

# Integrating NASA CMS Products into Maryland's Greenhouse Gas Accounting



Presentation to NASA CMS Tri-State Working Group

Elliott Campbell, Rachel Marks

Center for Economic and Social Science

Chesapeake and Coastal Service

Maryland Department of Natural Resources

# Outline



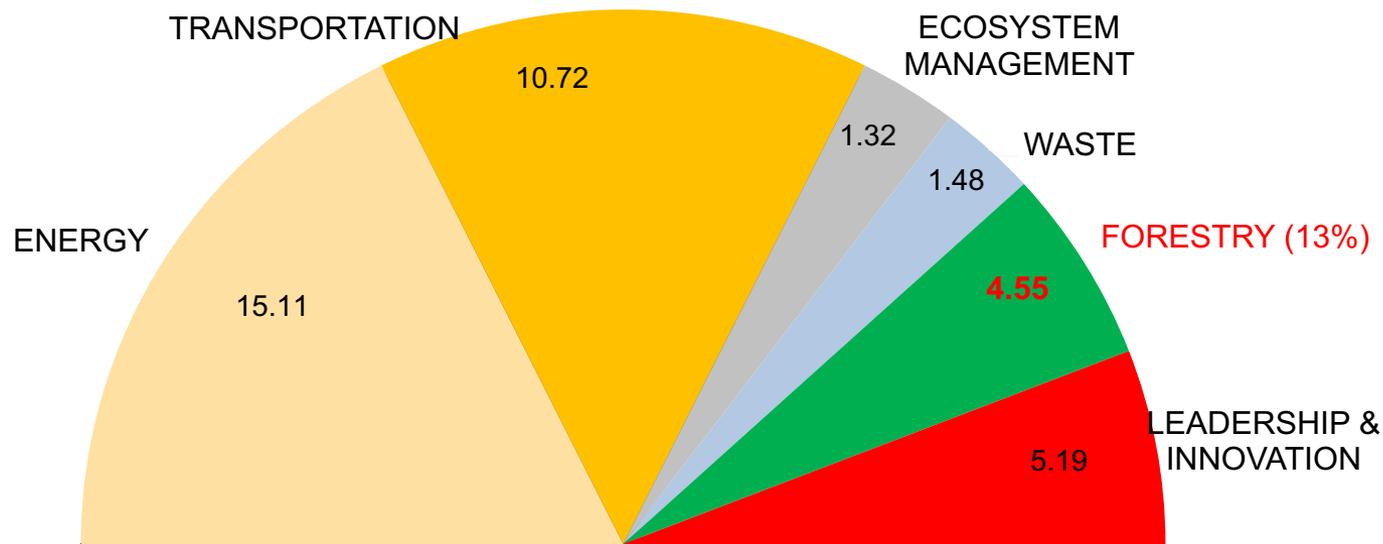
- Maryland's Greenhouse Gas Reduction Act Overview
- Results of Presentation to Mitigation Working Group
- Other Carbon Work in Maryland

# GGRA 2020 Requirement

## The Bottom Line



- The 25% by 2020 Reduction Requirement = 34.36 MMtCO<sub>2</sub>e\*
- Reductions expected by 2020 = 38.37 MMtCO<sub>2</sub>e



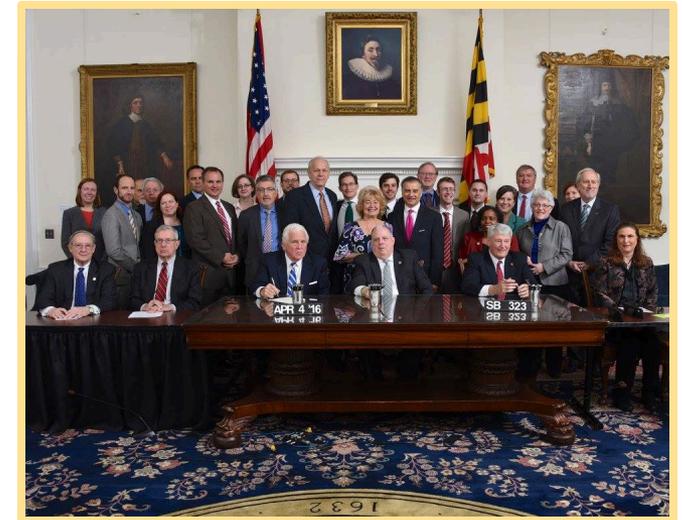
CO<sub>2</sub> Emission Reductions by Sector (MMtCO<sub>2</sub>e)

\* MMtCO<sub>2</sub>e = Million Metric Tons of Carbon Dioxide Equivalents

# The GGRA of 2016



- Reauthorized and enhanced GGRA of 2016 signed into law on April 4, 2016
- Builds from the recommendations of the MCCC
- Core elements of new law
  - 40% reduction by 2030
  - Must support a healthy economy and create new jobs
  - Maintains structure and safeguards from 2009 law
- Plan formulation begins now, finalized January 2019



# Forestry and Sequestration Programs



## Total Forestry and Sequestration

- 4.55 MMtCO<sub>2</sub>e reduction (13% of total reduction by 2020)

## Managing Forests to Capture Carbon

- 1.8 MMtCO<sub>2</sub>e reduction

## Planting Forests in Maryland

- 1.79 MMtCO<sub>2</sub>e reduction

Other programs: biomass to energy, ecosystem markets, wetland and waterways restoration, increasing urban tree canopy, and Ag. Land conservation make up the remainder of GHG reduction

# Mitigation Work

## Group Meeting 5/11



- Professor Hurtt presented the NASA CMS to the Mitigation Working Group, consisting of State officials, industry representatives, advocacy groups and academics.
- Presentation was well received, members agreed that a spatial approach would improve upon existing methods
- Informal commitment made to use NASA CMS

# Mitigation Work Group Meeting



- Potential Applications
  - Refining current projections of estimated carbon sequestration resulting from GGRA
  - Set reasonable targets to meet by 2030
  - Target locations with the highest sequestration potential for reforestation
  - Identify locations where forest may be currently under-performing, to target areas where modification of forest management may improve sequestration

# Concerns/Next Steps



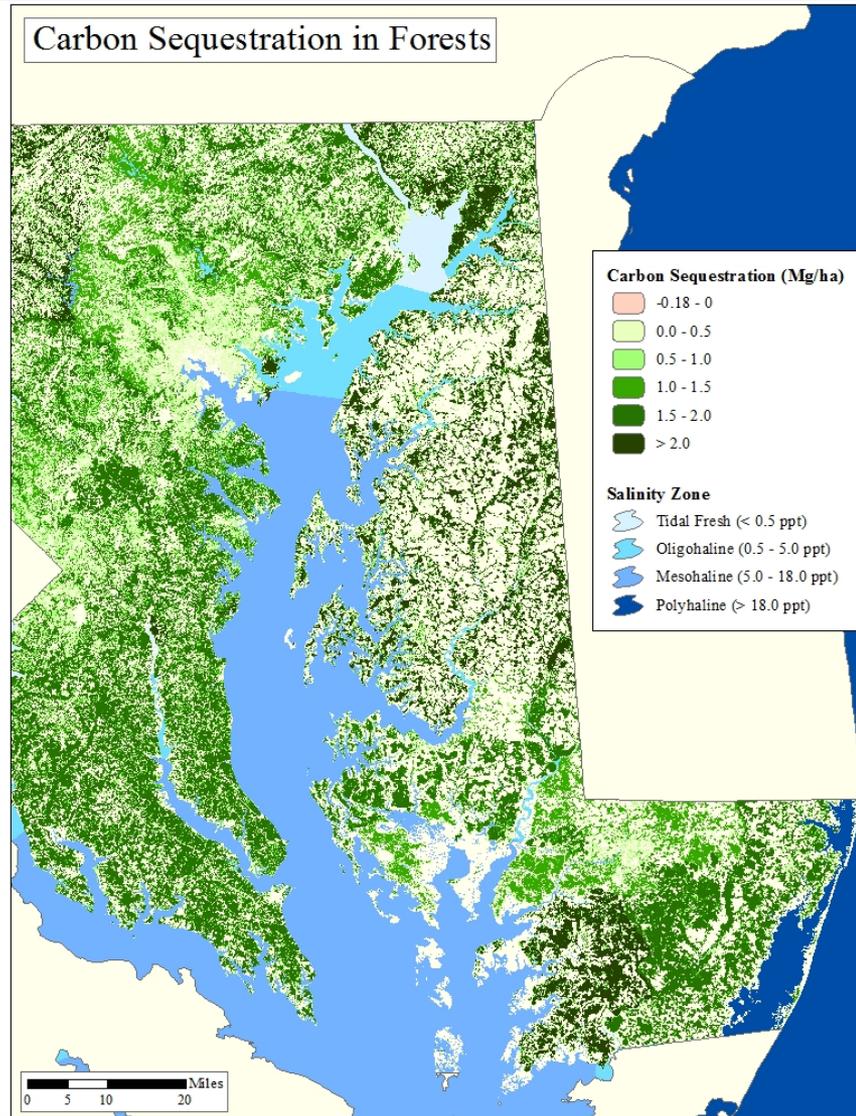
- Representatives from agriculture are concerned about potential loss of Ag. Lands
- It appears we have been overestimating C sequestration from forest management (cumulative totals reported as annual)
- Next step is to have a technical meeting with MDE to discuss how best to incorporate CMS information into their model

# Other Relevant Carbon Work in MD

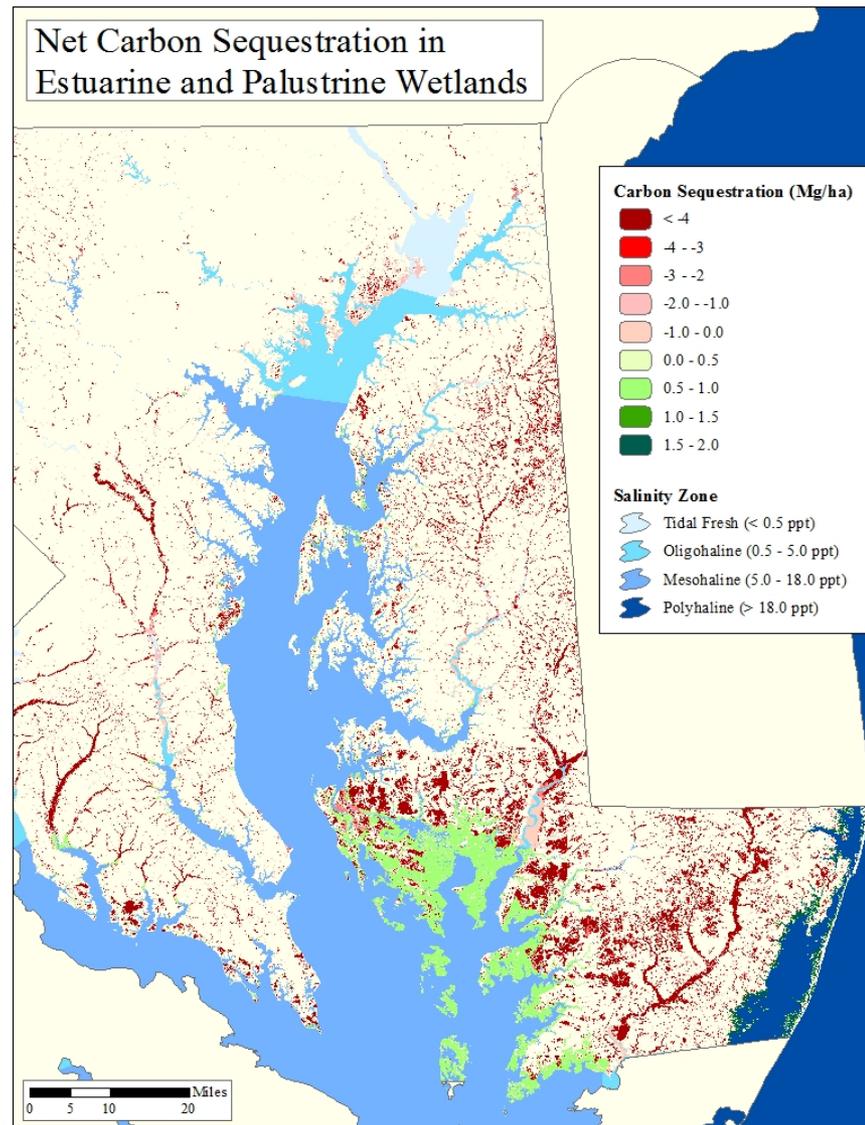


- We have used the CMS forest cover layer in our ecosystem service valuation work.
- Soil carbon sequestration, particularly from agriculture, was also presented at the MWG meeting, need for more information
- We have done an analysis on C sequestration from wetlands in Maryland, would love to have corroborating spatial data

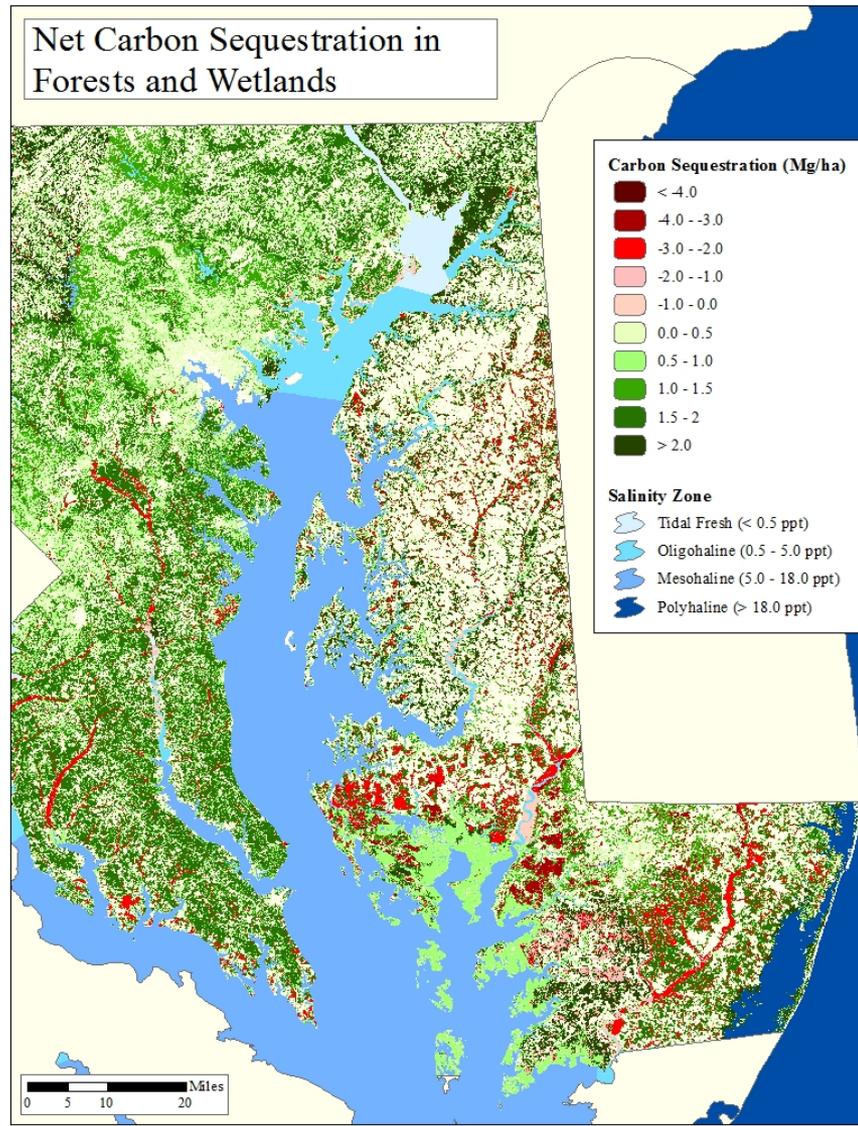
# Forest Carbon Sequestration



# Wetland Carbon Sequestration



# Net Carbon Forests and Wetlands



<http://www.mde.state.md.us/programs/Marylander/Pages/mccc.aspx>

- Also a direct link from MDE Home Page
- Membership
- Meetings
- Working Groups
- Commission documents
- Interesting articles and documents from external sources
- More



# Questions?

