# Forestry BMP Reporting

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Forestry Workgroup Meeting
February 6, 2019

# Forestry BMP Reporting

## Meeting Purpose: Improve forestry BMP reporting

**10:45 NEIEN Reporting and Overview – Jeff Sweeney**

**Jeff Sweeney will give an update on the NEIEN annual reporting system, how to fix past years' data, and BMP verification.**

11:30 State Forestry BMP Reporting to NEIEN – States Leads

Each state representative will give a 5-10minute presentation on (1) their role in reporting Forestry BMPs to NEIEN, (2) lessons learned/an update from their meeting with the state NEIEN contact, (3) what changes they're going to make, and (4) what steps will be taken to improve Forestry BMP verification. This item will go through lunch.

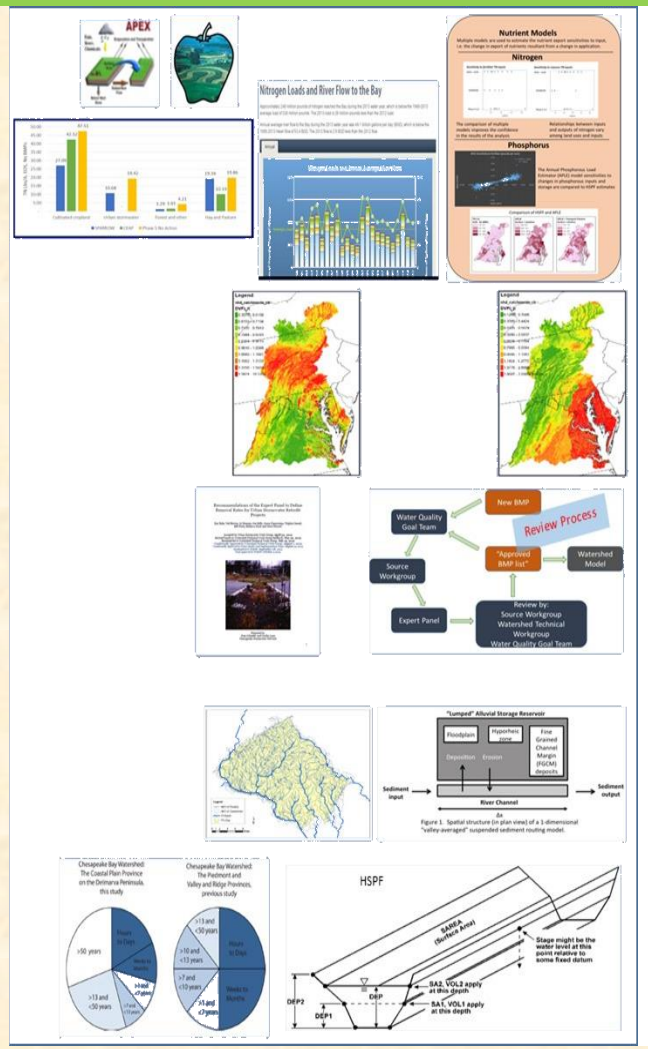
01:30 Discussion of Forestry BMP Reporting to NEIEN – All

02:30 Round Robin – All

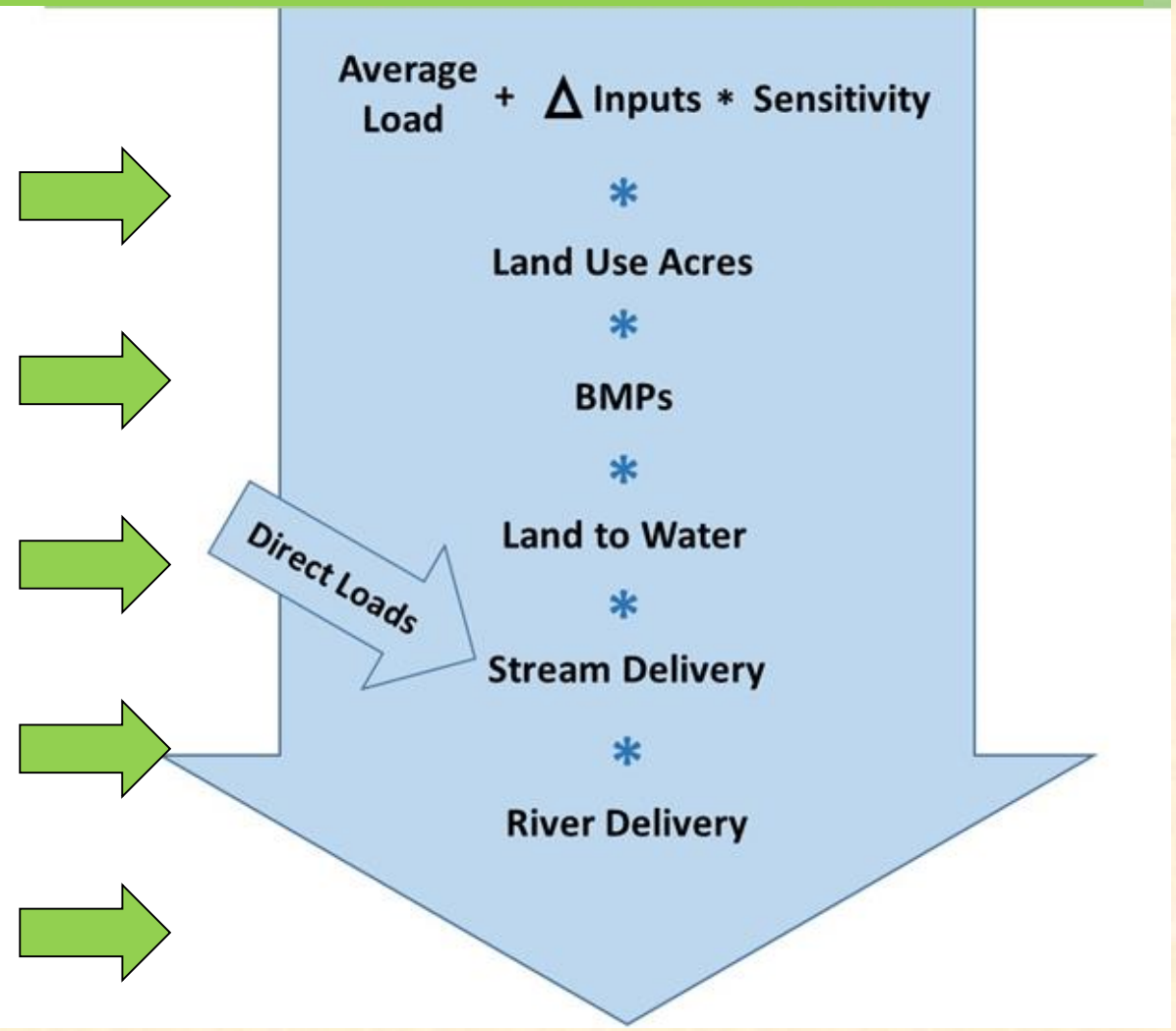
03:00 Adjourn

# Chesapeake Bay Phase 6 Model Structure

## Include Everything

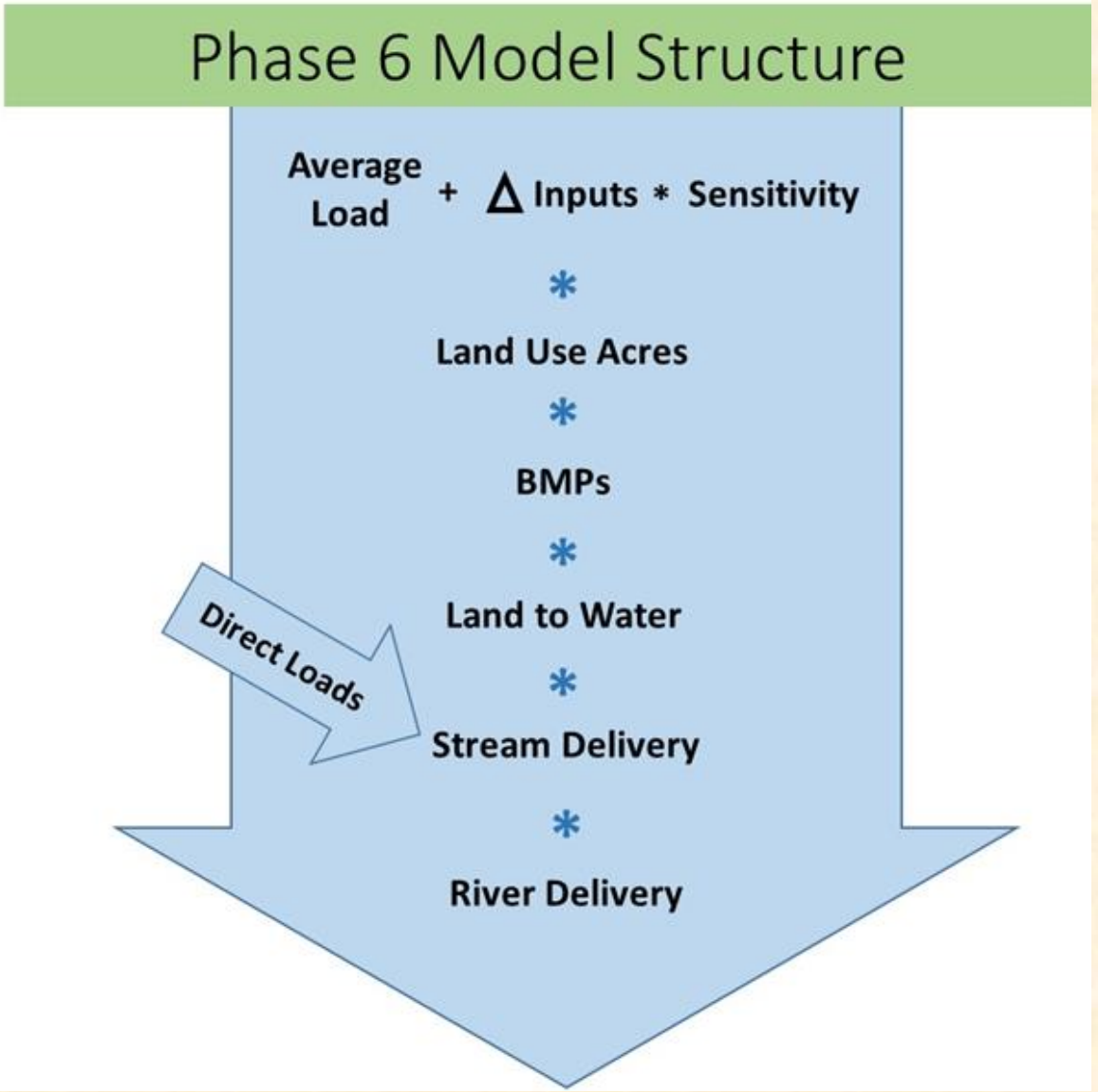


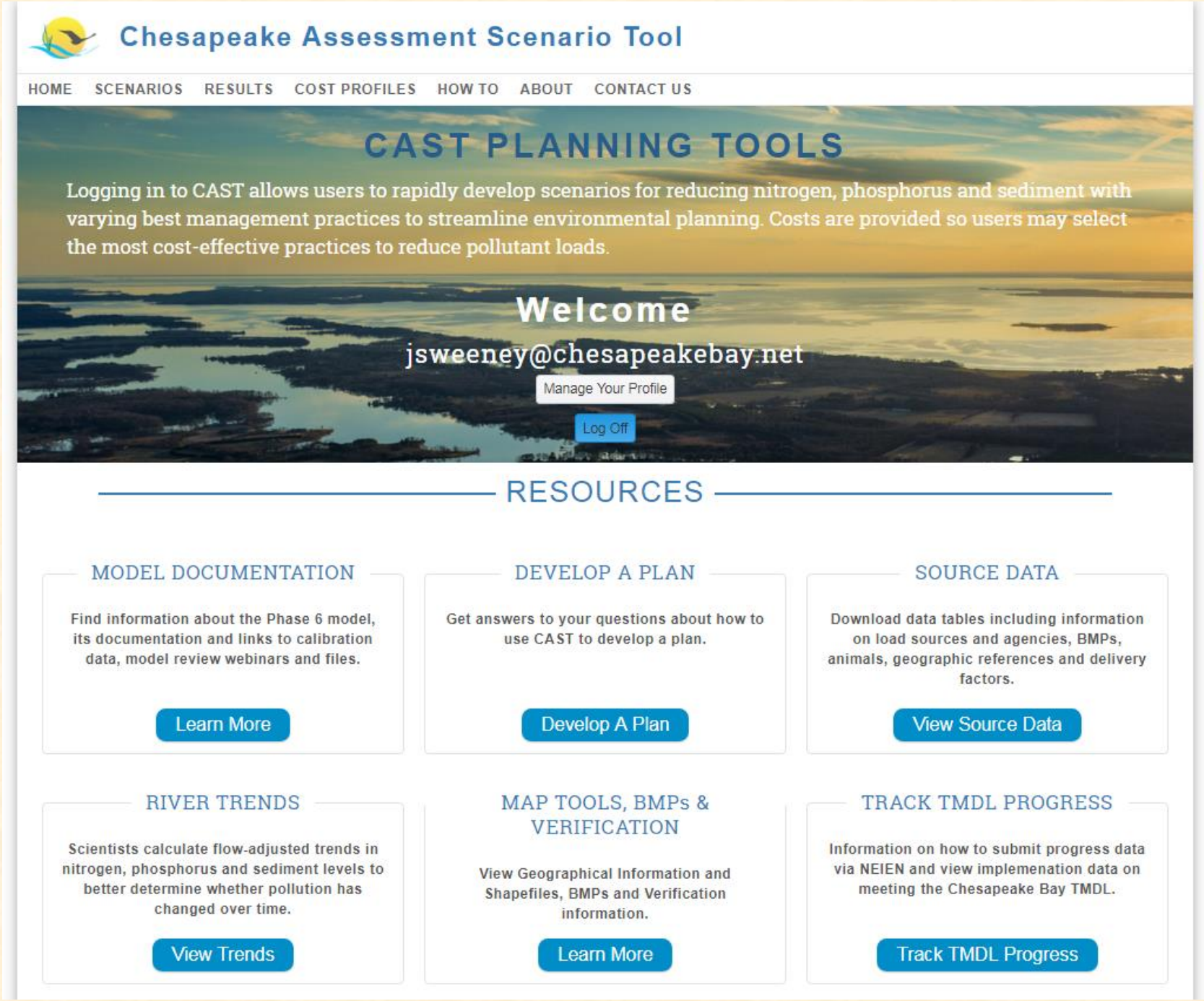

## Keep It Simple



# Chesapeake Assessment Scenario Tool

## CAST = Watershed Model






Chesapeake Assessment Scenario Tool: https://cast.chesapeakebay.net/

- The complex becomes simple with CAST.
- Users select a geographic area, add and remove implementation, and get estimated N, P and SED reductions; and costs in minutes.

# CAST

## Sources and Loads

- Loads are calculated for all sources in the watershed
  - Agriculture, including CAFOs
  - Urban, including MS4s (Phase I & II municipalities) + non-regulated
  - Wastewater, significant + non-significant facilities, municipal + industrial.
  - Natural
- Identifies the BMPs that give the greatest load reductions
- Specifies the extent these BMPs are to be implemented
- Includes BMP costs and cost-effectiveness

# CAST

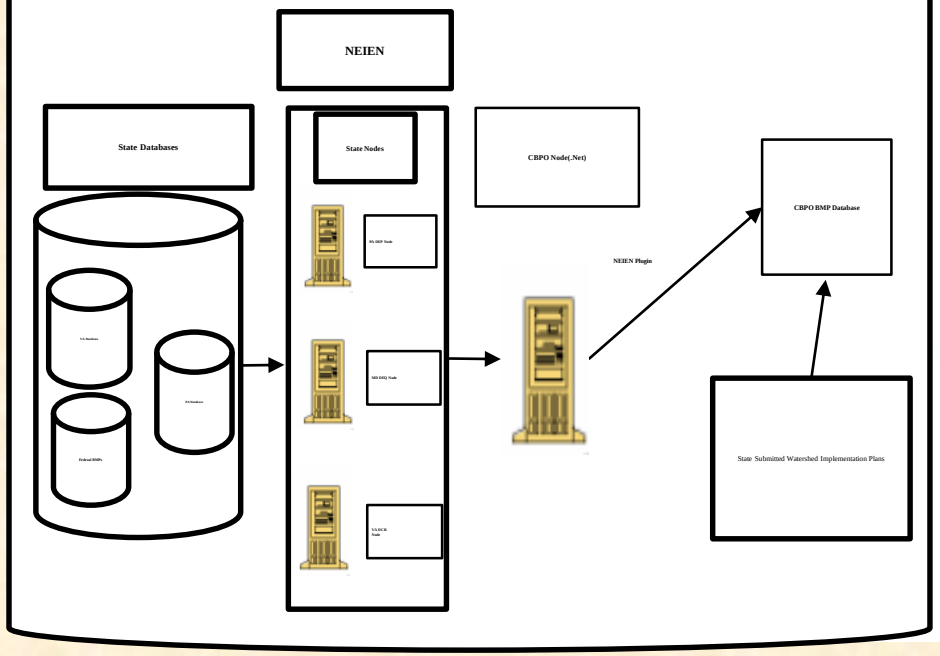
## Sources and Loads

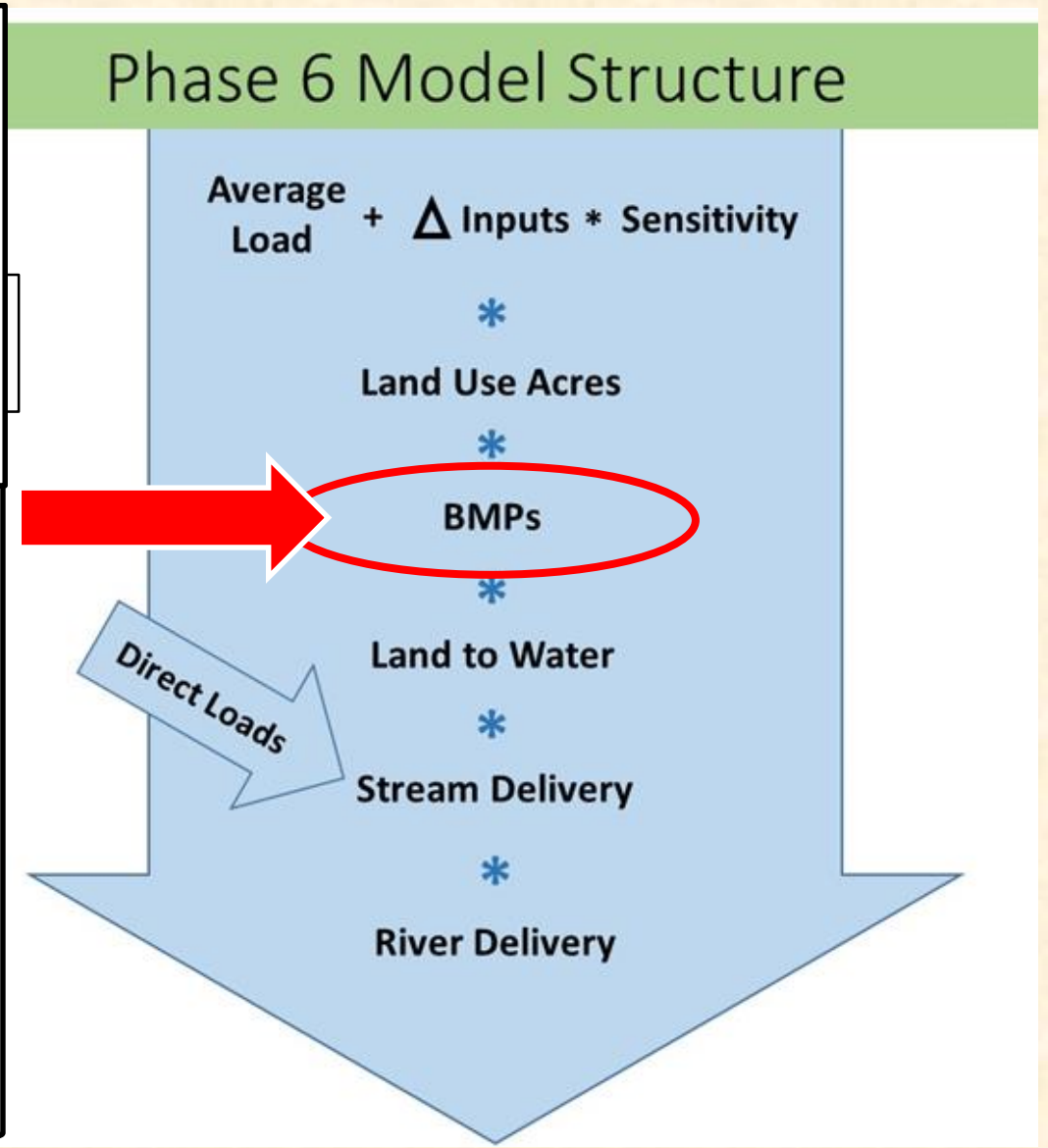
- Primarily 2 modes for using CAST
  - What-if scenarios – WIPs, Milestones, particular restoration projects
  - CBP annual "Progress" assessment – Where are we with respect to our goals?

# National Environmental Information Exchange Network (NEIEN)

**NEIEN**

Data associated with BMPs for tracking restoration efforts is transferred exclusively through the NEIEN since December 31, 2010. NEIEN Plugin facilitates the transfer, simplification, compilation, database storage, schema validation, and transaction reporting for XML submissions using the NPS BMP Schema



# CAST
## BMPs

- 300+ unique practice names available for reporting through NEIEN
  - About 50 unique BMP names available for conservation plans alone
- These lump into 200+ more-inclusive BMP categories across the agricultural, urban, septic, and natural sectors

# Reported Forestry BMPs

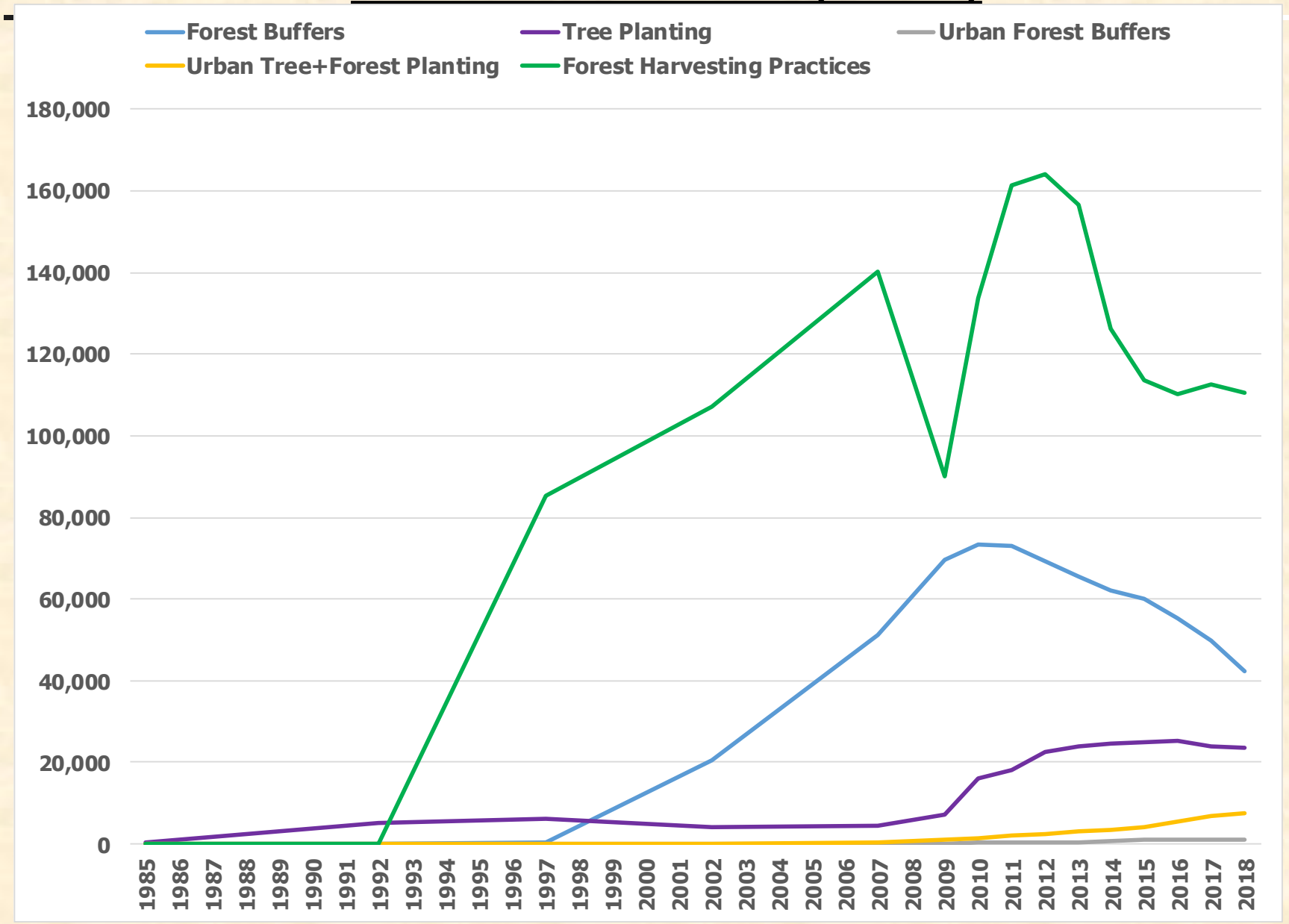
## For Annual Progress Assessments

- Agricultural Sector
  - Forest Buffers
  - Tree Planting
- Developed Sector
  - Urban Forest Buffers
  - Urban Tree+Forest Planting
- Forest Harvesting Practices

# Forestry Benefits

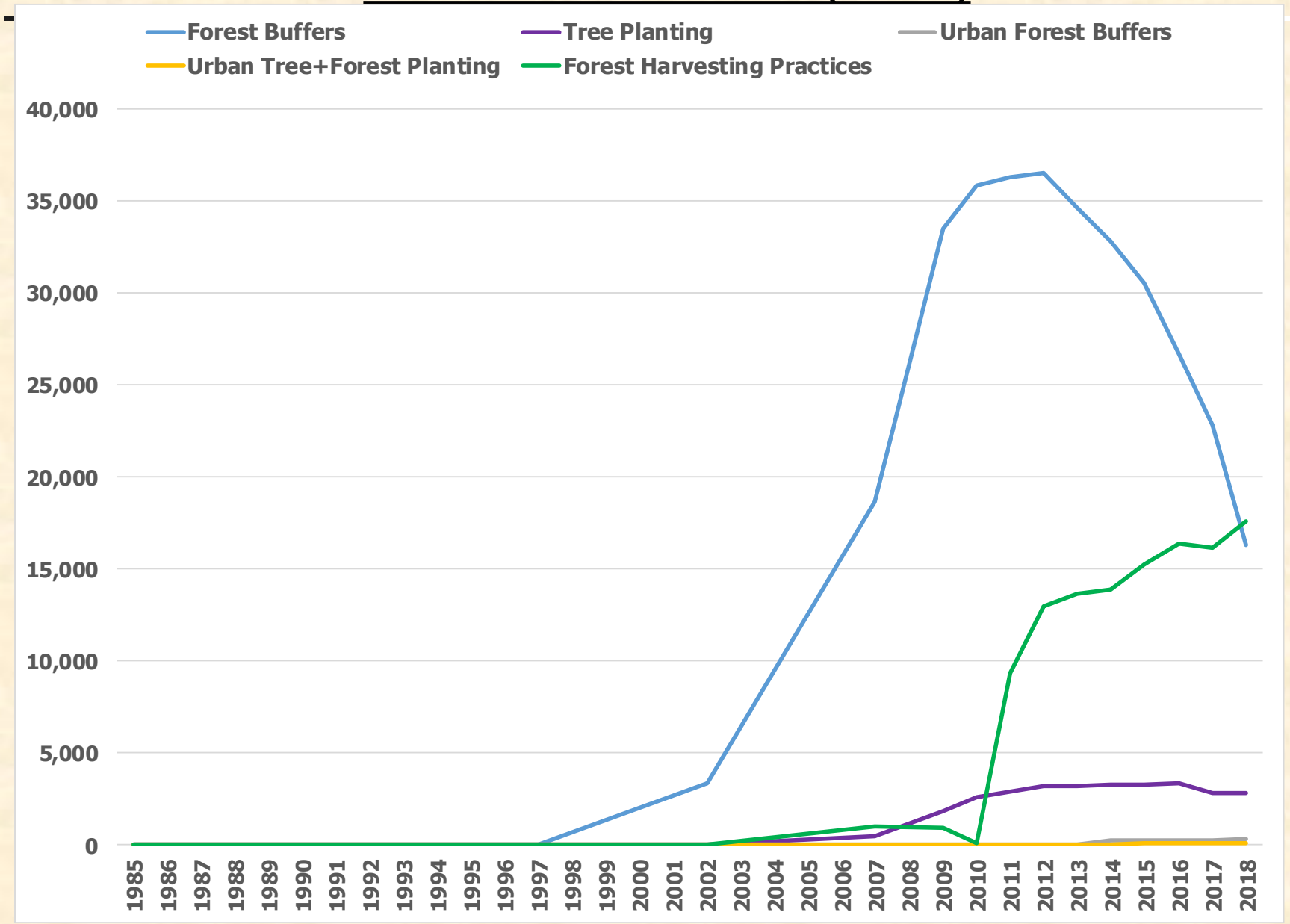
- Forest Conservation
- Urban Tree Canopy
- Changes in forest/canopy area through time are accounted for in the tools, including projections
  - The greater the area in forest/canopy, the lower the load of nutrients and sediment

# CB Watershed Reported Forestry BMPs
## 1985 – draft 2018 (acres)

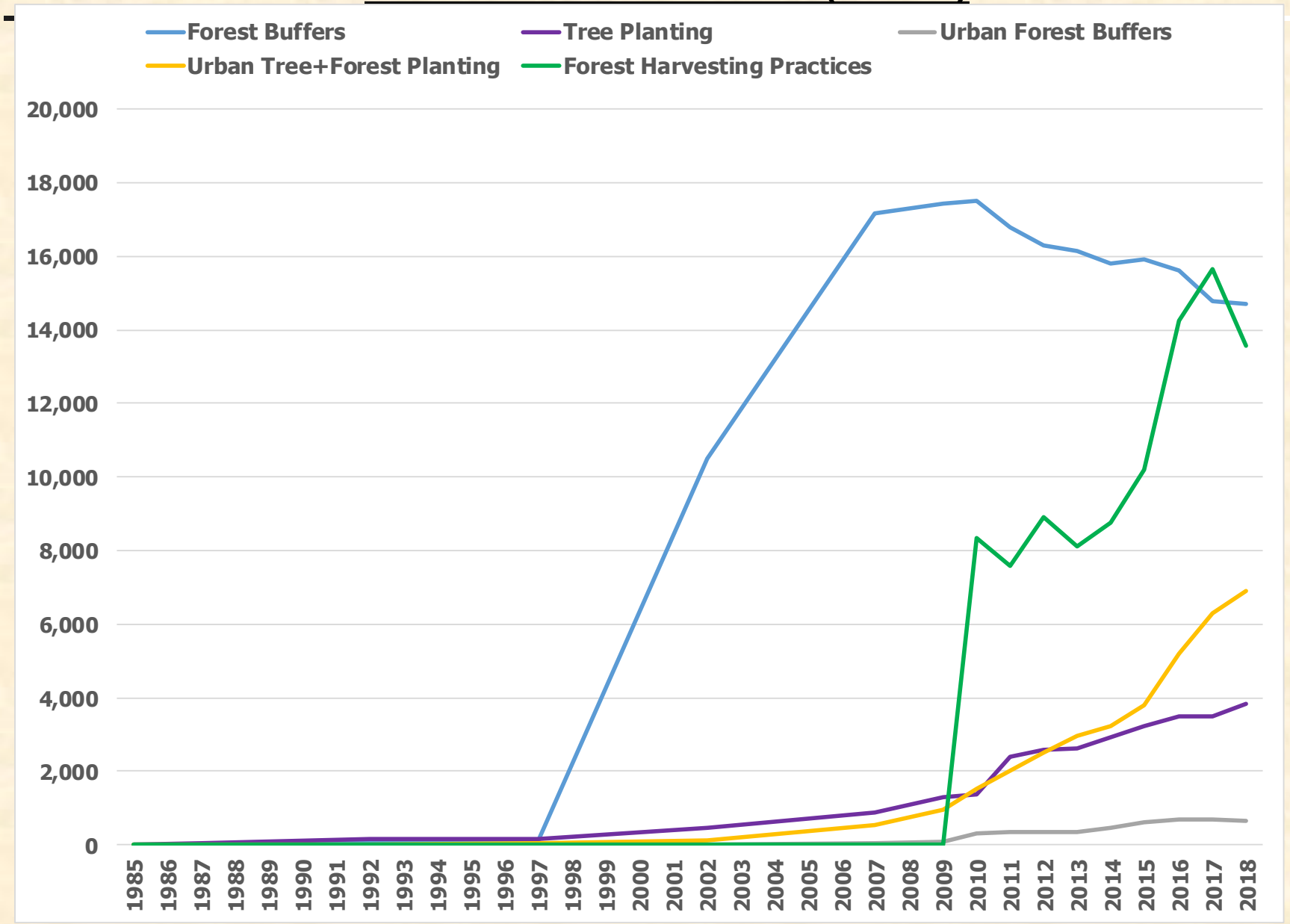


# Pennsylvania Reported Forestry BMPs

## 1985 – draft 2018 (acres)

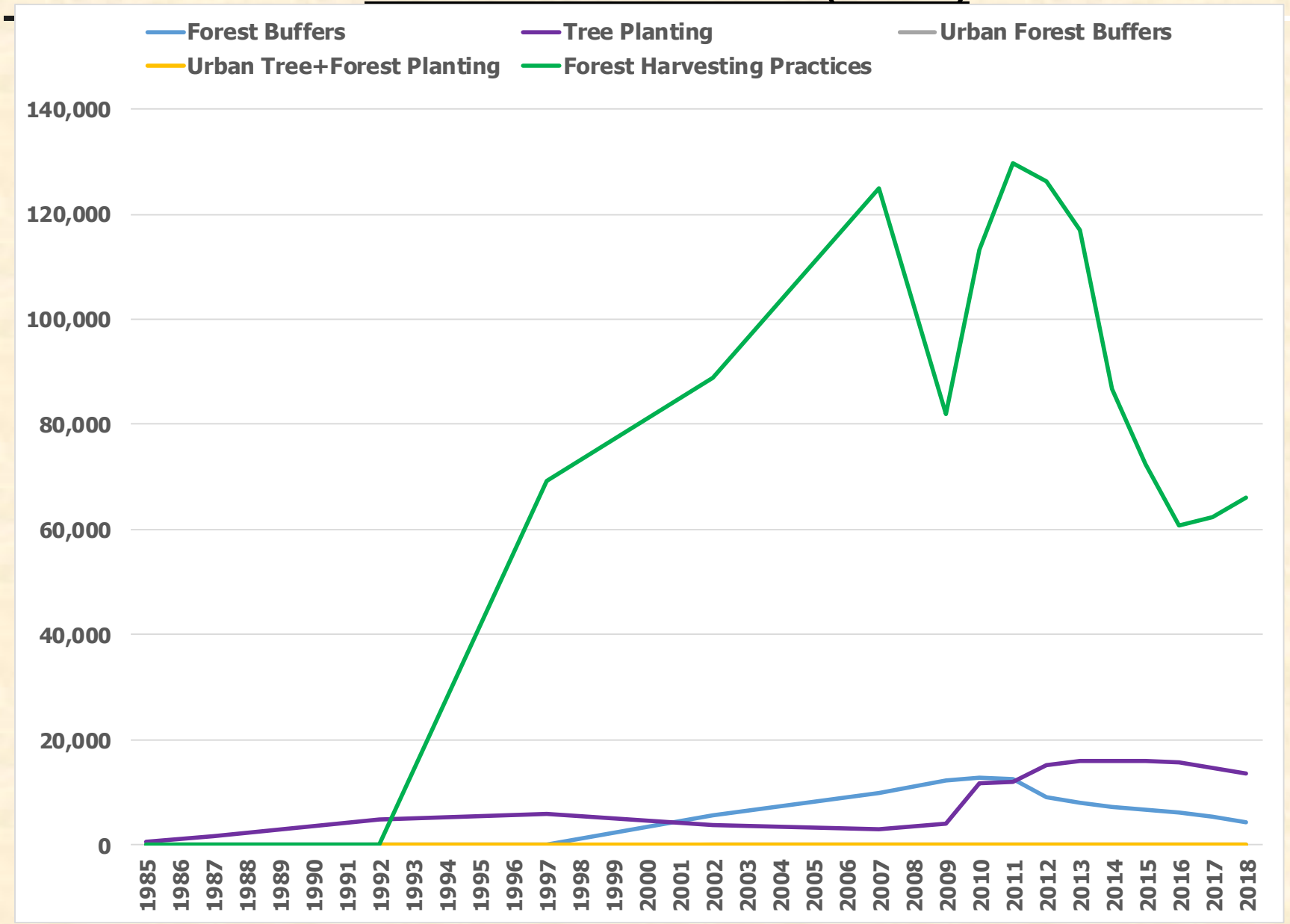


# Maryland Reported Forestry BMPs
## 1985 – draft 2018 (acres)



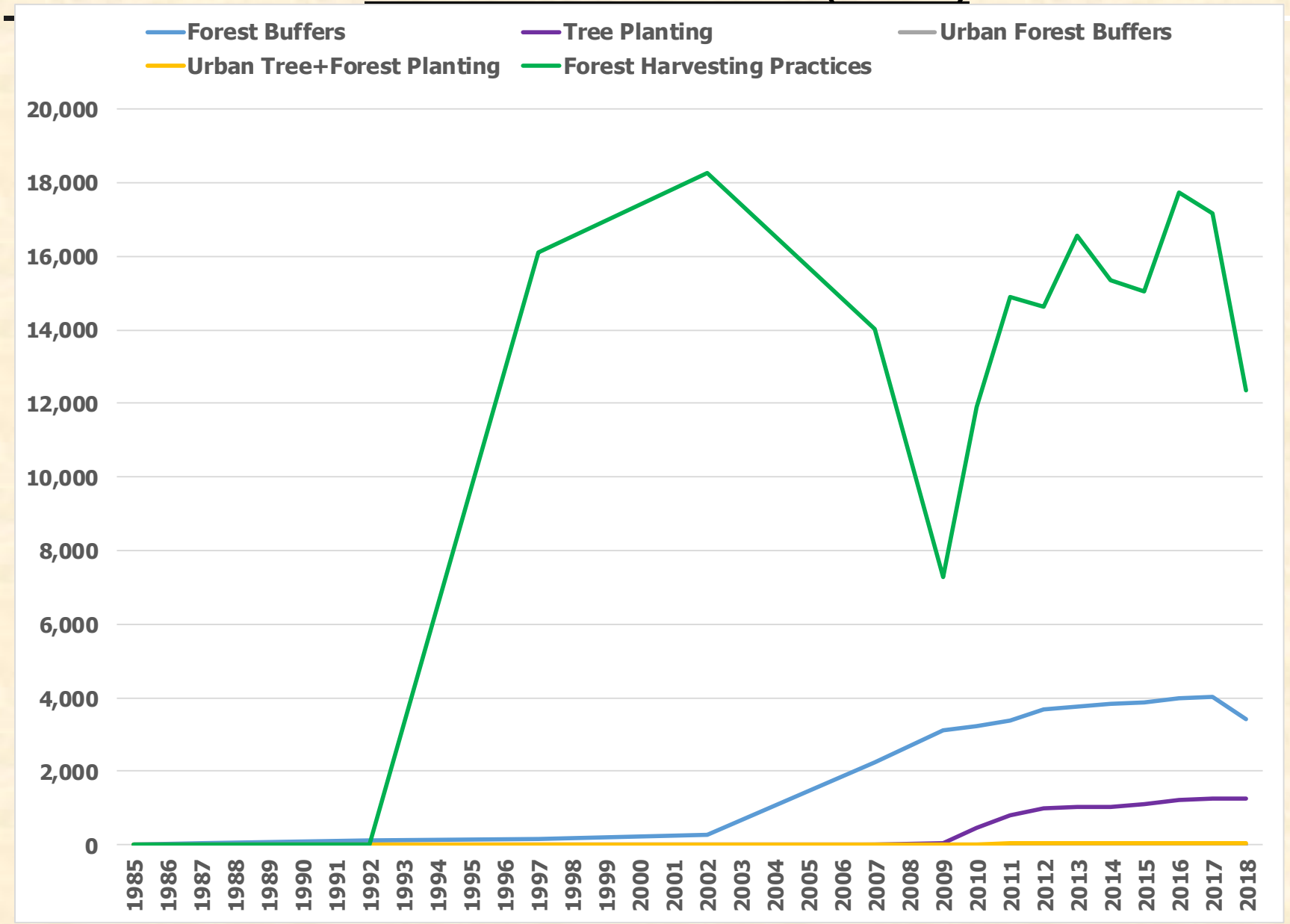
# Virginia Reported Forestry BMPs

## 1985 – draft 2018 (acres)



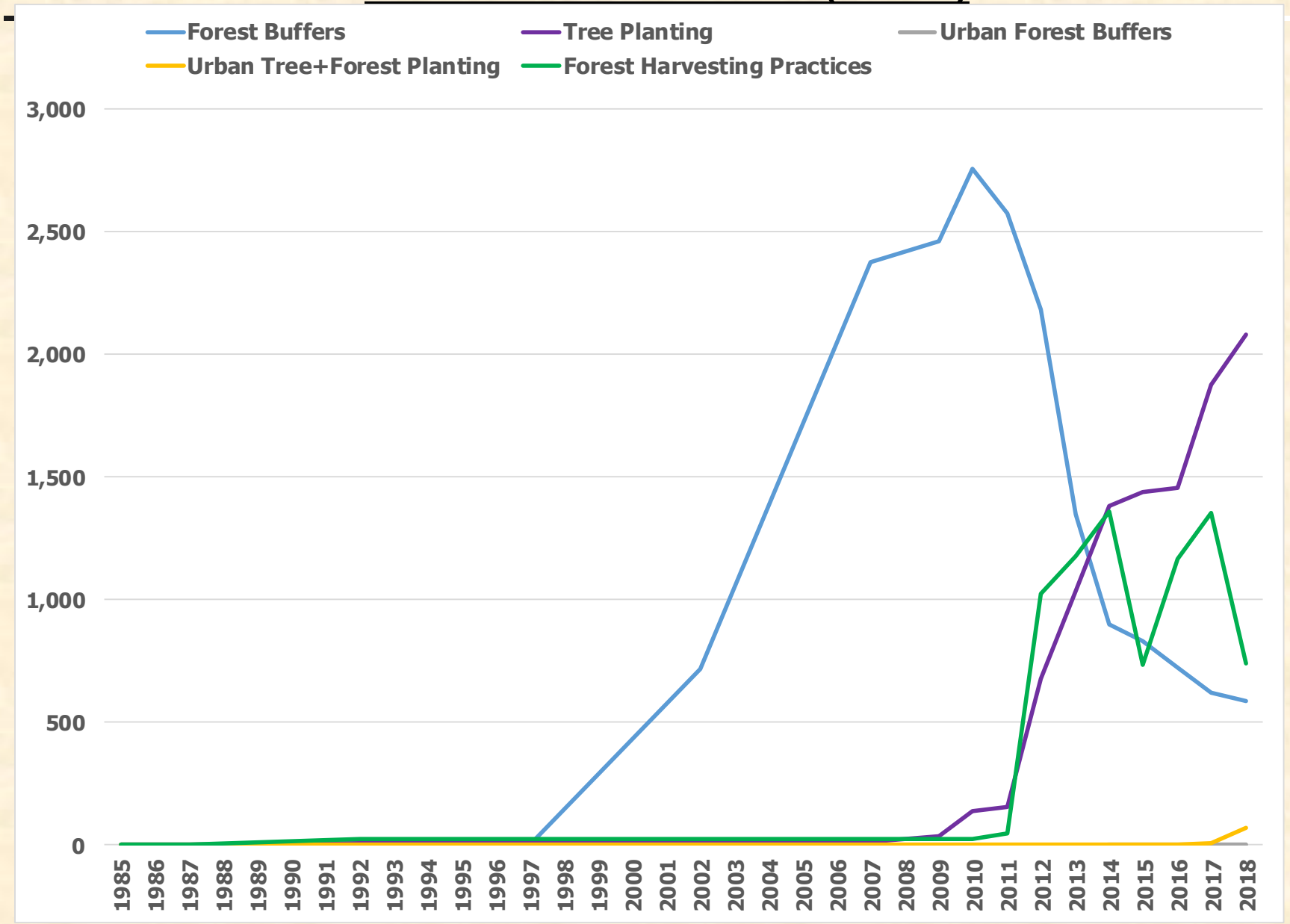
# West Virginia Reported Forestry BMPs

## 1985 – draft 2018 (acres)



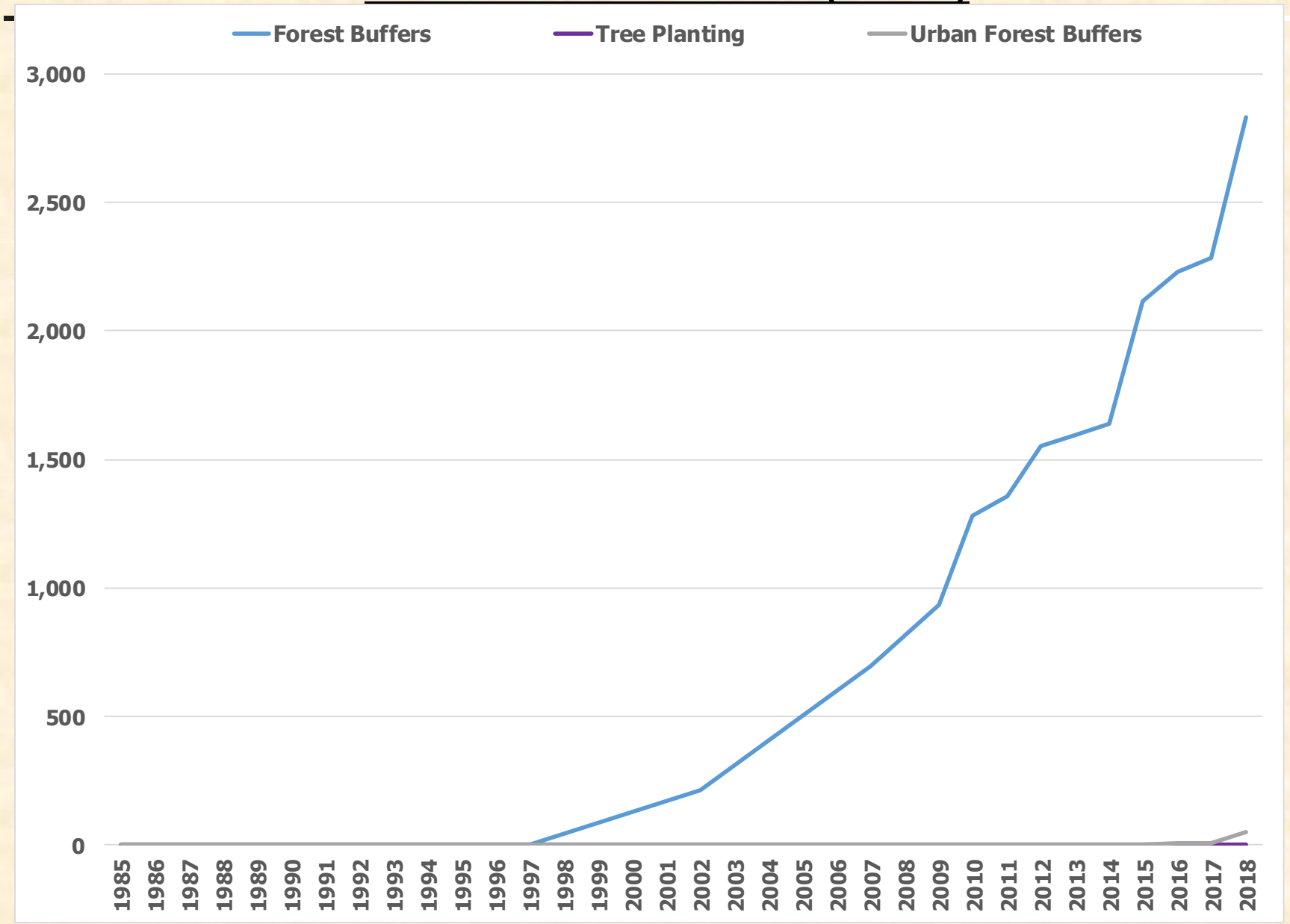
# Delaware Reported Forestry BMPs

## 1985 – draft 2018 (acres)

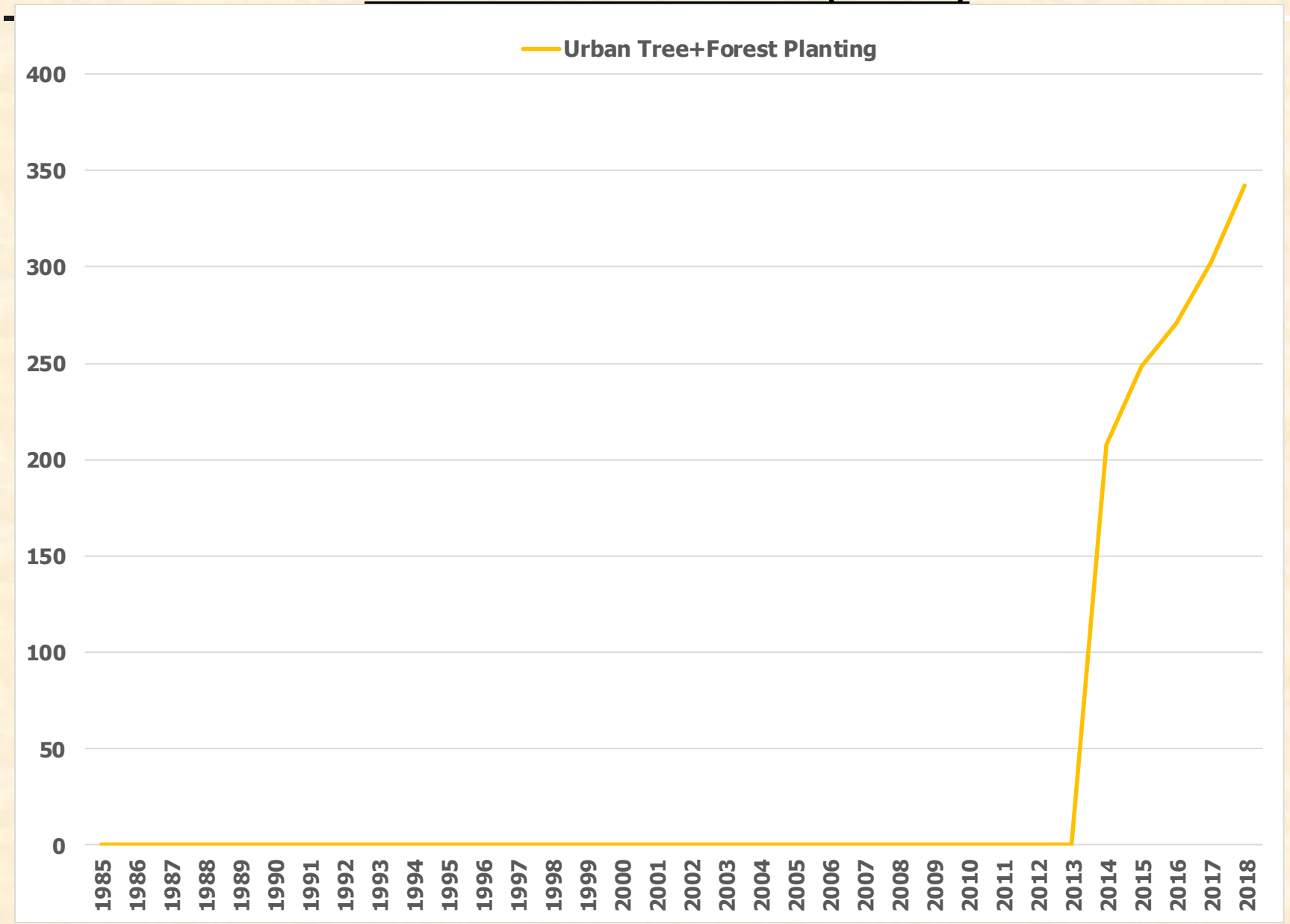


# New York Reported Forestry BMPs

## 1985 – draft 2018 (acres)



# DC Reported Forestry BMPs
## 1985 – draft 2018 (acres)



# BMP 'Credit Life'

- Each BMP has a "credit-life"
- Part of BMP verification programs established and agreed to by the partnership
- Each year, BMPs are dropped from the cumulative record at the end of their credit-life unless reported as re-inspected and functioning – which resets the "credit" clock
  - Inspected and passed
  - Did maintenance

# 2018 Progress Scenario

- Draft 2018 Progress scenarios (Phase 6) have been shared on CAST at http://cast.chesapeakebay.net
- Seven draft version through 2/4/19
- Validation reports for each draft 2018 Progress have been available on jurisdiction's password-protected ftp sites

# 2018 Progress Scenario

- CAST has 10 types of reports available to review inputs and outputs:
  - BMP Summary Report
  - BMP Submitted Versus Credited Report
  - BMP Input Files
  - Loads Report
  - Loads Per Unit
  - Wastewater Report
  - Base Conditions Report
  - Nutrients Applied
  - Atmospheric Deposition Report
  - Quick Results Report = Summary Loads, Detailed Loads, Land BMPs, Animal BMPs and Manure Transport BMPs

# 2018 Progress Scenario
## Schedule

- September 4, 2018 – Jurisdictions are encouraged to begin submitting their BMP implementation to NEIEN
  - Ongoing review of submissions will occur between September and December, with the expectation that December 1 submissions are final.

# 2018 Progress Scenario
## Schedule

- December 3, 2018 – Jurisdictions submit final 2018 progress data and any updates to BMP Verification Program Plans describing new data sources and changes to methods of tracking, reporting, and verification
  - Data period is July 1, 2017 – June 30, 2018
  - Both wastewater data and non-wastewater BMPs
  - Jurisdictions utilize the latest versions of the following NEIEN technical documents and submission instructions at http://webservices.chesapeakebay.net/schemas/
    - Document_Exchange_Template_2014_xls
    - NEIEN_Appendix_P6_03052018
    - Codes_List_P6_12212015
    - NEIEN Submission Instructions

# 2018 Progress Scenario
## Schedule

- December 3, 2018 – January 31, 2019
  - CBPO and jurisdictions conduct extensive, cooperative QA/QC review of 2018 progress data, including verification
  - Several model runs with data revisions to accommodate findings from verification and feedback from jurisdictions

# 2018 Progress Scenario
## Schedule

- February, 2019 –
  - CBPO finalizes 2018 progress model assessment – needed for outside reporting of progress on commitments and to keep results relevant.
  - Jurisdictions finalize BMP Verification Program Plans
  - QAPPs will then be posted publicly shortly thereafter, allowing time for signatures

# The 'Stopping Rule'

## PSC

All model data and methods may not be changed during the 2018 – 2019 milestone development and progress reporting time period per PSC decision, with the following exceptions:

- Historic implementation data may be updated in NEIEN;
- Permitted, disturbed construction acres for 2018 and 2019;
- Permitted harvested forest acres for 2018 and 2019.

# The 'Stopping Rule'

## PSC

- Data and BMPs used in the Phase 6 Model are subject to change prior to the beginning of each milestone period per PSC decision; however, changes must be limited in scope so that they do not:
  - impact modeled runoff during the 1993-1995 critical period; or
  - alter the base conditions (land uses, septics, animals, etc.) from 1984 through 2013.
- Preservation of these estimates will enable the CBPO to provide a consistent assessment of how new management actions and changes in base conditions have influenced loads over time.

Chesapeake Bay Program Partnership
Commitment to Verification: October 2014

# Strengthening Verification of Best Management Practices Implemented in the Chesapeake Bay Watershed: A Basinwide Framework

# BMP Verification

BMP Verification Information of CBP Site at https://www.chesapeakebay.net/what/programs/bmp_introduction_to_bmp_verification

- BMP Verification – General Main Page
  - BMP: The Framework Elements
  - BMP: Timeline
  - BMP Verification: Additional Resources
  - BMP: Verification Principles
  - BMP: Sector Verification Guidance

# BMP Verification

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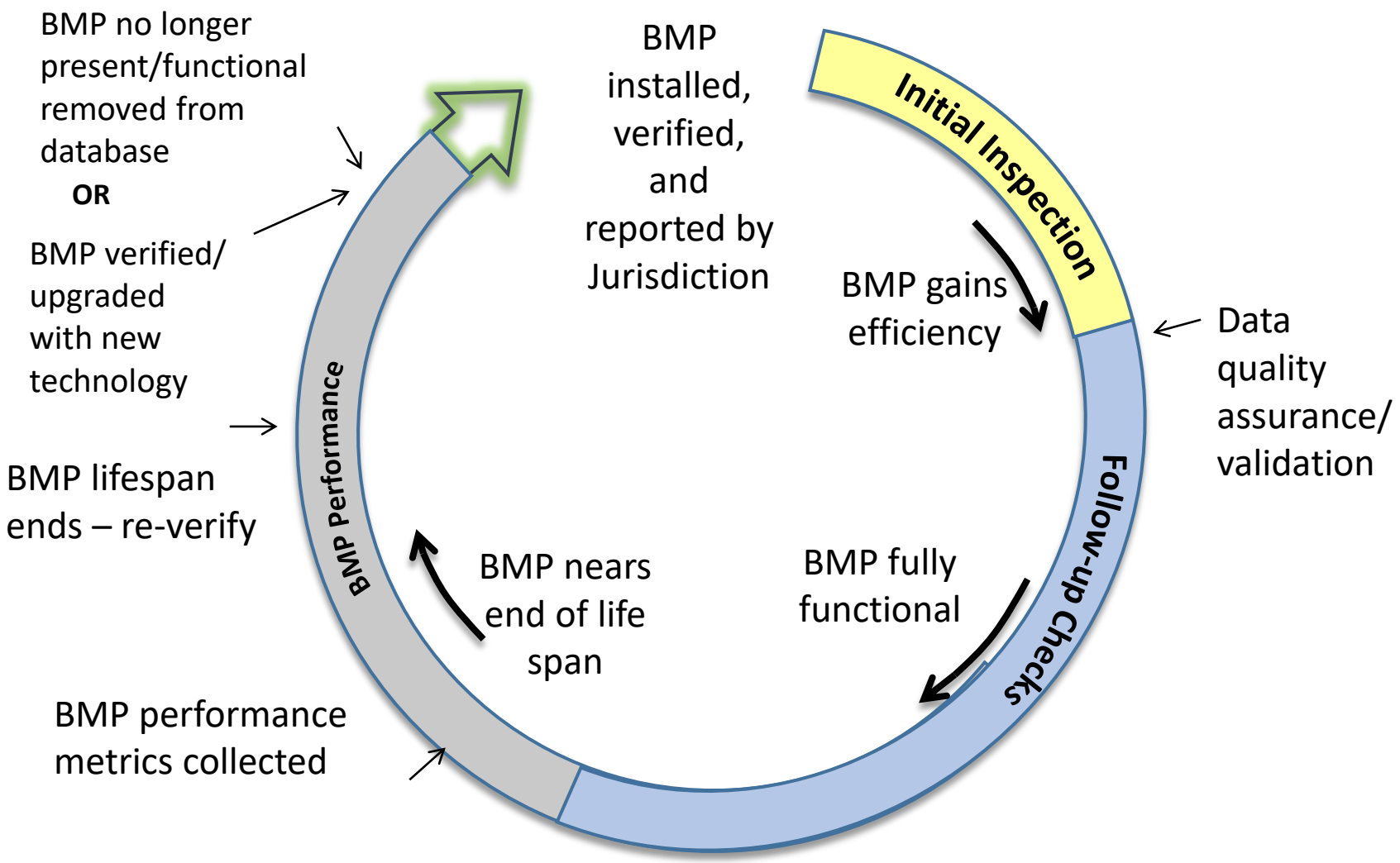
- "Process through which agency partners ensure practices, treatments and technologies resulting in reductions of nitrogen, phosphorus and sediment pollutant loads are implemented and operating correctly."

# The BMP Lifecycle




- **BMP lifecycles/credit durations are applied in the Phase 6 Chesapeake Bay Program Model**
- **2-year verification ramp-up period ended June 30, 2017**
- **2018 Progress Run submission must report verified BMPs – due 12/1/18**

# Diversity of Verification Approaches
## Tailored to Reflect Practices

| Sector | Inspected | Frequency | Timing | Method | Inspector | Data Recorded | Scale |
|---|---|---|---|---|---|---|---|
| Stormwater | All | Statistics | <1 year | Monitoring | Independent | Water quality data | Site |
| | Percentage | Targeting | 1-3 yrs | Visual | Regulator | Meets Specs | Subwatershed |
| | Subsample | Law | 3-5 yrs | Aerial | Non-Regulator | Visual functioning | County |
| | Targeted | Funding | >5 yrs | Phone Survey | Self | Location | State |
| | | | | | | | |
| Agriculture | All | Statistics | <1 year | Monitoring | Independent | Water quality data | Site |
| | Percentage | Targeting | 1-3 yrs | Visual | Regulator | Meets Specs | Subwatershed |
| | Subsample | Law | 3-5 yrs | Aerial | Non-Regulator | Visual functioning | County |
| | Targeted | Funding | >5 yrs | Phone Survey | Self | Location | State |
| | | | | | | | |
| Forestry | All | Statistics | <1 year | Monitoring | Independent | Water quality data | Site |
| | Percentage | Targeting | 1-3 yrs | Visual | Regulator | Meets Specs | Subwatershed |
| | Subsample | Law | 3-5 yrs | Aerial | Non-Regulator | Visual functioning | County |
| | Targeted | Funding | >5 yrs | Phone Survey | Self | Location | State |

# Phase 6.0 CBWM Credit Durations

- **Credit duration --** the length of time a practice may exist in the Bay Model until verification is necessary
  - Credit may be renewed based on the verification that the practice still exists and is functioning

- NRCS Practices
  - Credit durations in the CBP Model mirror NRCS Practice Lifespans

    e.g. NRCS (313) Waste Storage Facilities and CBP Animal Waste Management Systems = 15 years

- Resource Improvement (RI) Practices
  - Credit durations in the CBP Model are shorter than NRCS Practice Lifespans
  - Typically 3-5 years
  - Same amount of credit as NRCS Practices, but less time between verification

    e.g. RI-1 Dry Waste Storage Structure = 5 years

http://www.chesapeakebay.net/documents/Complete%20CBP%20BMP%20Verification%20Framework%20with%20appendices.pdf

# BMP Credit Life

## Forestry BMPs

| CAST BMP | NEIEN BMP | Model Credit Life |
|---|---|---|
| ForestBuffers | CREP Riparian Forest Buffer | 10 |
| ForestBuffers | Forest Buffer on Watercourse RI | 5 |
| ForestBuffers | Forest Buffers | 10 |
| ForestBuffers | Riparian Forest Buffer | 10 |
| ForestBuffers | Woodland Buffer Filter Area | 10 |
| ForestBuffExcl | Exclusion Fence with Forest Buffer | 10 |
| ForestBuffExcl | Exclusion Fence with Forest Buffer RI | 10 |
| ForestBuffExclNar | Exclusion Fence with Narrow Forest Buffer | 10 |
| ForestBuffExclNar | Exclusion Fence with Narrow Forest Buffer RI | 10 |
| forestbuffnarrow | Narrow Forest Buffers | 10 |
| ForestBufUrban | Urban Forest Buffer | 10 |
| ForestCon | Forest Conservation | 1 |
| TreePlant | Forest Nutrient Exclusion Area on Watercourse Narrow RI | 5 |
| TreePlant | Hardwood tree planting | 10 |
| TreePlant | Reforestation of Erodible Crop and Pastureland | 10 |
| TreePlant | Tree Planting | 10 |
| TreePlant | Tree/Shrub Establishment | 10 |
| TreePlant | Vegetative Environmental Buffer Trees RI | 5 |
| TreePlant | Windbreak/Shelterbelt Establishment | 10 |
| UrbanTreePlant | Narrow Urban Forest Buffer | 10 |
| UrbanTreePlant | Tree Planting | 10 |

# BMP Verification

## CBRAP and CBIG Grant Guidance

- Grant recipients are expected to provide CBPO with complete, quality-assured data in the proper formats through NEIEN . . . and through ICIS-NPDES and the hybrid CBPO tool . . .
- In the event that data are not submitted in time, are inaccurate, or do not use the appropriate NEIEN or wastewater formats for the CBPO to calculate annual progress . . . CBPO will use the previous year's data submitted by the jurisdiction or will not account for implementation of the BMP or control measures . . .

# BMP Verification

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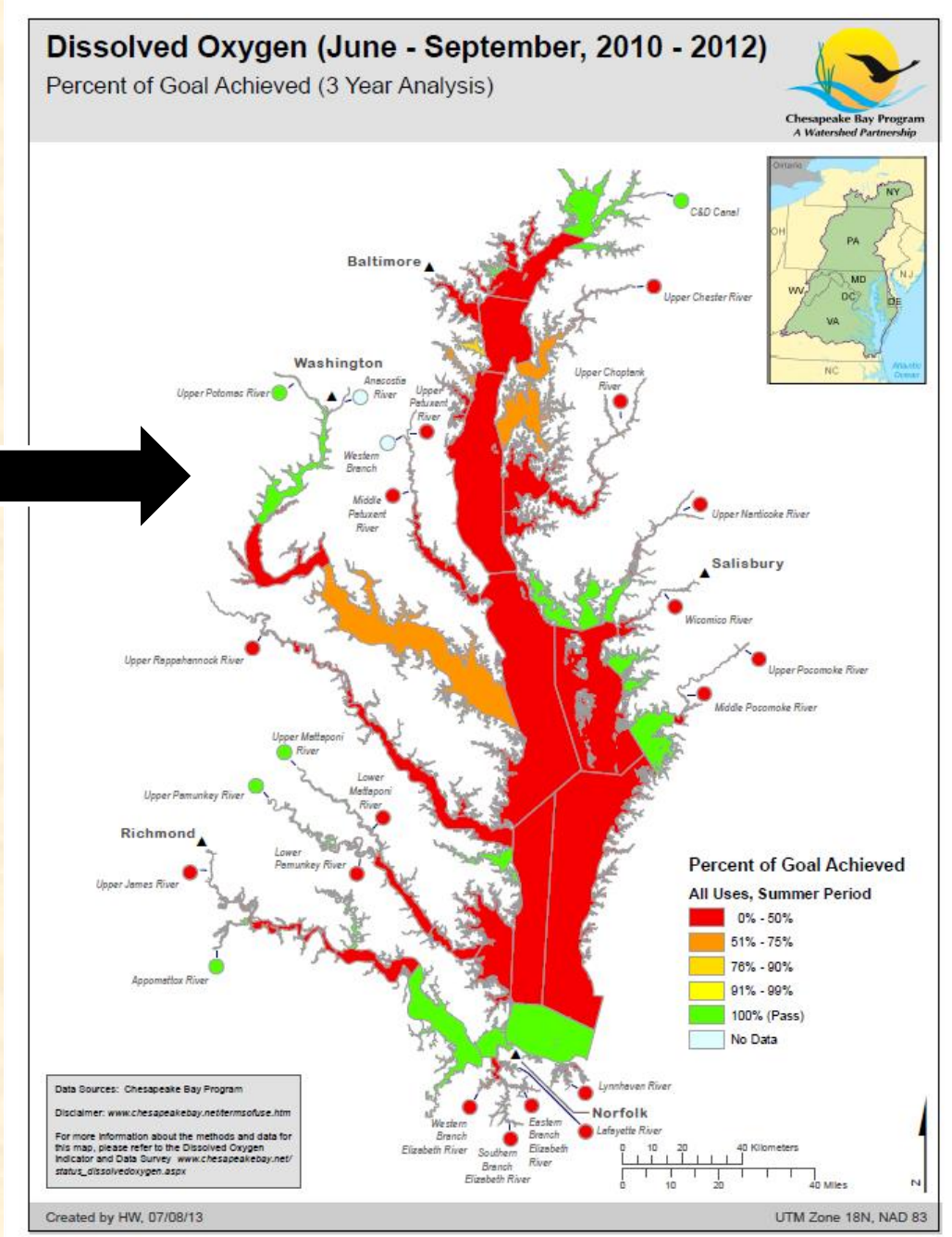
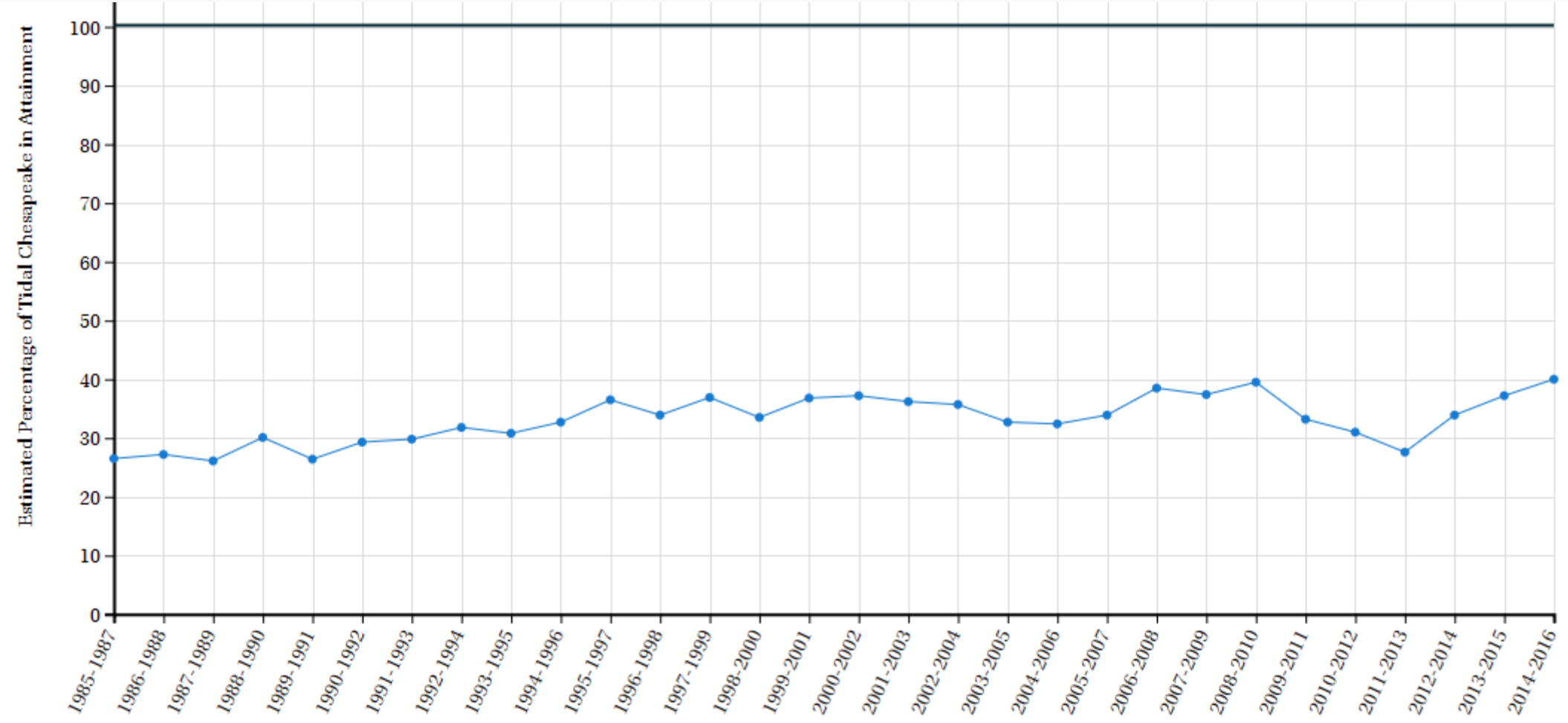
- BMP projects and/or verification are to specify new implementation, inspection, maintenance, or retirement wherever the information is available
- CBPO is primarily looking for the following:
  - Implementation rates that greatly exceed historic rates
  - Missing BMPs – compared to the history
  - Illogical implementation and re-inspection dates
  - BMPs with no or inadequate descriptions in the QAPP to get an understanding of the quality of the data
  - Resource Inventory BMPs

# Chesapeake Bay Impairments

- Dissolved Oxygen
  - Chlorophyll a
  - Water Clarity (SAV Abundance)



# Water Quality Standards Attainment

- **During the 2014 to 2016 assessment period, an estimated 40 percent of the Chesapeake Bay and its tidal tributaries met water quality standards: the highest estimate of water quality standards attainment since 1985.**