



AMERICAN FORESTS
- SINCE 1875 -

Effects of Forest Management & Wood Utilization on Carbon Sequestration & Storage in California

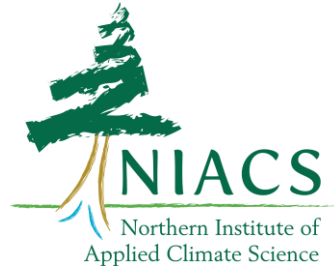
California Board of Forestry and Fire Protection – Virtual Public Meeting | March 3, 2021
Kendall DeLyser, Senior Manager of Forests and Climate

- Who we are:
 - *Introduction to American Forests and our CBM modeling team*
- What we're doing:
 - *Overview of the CBM model*
 - *Our work with CAL FIRE*
- When it'll happen:
 - *Our research timeline*
- Why it matters:
 - *Results and uses of our research*





Who we are: American Forests



UNITED STATES CLIMATE ALLIANCE



Forest Carbon and Climate Program
Department of Forestry
MICHIGAN STATE UNIVERSITY



Who we are: Our research partners



☞ The Carbon Budget Model of the Canadian Forest Sector

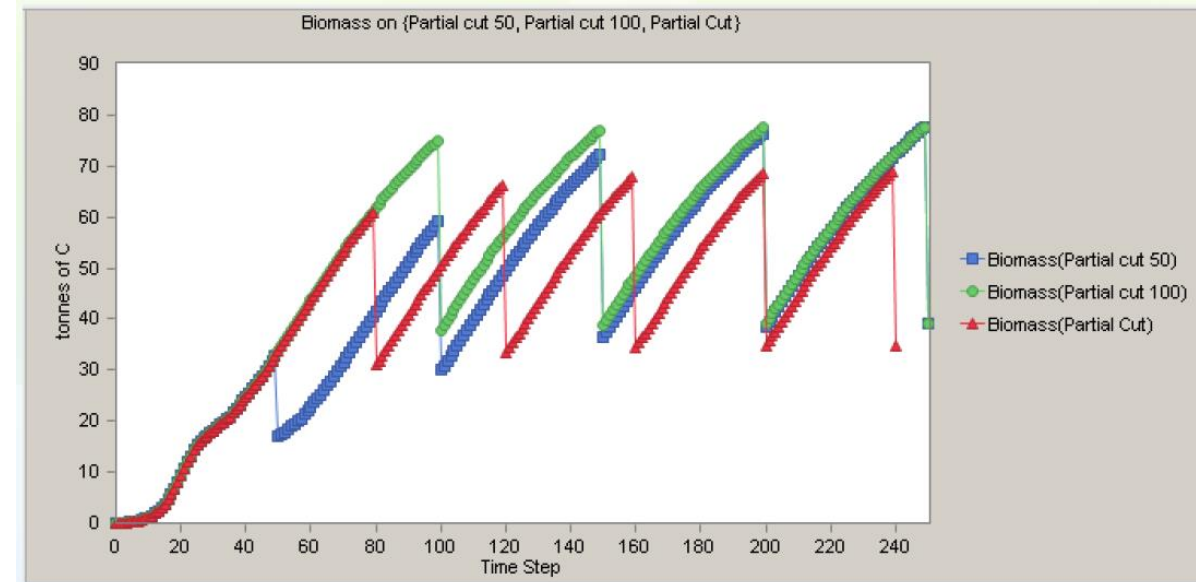


- Model of forest ecosystem carbon dynamics at various levels:
stand → operational → state → regional → national
- Links to associated CBM-Framework for Harvested Wood Products model
- Model is spatially referenced – not tied to specific locations, but can reference types of forest stands using *inventory classifiers*

What we're doing: The CBM-CFS3

We can compare ecosystem carbon results for alternate forest management scenarios containing different assumptions about:

- Growth and yield
- Natural disturbances and management activities
- Disturbance impacts on carbon pools
- Dead organic matter turnover
- Biomass turnover
- Volume to biomass conversion
- Changing climate*



**Note that this is currently linked to decay, not changes in growth...but we're working on that.*

What we're doing: Uses of the CBM-CFS3

👉 Our work is based on best available science

- CBM-CFS3 is built on 30+ years of research and refinement
 - Follows IPCC reporting guidelines
- Expanding the science to the US:
 - South Carolina/Wisconsin (case studies)
 - Pennsylvania (State Forest lands)
 - Vermont (publication out soon)
- Previous/ongoing studies of California forest carbon, climate change impacts and resilience
- 👉 We'll survey existing science to fill knowledge gaps and identify where more research is needed

Dugan et al. *Carbon Balance Manage* (2018) 13:13
<https://doi.org/10.1186/s13021-018-0100-x>

Carbon Balance and Management

RESEARCH

Open Access



A systems approach to assess climate change mitigation options in landscapes of the United States forest sector

Alexa J. Dugan^{1*}, Richard Birdsey², Vanessa S. Mascorro³, Michael Magnan⁴, Carolyn E. Smyth⁴, Marcela Olguin³ and Werner A. Kurz⁴



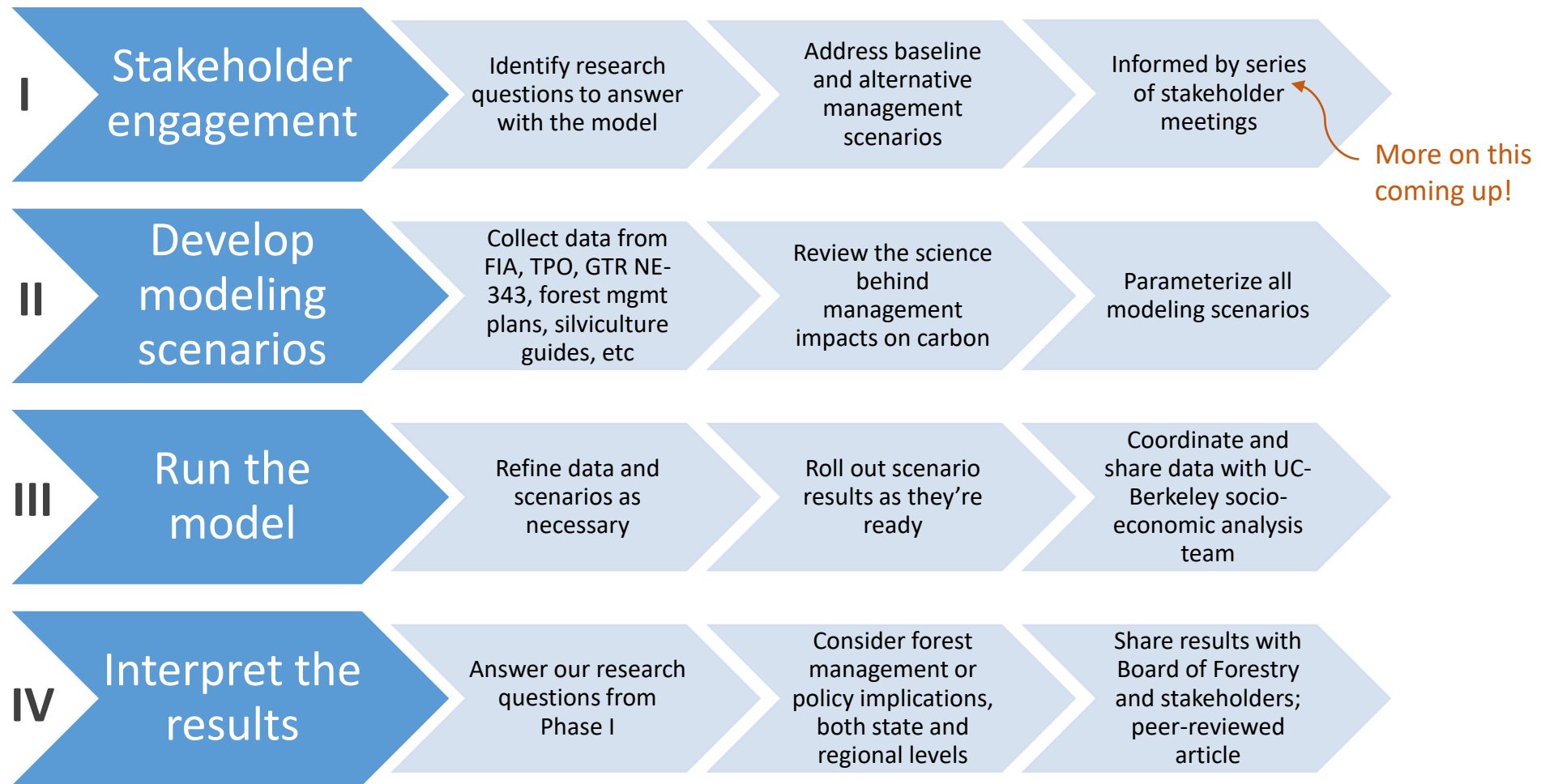
United States Department of Agriculture

Assessment of Forest Sector Carbon Stocks and Mitigation Potential for the State Forests of Pennsylvania

A report for the Pennsylvania Department of Conservation and Natural Resources

What we're doing: Using the CBM-CFS3 in the US

👉 What are the carbon effects of forest management and wood utilization in California?



What we're doing: Our work with CAL FIRE

We want input from California's forest community to help us develop our management scenarios

☞ **What research questions should we ask about forest management and carbon?**

*i.e. "What are current carbon sequestration trends in California?"
"Does Practice X or Practice Y capture more carbon long-term?"*

- Series of virtual meetings, organized by ecoregion
- Advance participant surveys to collect input on potential research questions
- Flesh out research questions in each meeting
- Technical work group to advise on silvicultural details



Source: [Johns Hopkins Engineering](#)

What we're doing: Stakeholder engagement

- ✓ March 3, 2021: presentation to California Board of Forestry and Fire Protection

 - I. Stakeholder engagement surveys and meetings: March-August 2021
 - II. Scenario development, science review, and data collection: April-November 2021
 - III. Model runs and refinement: April 2021-January 2022
 - IV. Results and data interpretation, final reporting, peer-reviewed publication: December 2021-August 2022
- ☞ Anticipated finish by November 2022

When it'll happen: Our research timeline

- Model a broad range of forest management scenarios
- Assess the carbon sequestered in forests and harvested wood products (HWP), along with associated economic effects
- Better understanding of the climate mitigation potential of California's forests and forest sector
- Integrate carbon management into policies and programs for various forest ownerships statewide
- Enable the inclusion of forests in state-level climate action planning

Why it matters: Results and uses of our research



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Thank you!

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