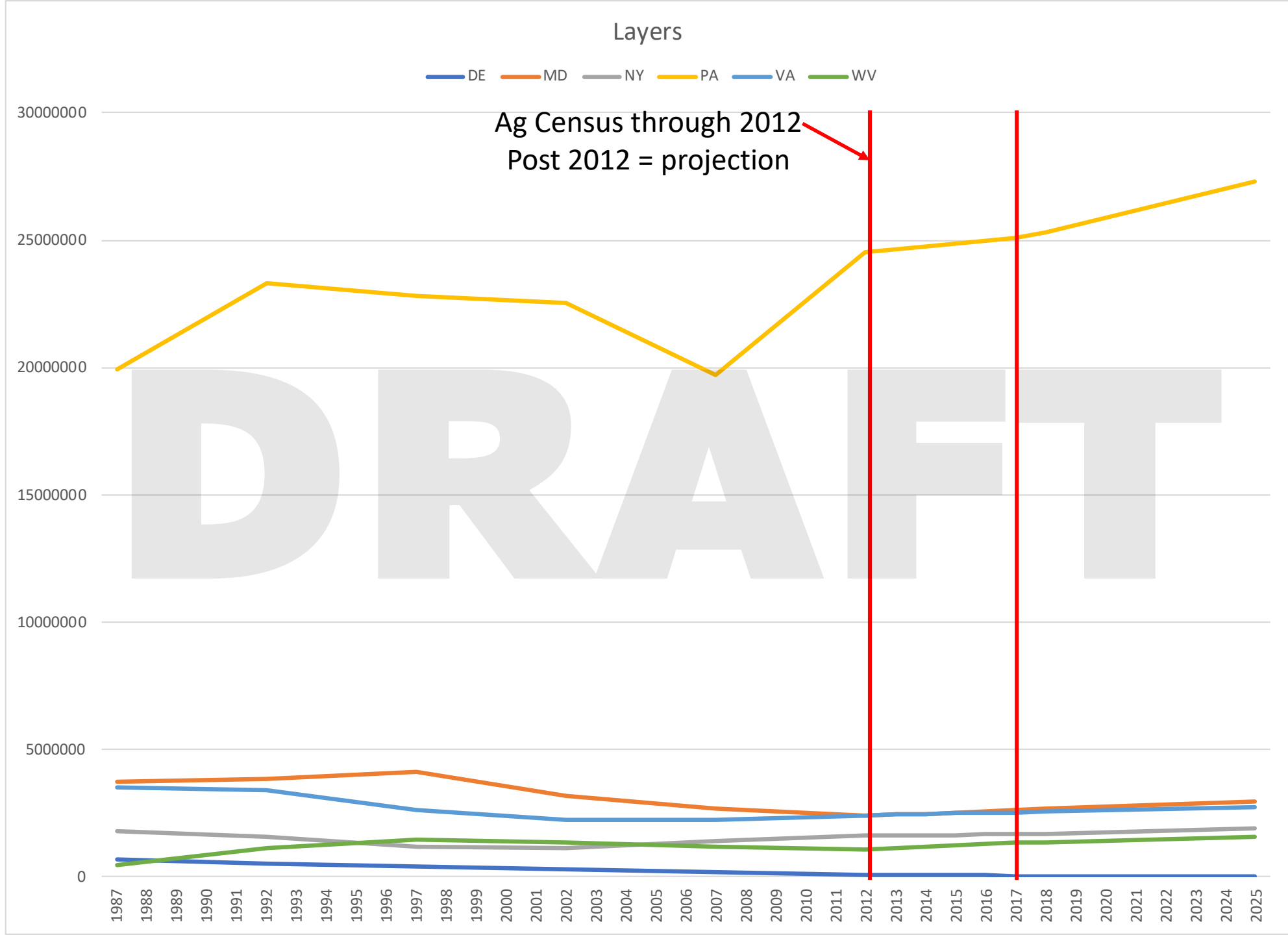


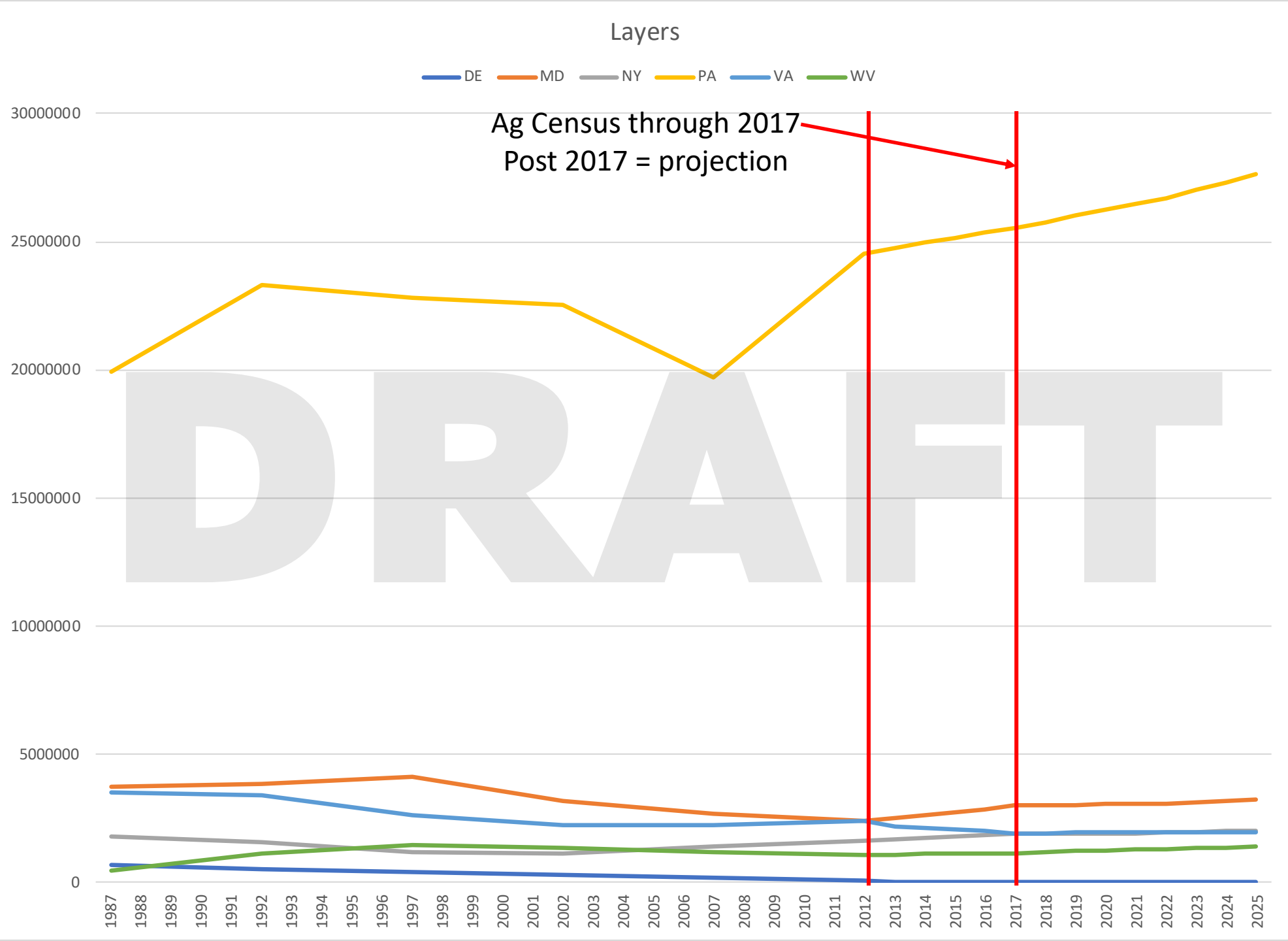
Broilers



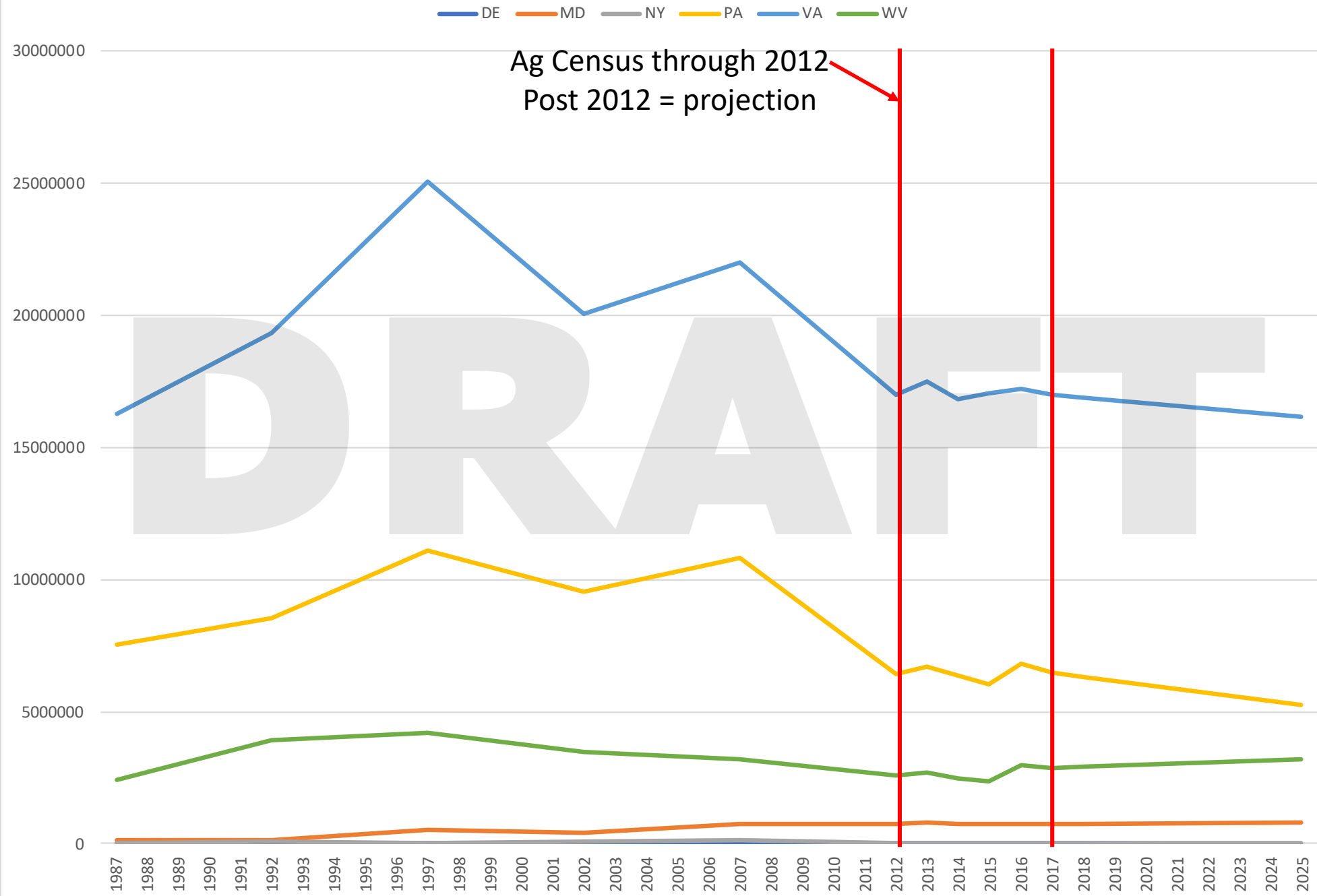
Broilers



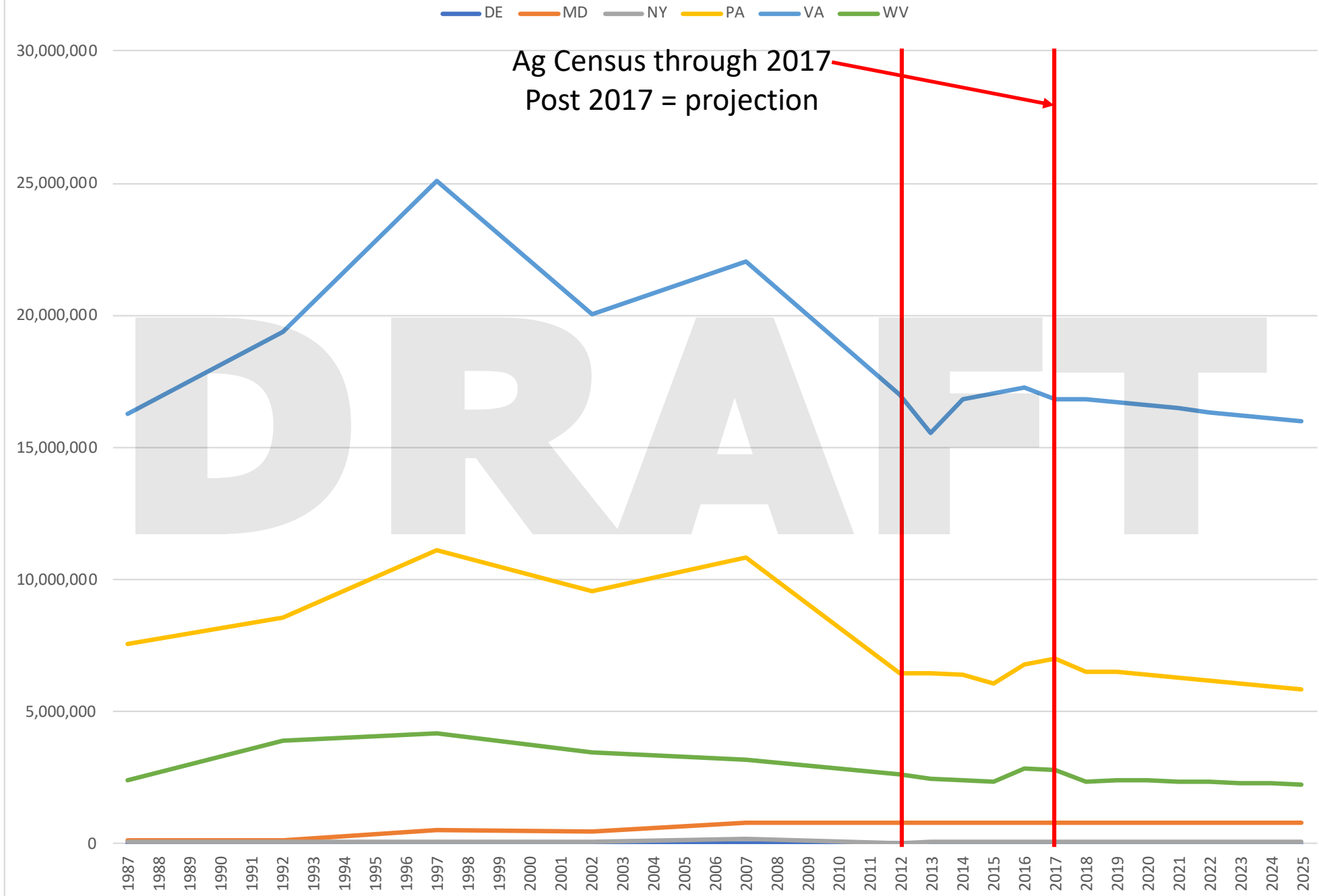




Turkeys



Turkeys





2017 Census of Agriculture Categories

- CBP Animal Types
- CBP Land use/Crop Types and Categories



2017 Census of Agriculture

Animal Forecast Methods

- Detailed documentation of the methods and data used for calculating land use and crop acres – including data from the Census of Agriculture – are part of the Phase 6 Watershed Model documentation <https://cast.chesapeakebay.net/Documentation/ModelDocumentation>
 - Section 5, Land Use



2017 Census of Agriculture

Crop Forecast Methods

- Forecasts use methods recommended by Ag Modeling for Phase 6 Watershed Model (CAST) and approved through Agriculture Workgroup, Water Quality GIT, etc.



2017 Census of Agriculture

Crop Forecast Methods

- For crops, forecasts are by crop categories at the county scale
- Categories are then proportioned to individual land use types according to latest Census of Agriculture
- For forecasts, greater weight is given to recent short-term trends than long-term trends



2017 Census of Agriculture

Animals and Crops

- Changes in crop types will increase or decrease nutrient (and sediment) loads – related to the degree of the change and, primarily, the crop nutrient needs.
- It is unknown at this point the effects of the changes in crops on changes in loads to the CB.

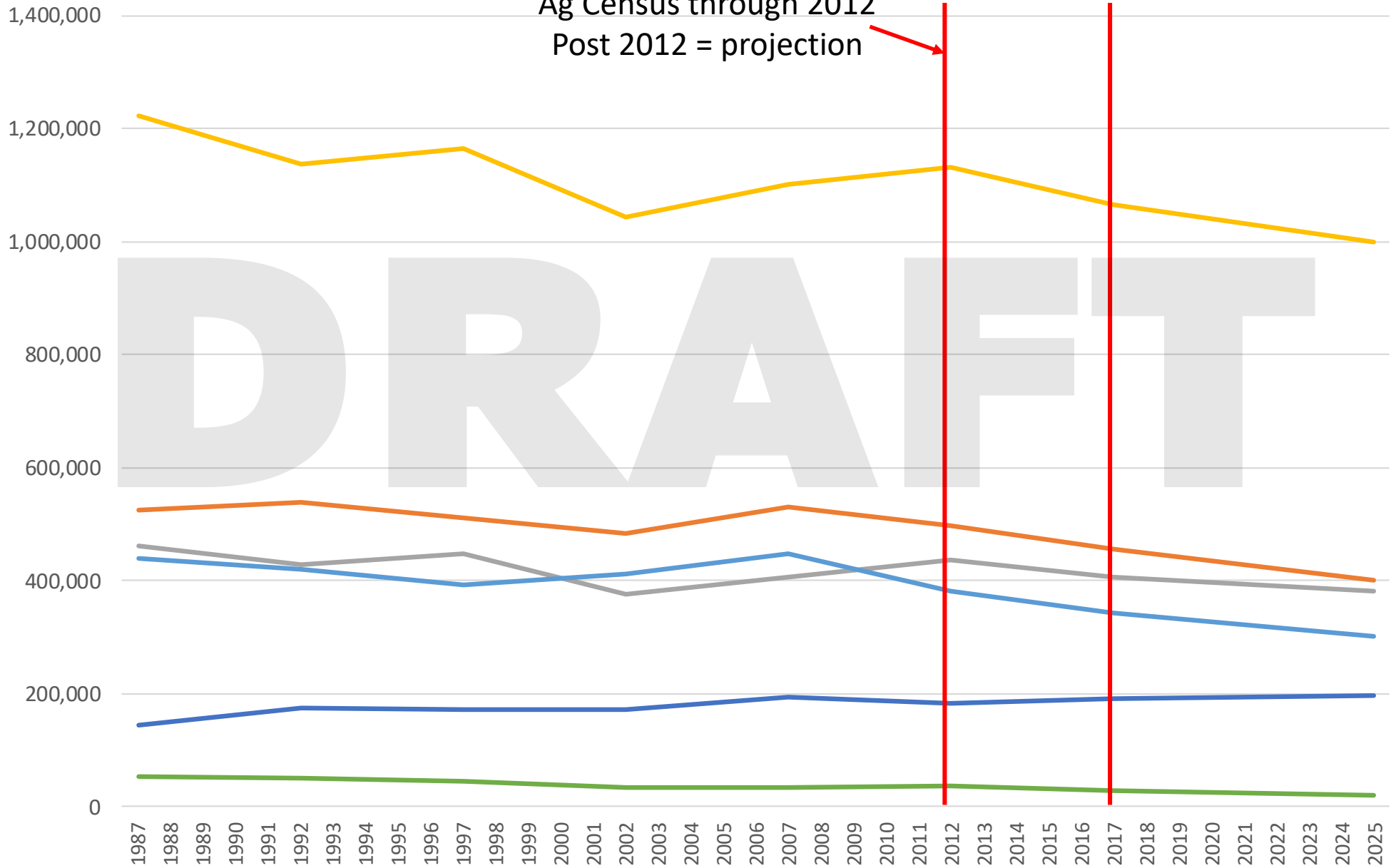
Grains and Silage

Includes the crops corn and sorghum for grain and for silage or greenchop that are not double-cropped

DE MD NY PA VA WV

Ag Census through 2012

Post 2012 = projection



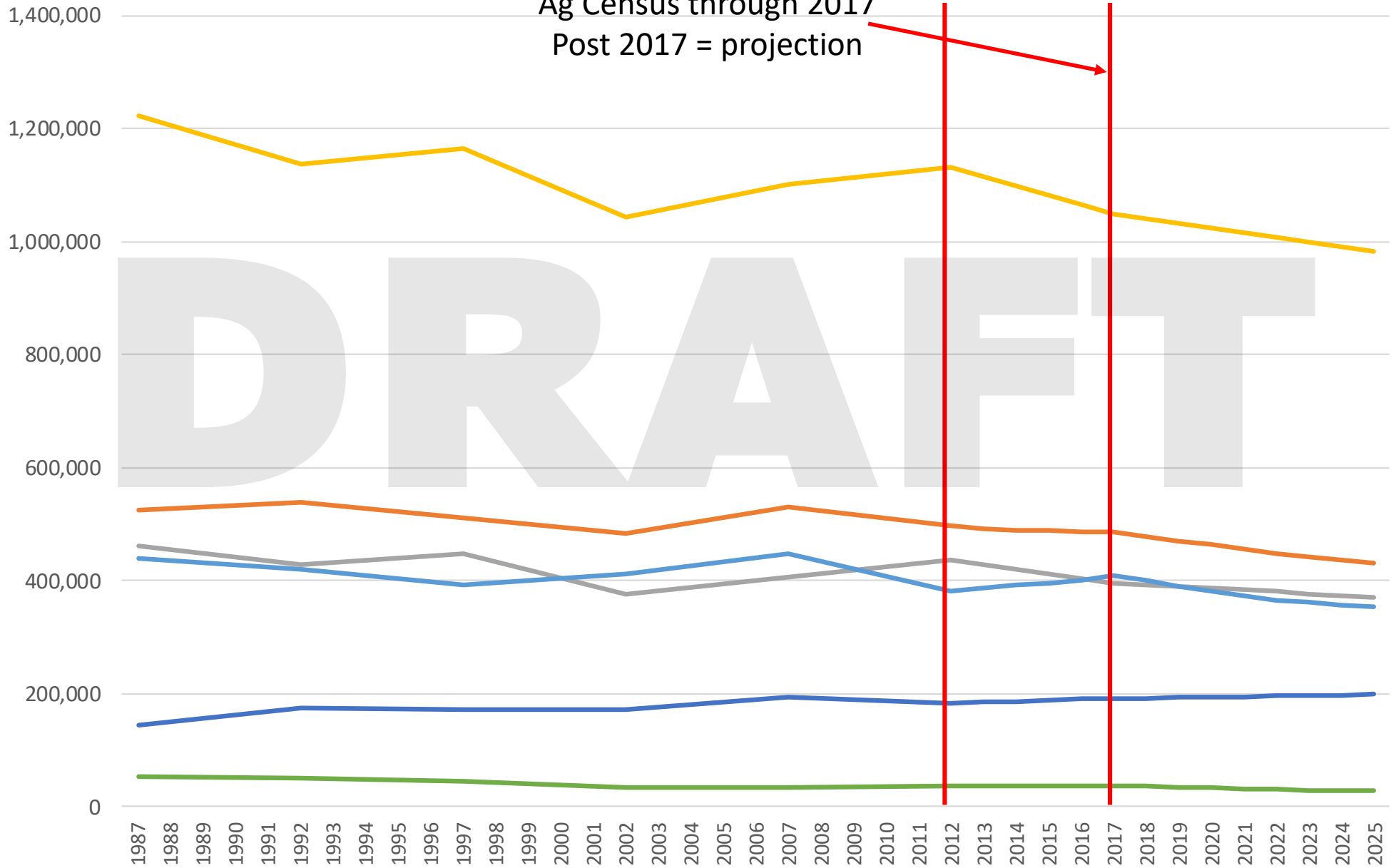
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DE MD NY PA VA WV

Ag Census through 2017

Post 2017 = projection



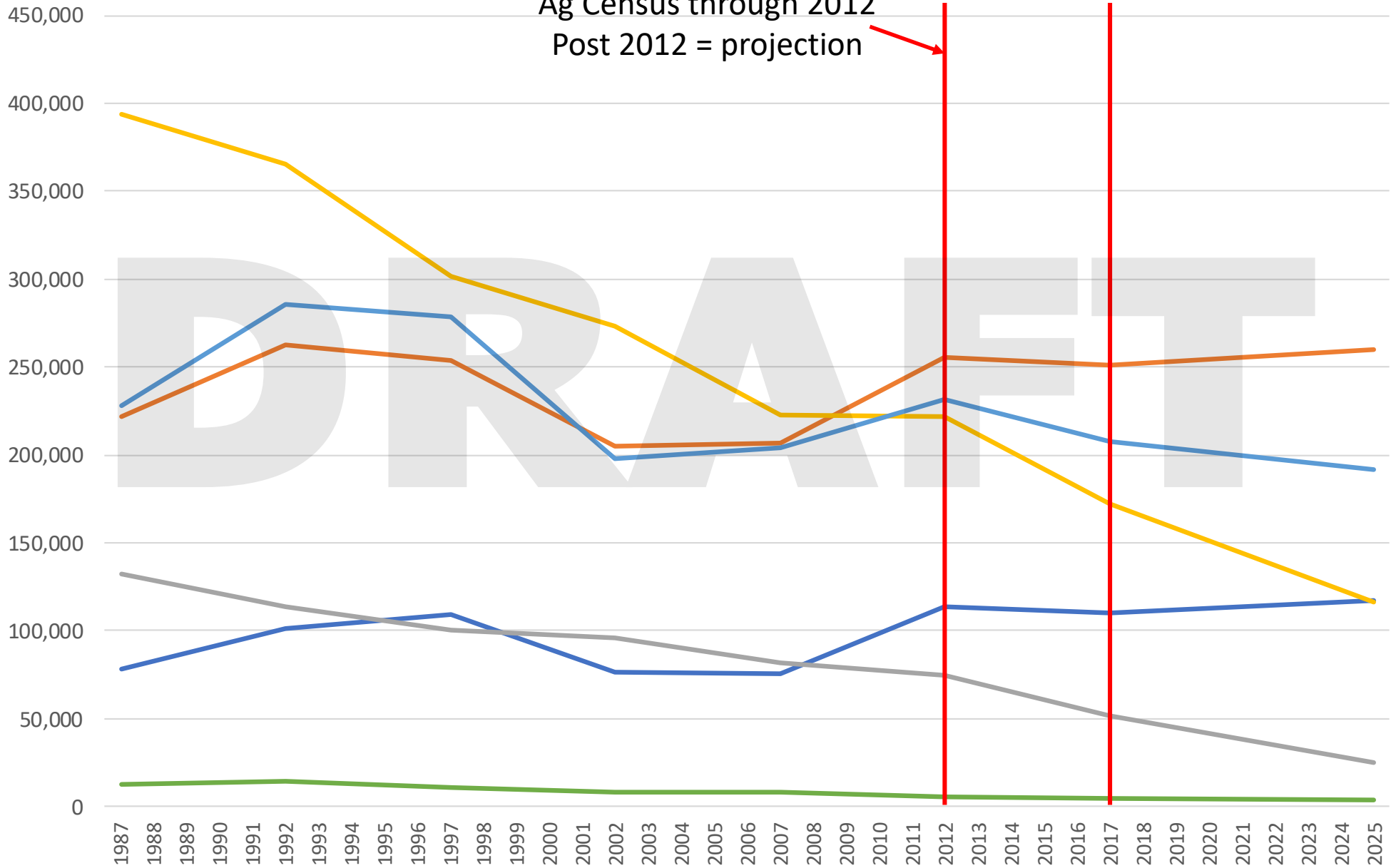
Small Grains and Grains

Includes canola, oats, rye, wheat, barley, buckwheat, emmer and spelt, and triticale that is not double-crop

DE MD NY PA VA WV

Ag Census through 2012

Post 2012 = projection



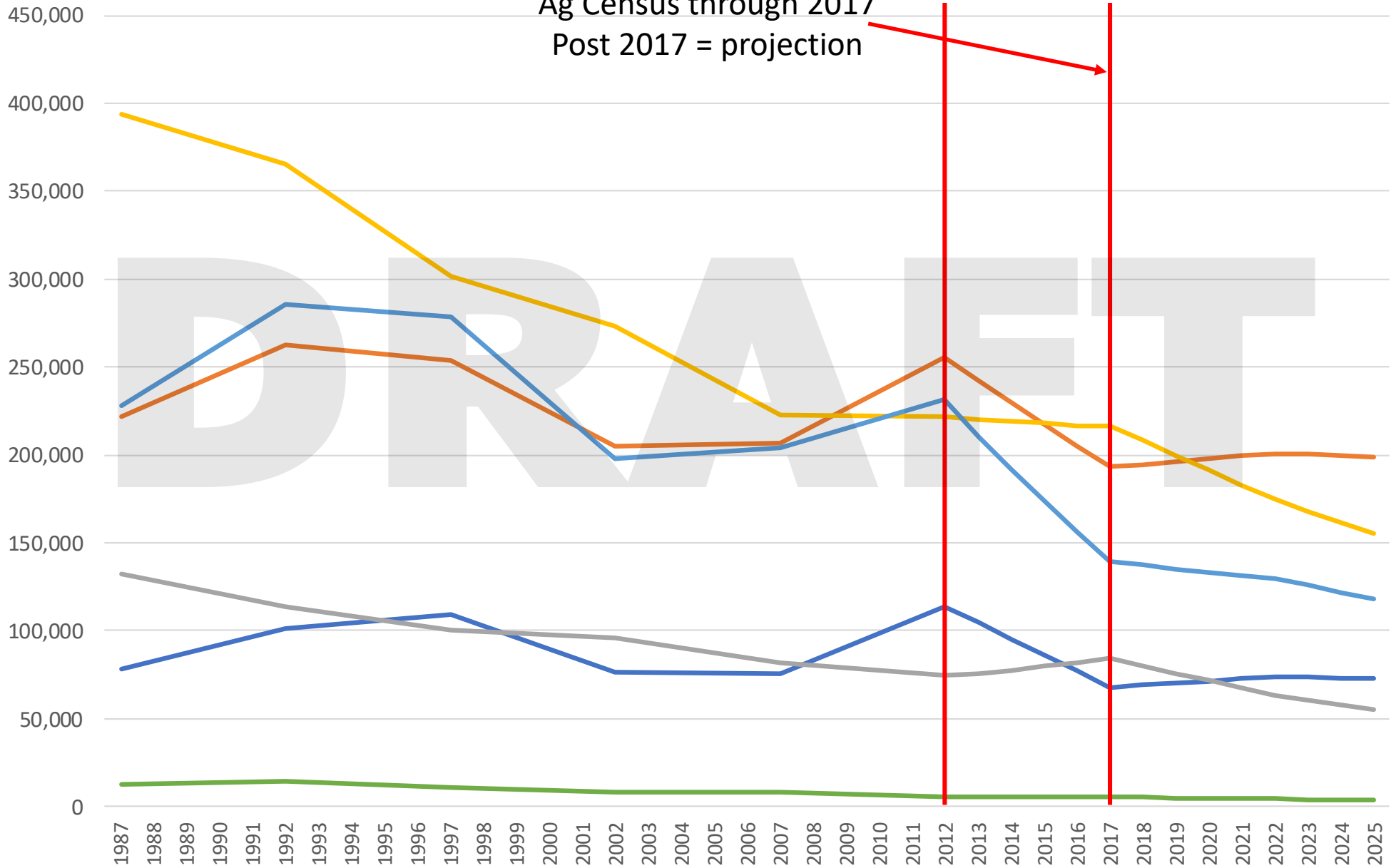
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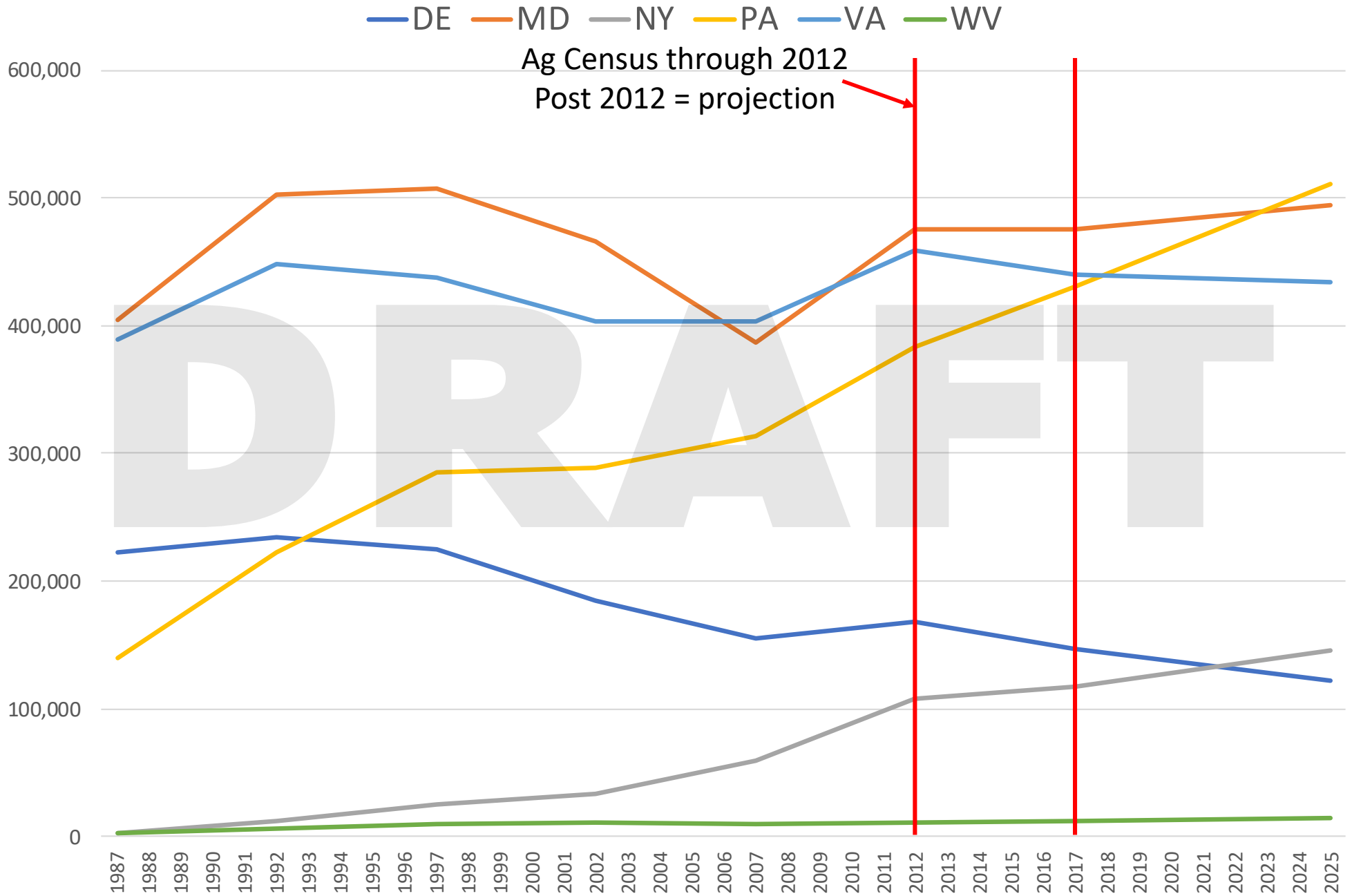
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Ag Census through 2017

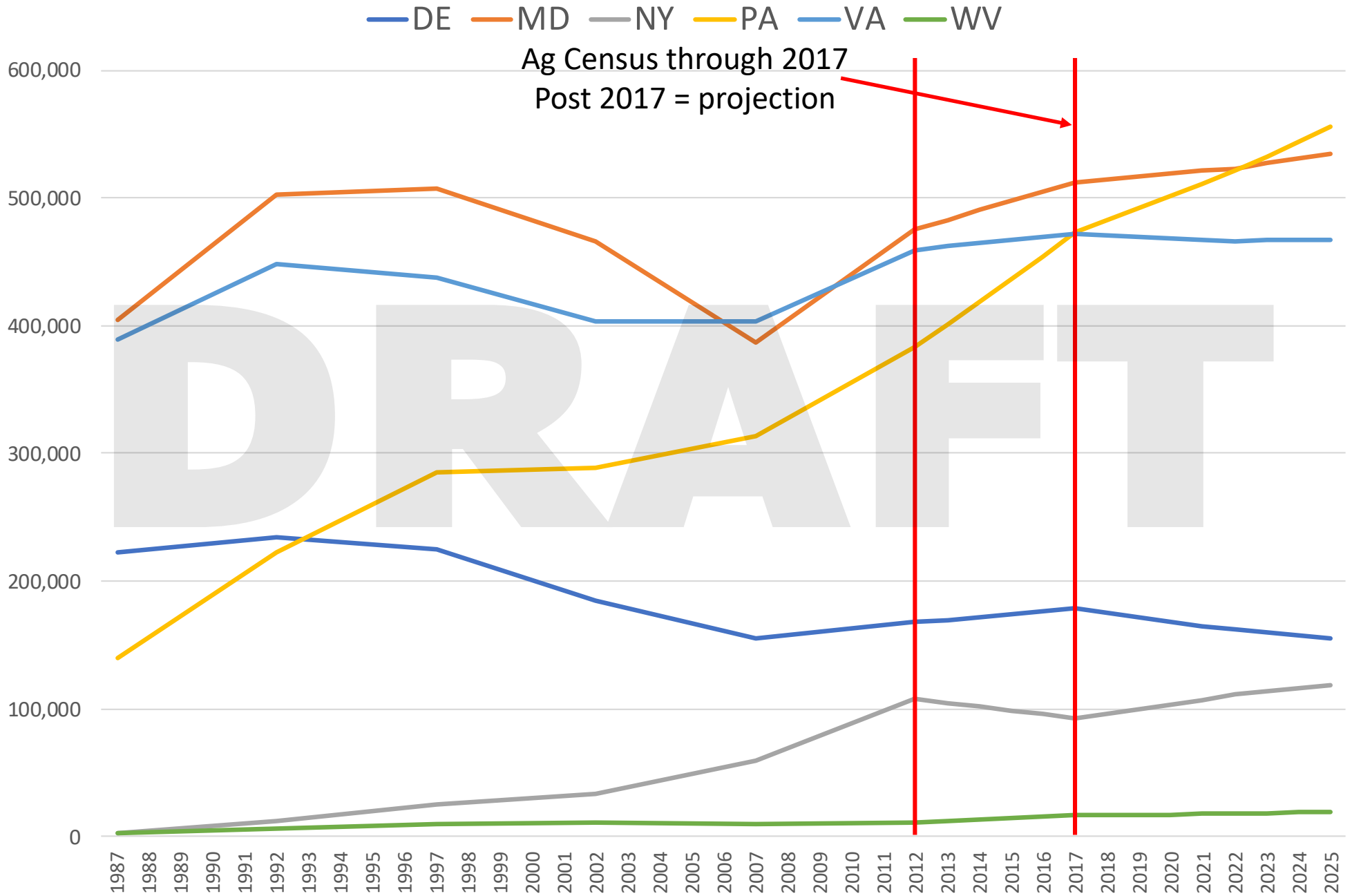
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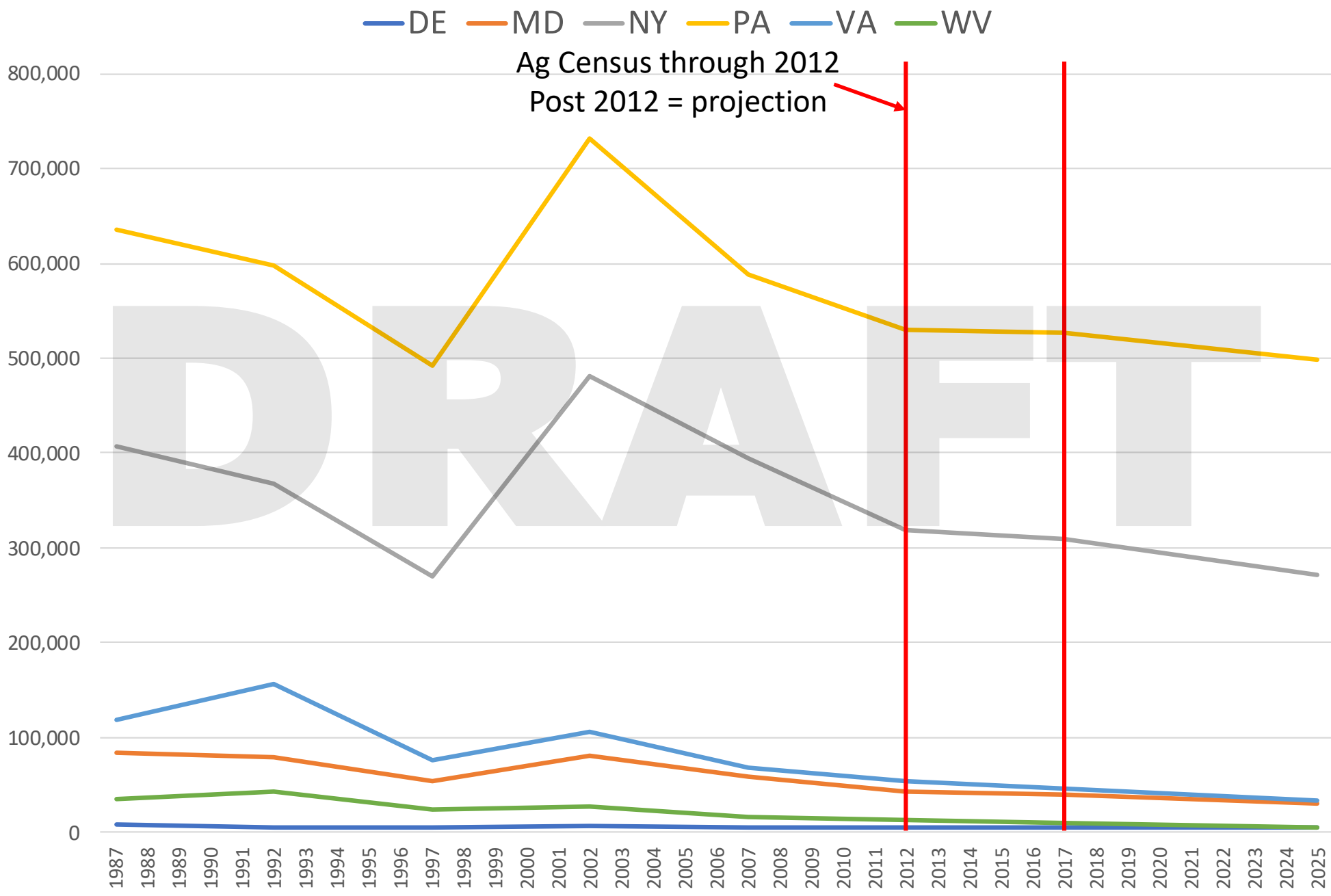
Soybeans



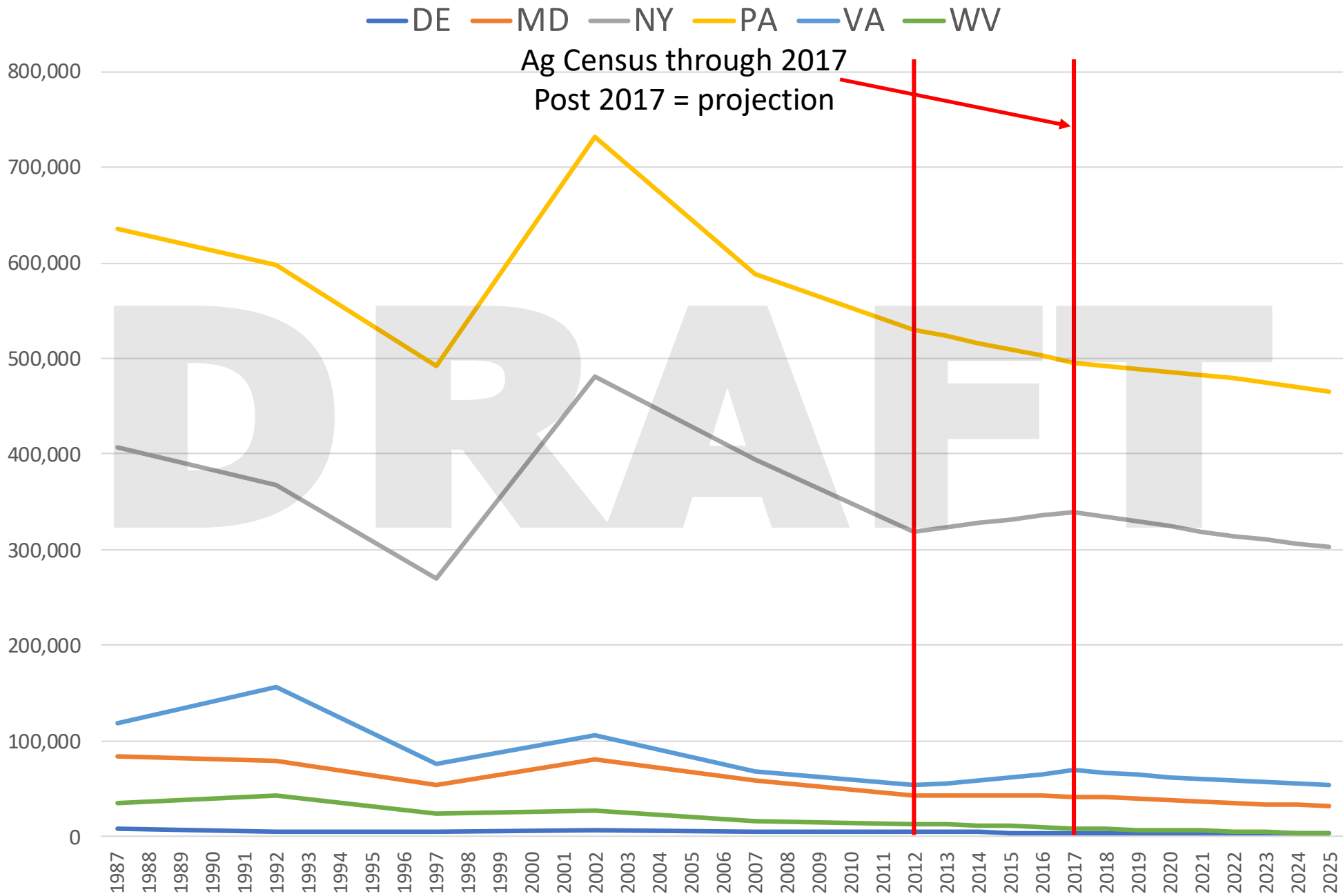
Soybeans



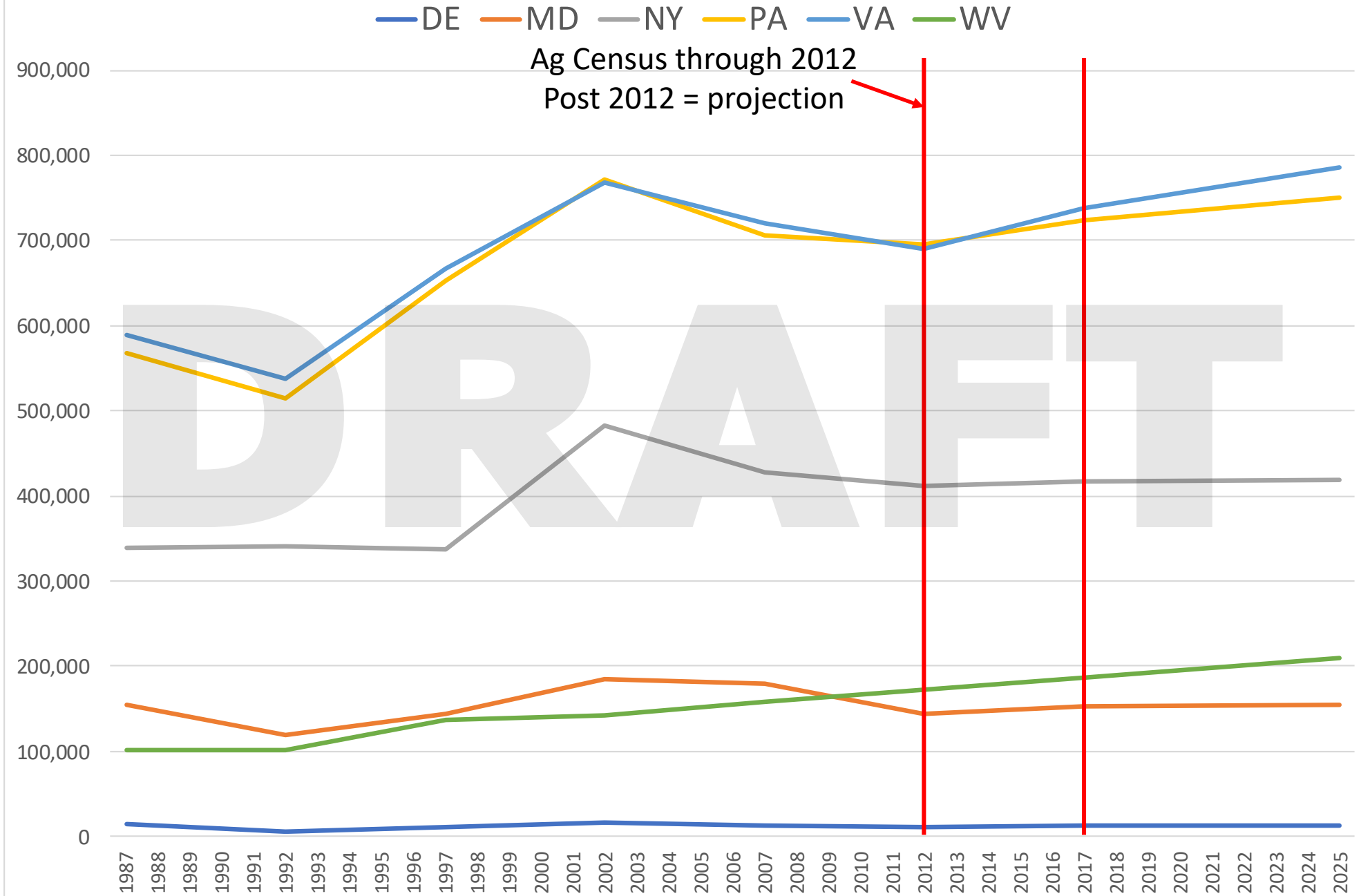
Leguminous Hay



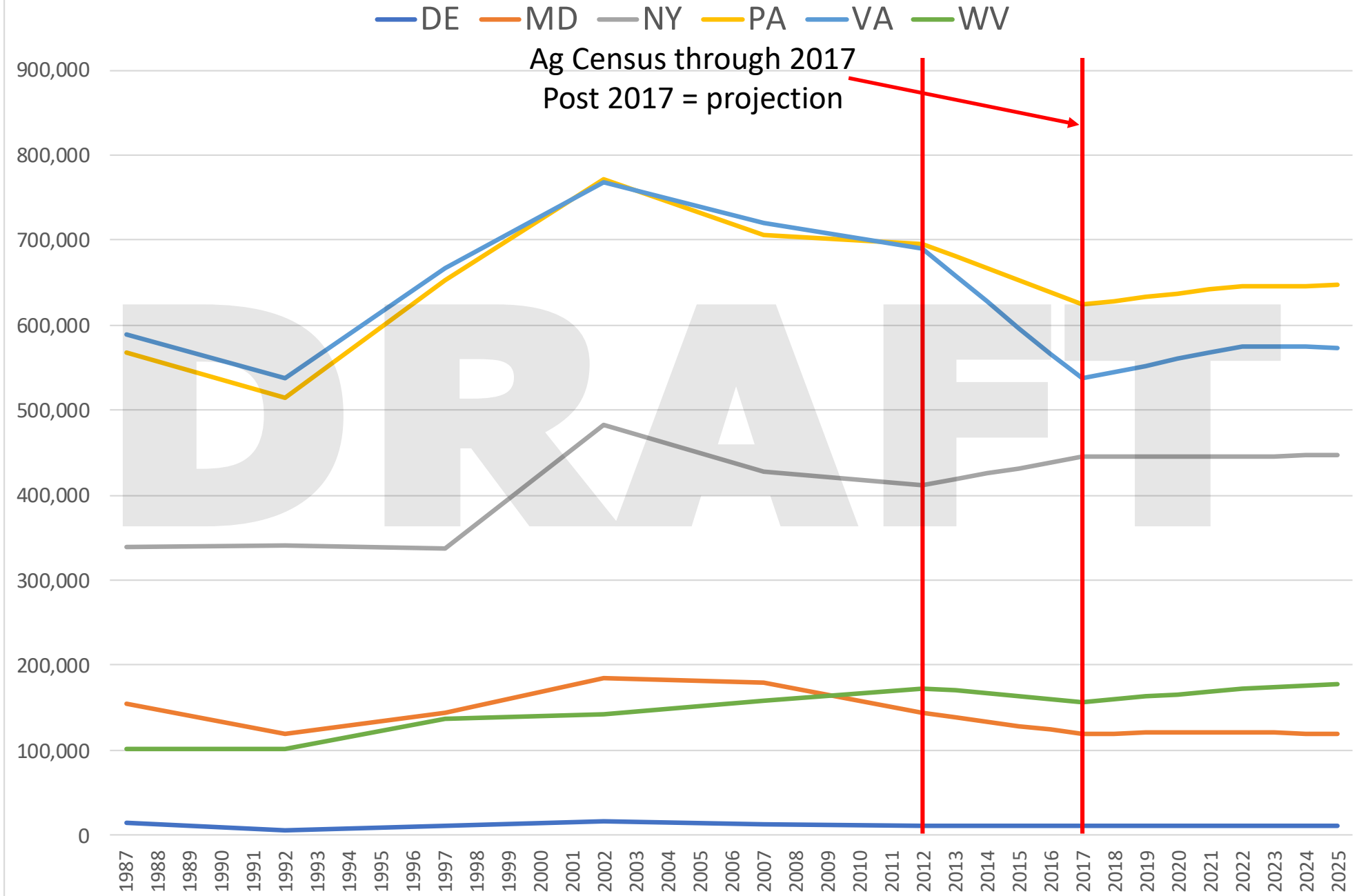
Leguminous Hay



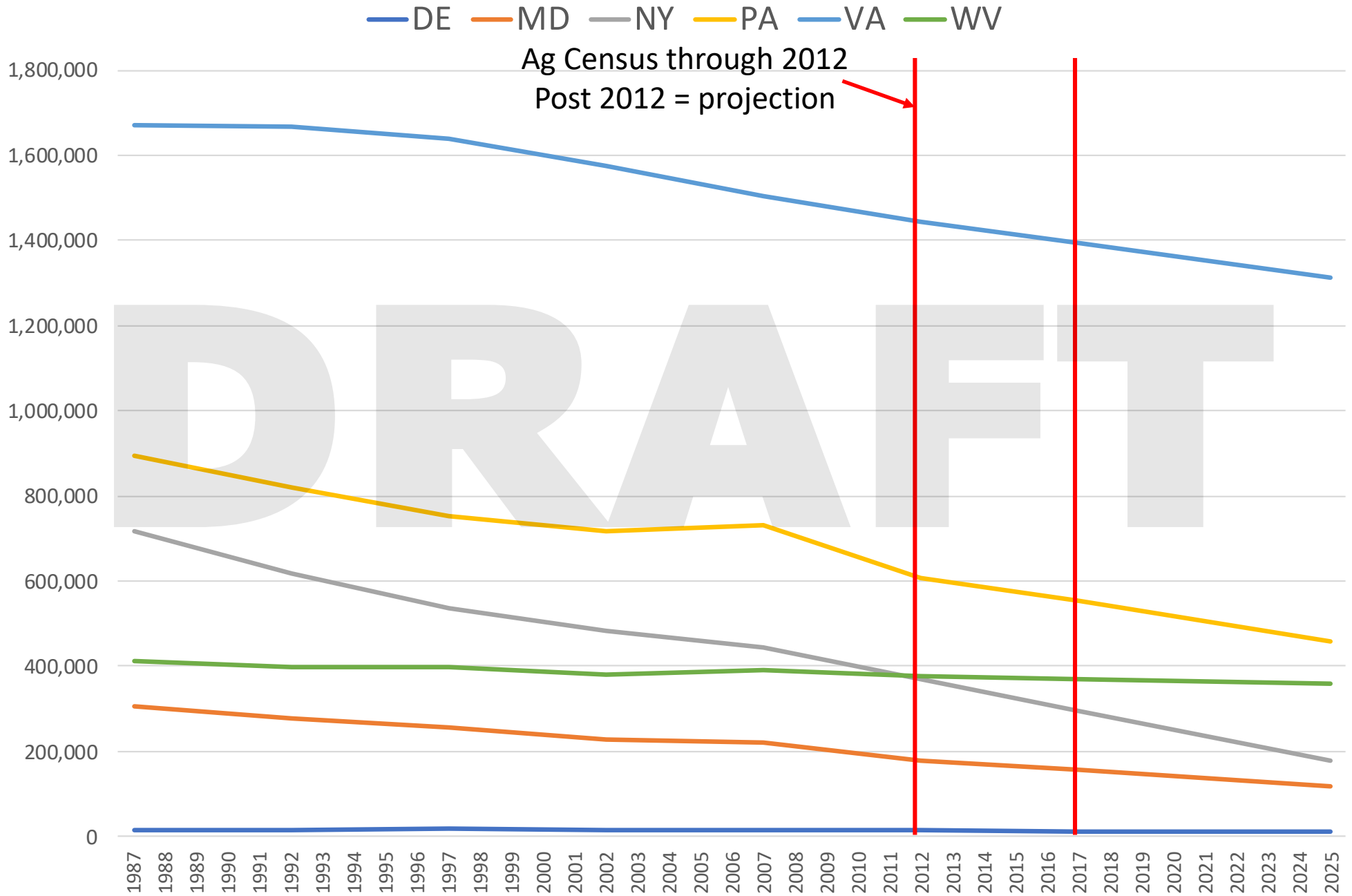
Other Hay



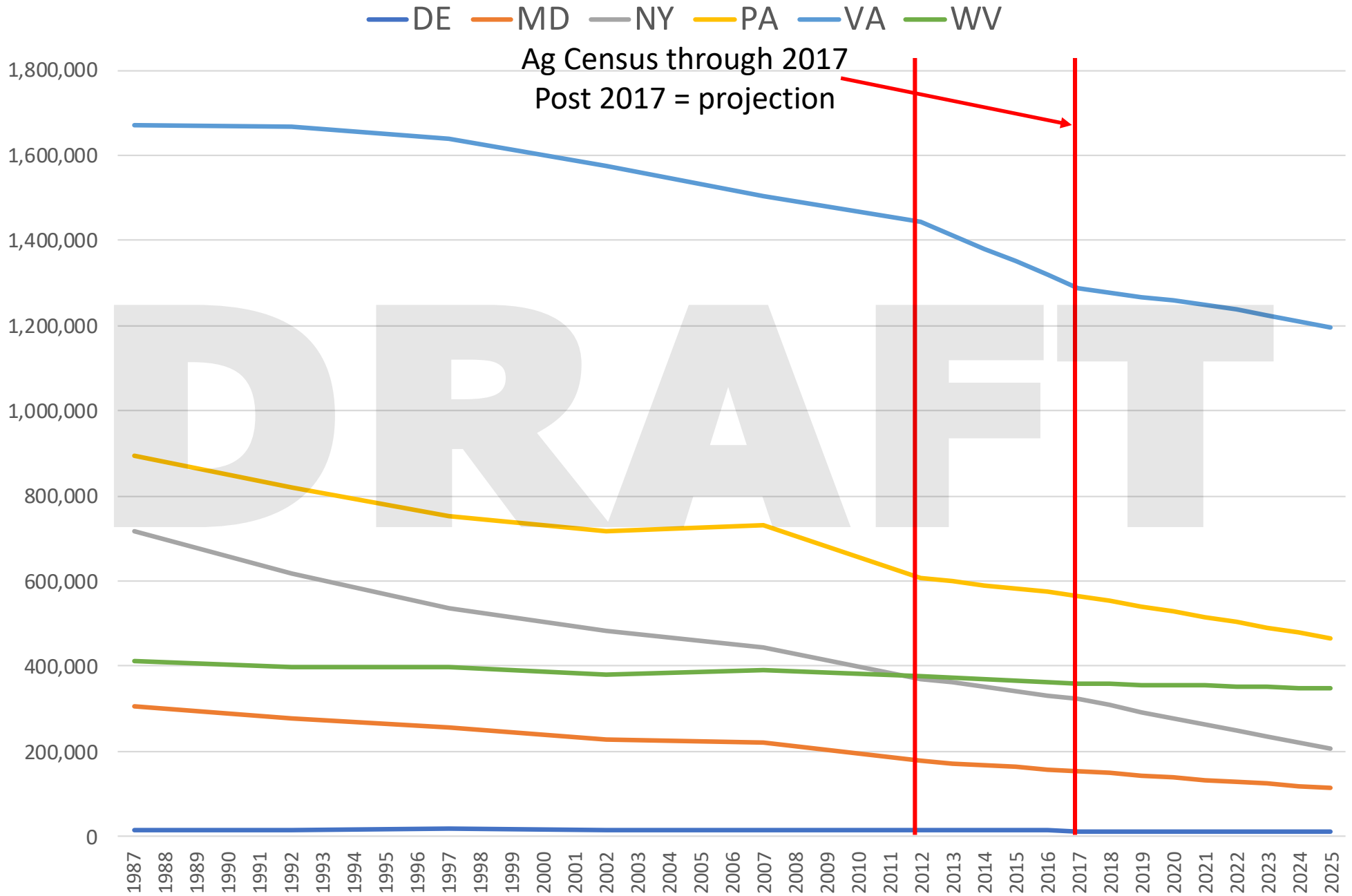
Other Hay



Pasture



Pasture



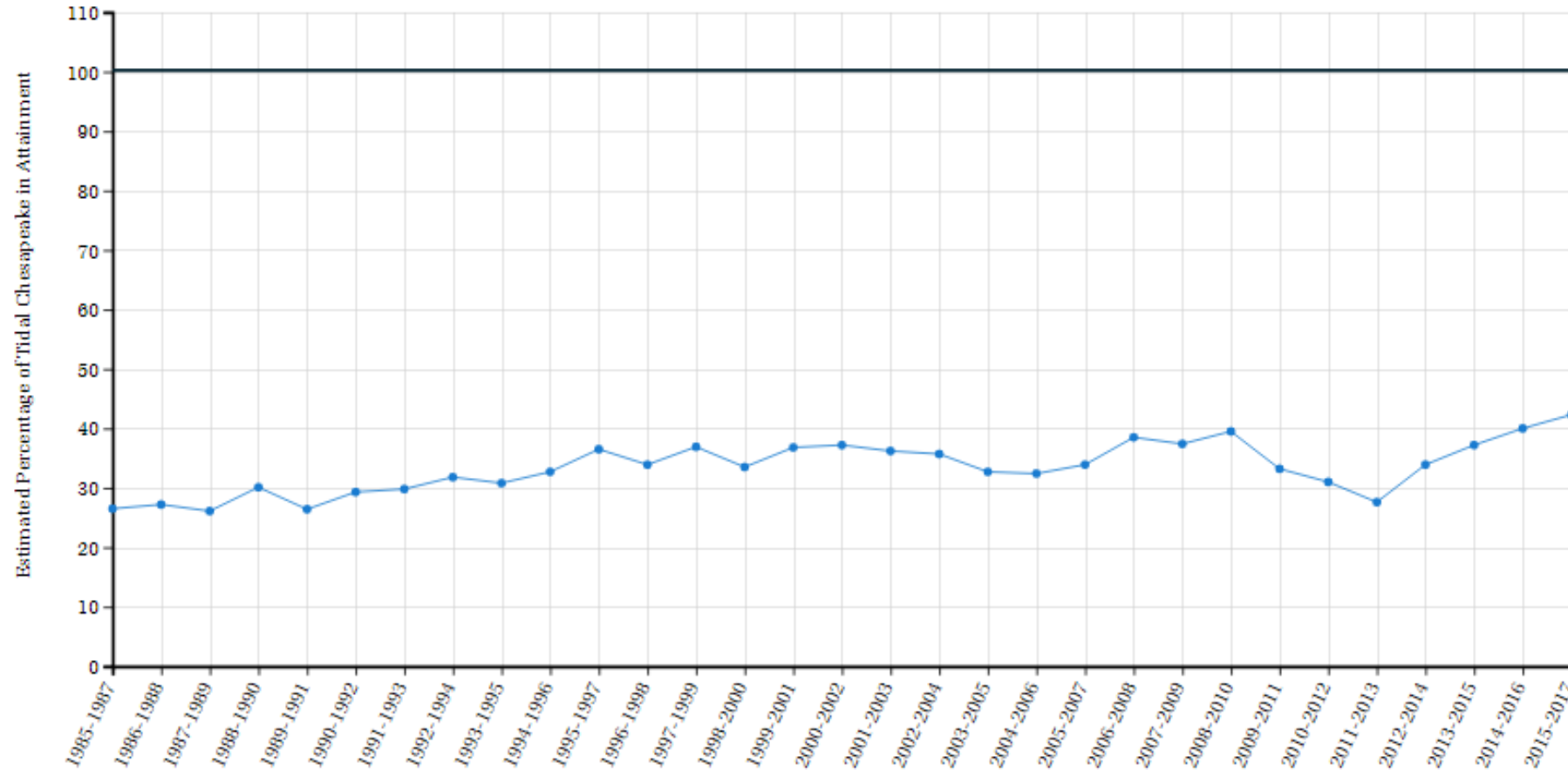


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Water Quality Standards Attainment



Interactive Slider

