

# NASA CMS Applications Workshop 2019: Lessons Learned & Impact of CMS Data Products to Stakeholder's Organizations

*Scripps Seaside Forum, La Jolla, CA*

*Tuesday, November 12, 2019*

## ***NASA Carbon Monitoring System (CMS) Applications Workshop***

### ***Goals of the CMS Applications Workshop:***

- *Understanding of stakeholders needs for carbon monitoring and Measurement, Reporting and Verification (MRV).*
- *Identify the challenges/needs of communities that are interested in carbon measurement, reporting and verification (MRV), biomass, Lidar applications and related activities.*
- *Provide information on value of CMS products for MRV and related applications – including exploration of key “what?” and “how?” questions for carbon data.*
- *Link CMS community to active policy end users, decision makers and regulatory agencies to ensure maximum benefit of the projects to society.*
- *Identify CMS products that are relevant and ready for use by stakeholders and decision makers.*
- *Identify CMS data products that align with stakeholders. (Identify potential impact case studies).*

### ***Expected Workshop Outcome:***

- *Expose the Science Team members to decision makers and regulatory data users.*
- *Provide stakeholders an opportunity for communication and collaboration with CMS community.*
- *Discuss lessons learned from end users on the diverse applications and uses of CMS data products.*
- *Define a community of CMS scientists who are willing to serve as collaborators with future CMS impact studies.*
- *Identify potential stakeholders to demonstrate how CMS products may impact decision processes or what CMS products are needed in terms of carbon data at their facilities.*
- *Identify opportunities for supporting carbon MRV with CMS efforts.*

**Tuesday, November 12, 2019**  
**(Location – Samuel H. Scripps Auditorium)**

<b>8:00am</b>	CMS Applications Meeting Registration & Check-in (Samuel H. Scripps Auditorium)	
<b>8:30am</b>	Meet and Greet / CMS Hyperwall Background Presentation	
<b>9:00am</b>	<b>Kenneth Jucks &amp; Hank Margolis,</b> <i>NASA Headquarters</i>	Welcome, Introduction of carbon cycle and CMS congressional direction
<b>9:10am</b>	<b>Peter Griffith,</b> <i>Chief Scientist of NASA Carbon Cycle &amp; Ecosystems Office</i>	Welcome & Code of Conduct

<b>9:15am</b>	<b>George Hurtt</b> , <i>CMS Science Team Leader</i>	NASA Carbon Monitoring System Overview
<b>9:30am</b>	<b>Stephanie Uz</b> , Applied Sciences Manager, <i>NASA Goddard Space Flight Center</i> (Remote)	NASA Applied Sciences Overview: Integrating Applications Users in NASA Earth Science Mission Development
<b>9:40am</b>	<b>Edil Sepulveda Carlo</b> , CMS Applications Coordinator, <i>NASA Goddard Space Flight Center</i>	Overview of CMS applications efforts
<b>9:50am</b>	Brief around-the-room introductions facilitated by <b>Edil Sepulveda Carlo</b> , CMS Applications Coordinator <ul style="list-style-type: none"> <li>• Introduction of all stakeholders in the room</li> <li>• Stakeholders state their need/desired outcome(s) for CMS engagement</li> <li>• Define the work you do and the decision you are trying to make. How/What type of carbon data from the CMS (potentially) provides decision support? <i>Goals &amp; Objectives for the Day (Edil Sepulveda Carlo &amp; George Hurtt)</i></li> </ul>	
<b>10:05am</b>	<b>Morning Break</b>	
<b>Session for Stakeholders supporting CMS Products at the U.S. Local Scale</b>		
	<b>Speaker</b>	<b>Topic</b>
<b>Time</b>	<b>Stakeholder</b> , Title, <i>Organization</i>	<b>Presentation Title</b> , <i>CMS Project Engaged</i>
<b>10:20am</b>	<b>Karen Gaffney</b> , Conservation Planning Manager, and <b>Allison Schichtel</b> , Senior Conservation Planner, <i>Sonoma County Agricultural Preservation and Open Space District</i>	<b>CMS Data for Climate Action and Extreme Event Resiliency – Sonoma County, CA</b>  <i>Dubayah (CMS 2013)</i>
<b>10:40am</b>	<b>Jorn Herner</b> , Branch Chief of Research Planning, Administration, & Emissions Mitigation Branch, <i>California Air Resources Board</i>	<b>Current and Future use of Satellite Remote Sensing Data at the California Air Resources Board</b>  <i>Duren (CMS 2015 &amp; 2018)</i>
<b>11:00am</b>	<b>Lauren Lurkins</b> , Director of Environmental Policy, <i>Illinois Farm Bureau</i>	<b>Illinois Farmer Views and Uses of CMS Data</b>  <i>Guan (CMS 2016)</i>
<b>11:20am</b>	<b>Elliott Campbell</b> , Director of the Center for Economic and Social Science, <i>Maryland Department of Natural Resources</i> , and <b>Alex Rudee</b> , Research Analyst, <i>World Resources Institute</i>	<b>Utilizing NASA CMS Forest Carbon Data for State Climate Action Planning</b>  <i>Hurtt (CMS 2014 &amp; 2016)</i>
<b>11:40am</b>	<b>Questions &amp; Discussion Panel for applications and uses of U.S. local-scale products</b> <b>Feedback and recommendations moving forward</b>	

<b>12:00pm</b>	<b>Break for Lunch</b> <b>(Pick up Pre-Ordered Lunch Onsite in Room 155)</b>  <b>Data Access Tutorial for CMS Stakeholders</b> <b>by NASA Data Active Archive Centers (DAACs)</b> <b>12:20-1:20pm</b>	
<b>Session for Stakeholders supporting CMS Products at the U.S. Regional or National Scale</b>		
	<b>Speaker</b>	<b>Topic</b>
<b>1:30pm</b>	<b>Kevin Halverson</b> , Information Technology Specialist, <i>USDA Forest Service Intermountain Region</i>	<b>Applications of Carbon and Biomass data in the USDA Forest Service</b>  <i>Hudak (CMS 2014 &amp; 2018)</i>
<b>1:50pm</b>	<b>Melissa Weitz</b> , Physical Scientist, <i>U.S. Environmental Protection Agency</i>	<b>Methane Data in EPA's GHG Inventory</b>  <i>Jacob (CMS 2014 &amp; 2016)</i>
<b>2:10pm</b>	<b>Ritesh Gautam</b> , Senior Physical Scientist, <i>Environmental Defense Fund (Remote)</i>	<b>Characterizing methane emissions from the largest oil producing basin in the US</b>  <i>Worden (CMS 2018) &amp; Jacob (CMS 2014 &amp; 2016)</i>
<b>2:30pm</b>	<i>Questions &amp; Discussion Panel for applications of U.S. regional or national-scale products Feedback and recommendations moving forward</i>	
<b>2:50pm</b>	<b>Afternoon Break</b>	
<b>Session for Stakeholders supporting CMS Products at an International or Global Scale</b>		
<b>3:05pm</b>	<b>Enrico Yopez</b> , Associate Professor, <i>Instituto Tecnológico de Sonora</i> , and Representative of Mexican Carbon Program ( <i>Mexico</i> )	<b>Developing a carbon monitoring system in Mexican ecosystems: challenges and opportunities relaying on NASA CMS</b>  <i>Vargas (CMS 2016)</i>
<b>3:25pm</b>	<b>Asmadi Saad</b> , Professor, <i>University of Jambi</i> , and Member of <i>Indonesia's Peatland Restoration Agency (Indonesia)</i>	<b>Using NASA CMS products to evaluate the effectiveness of peat fire prevention measures in Indonesia's peatland restoration projects</b>  <i>Cochrane (CMS 2015 &amp; 2018)</i>
<b>3:45pm</b>	<b>Deborah Gordon</b> , Senior Fellow at Watson Institute for International & Public Affairs, <i>Brown University (Global)</i>	<b>Oil Climate Index + Gas (OCI+): Using CMS Data to Model Global Petroleum Sector GHGs and Develop Climate Mitigation Strategies</b>

		<i>Worden (CMS 2018), Elvidge (CMS 2015), Jacob (CMS 2016)</i>
<b>4:05pm</b>	<b>Sylvia Wilson</b> , Physical Scientist, <i>USGS Land Resource Mission Area and SilvaCarbon Steering Committee Co-Chair (Global)</i>	<b>Potential use of NASA CMS products in national forest monitoring systems for carbon emissions reporting in the tropics</b>  <i>Healey (CMS 2016), Olofsson (CMS 2015 &amp; 2018)</i>
<b>4:25pm</b>	<b><i>Questions &amp; Discussion Panel for applications of international or global-scale products Feedback and recommendations moving forward</i></b>	
<b>4:45pm</b>	<b>Break for Group Photo</b>	
<b>5:00pm</b>	<b>Plenary Discussion: Stakeholder Engagement Efforts Moving Forward</b>	
<b>5:15pm</b>	Edil Sepulveda, George Hurtt, and Peter Griffith, <i>CMS Applications &amp; CMS Leadership</i>	<b><i>Summary of workshop and actions moving forward.</i></b>
<b>5:25pm</b>	George Hurtt, <i>CMS ST Lead</i>	<b><i>Tangible outcomes and actions for CMS based on workshop feedback. Closing remarks.</i></b>
<b>5:30pm</b>	<p><b><i>Meeting adjourn</i></b></p> <p><b><i>CMS Applications Social and Dinner at THE LOT La Jolla. Reservations for 7:30pm</i></b></p> <p><b><i>Shuttle services available from hotels 7:00-7:30PM, and pick up is 9:30-10:00PM from THE LOT.</i></b></p> <p><b><i>Please sign up for the Social at the registration desk on Tuesday morning!</i></b></p>	