



AGU TH43C

Developing the 2nd State of the Carbon Cycle Report - Interagency engagement opportunities with the community

Conveners/Chairs:

Gyami Shrestha, U.S. Carbon Cycle Science Program Office/UCAR, CCIWG,
Nancy Cavallaro, USDA NIFA, CCIWG co-chair

Zhiliang Zhu, USGS, CCIWG co-chair

Dan Stover, DOE

Kathy Hibbard, NASA

<https://www.CarbonCycleScience.us>

AGU Dec 2016 SOCCR-2 sessions & town hall

1. AGU Sessions

The Second State of the Carbon Cycle Report (SOCCR-2):
Assessing the Last Decades' Science of the Carbon Cycle across North
America and Adjacent Oceans (Poster and Oral)

2. JOIN our TOWN HALL on Thursday

Developing the 2nd State of the Carbon Cycle Report

- Interagency engagement opportunities with the community

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Date and Time: Thursday, 15 December 12:30 - 13:30

Location: Moscone West 2006



Overview of the 2nd State of the Carbon Cycle Report (SOCCR-2): Process and Next Steps

<https://www.CarbonCycleScience.us>

2nd State of the Carbon Cycle Report (SOCCR-2)

Focus

- Led by CCIWG. Lead Administrative agency is USDA.
- Follow-up to the 1st SOCCR (2007)
- Highly Influential Scientific Assessment (HISA) per OMB, part of USGCRP Sustained Assessment
- U.S. and North American carbon stocks and fluxes in managed and unmanaged systems
- Including relevant carbon management science perspectives and tools for supporting and informing decisions addressed in/related to

US Carbon Cycle Science Plan (2011) and

National Climate Assessment,

USGCRP 2012-2021 Strategic Plan (formally called the National Global Change Research Plan 2012-2021)

SOCCR-2 audience

- The audience includes scientists, decision-makers in the public and private sectors and the general community across the US, extending to North American and global regions.
- Updated information on the observed status and trends in the carbon cycle as influenced by natural and anthropogenic changes will be disseminated to this audience.
- The report will inform policies but will not prescribe or recommend them.
- In that respect, it will help inform mitigation and adaptation decisions related to the carbon cycle, supporting improved coordination for pertinent research, monitoring and management activities for responding to global change.

Questions* informing SOCCR-2

Topical roadmap

1) How have natural processes and human actions affected the global carbon cycle on land, in the atmosphere, in the oceans and in the ecosystem interfaces (e.g. coastal, wetlands, urban-rural)?

2) How have socio-economic trends affected the levels of the primary carbon-containing gases, CO₂ and CH₄, in the atmosphere?

3) How have species, ecosystems, natural resources and human systems been impacted by

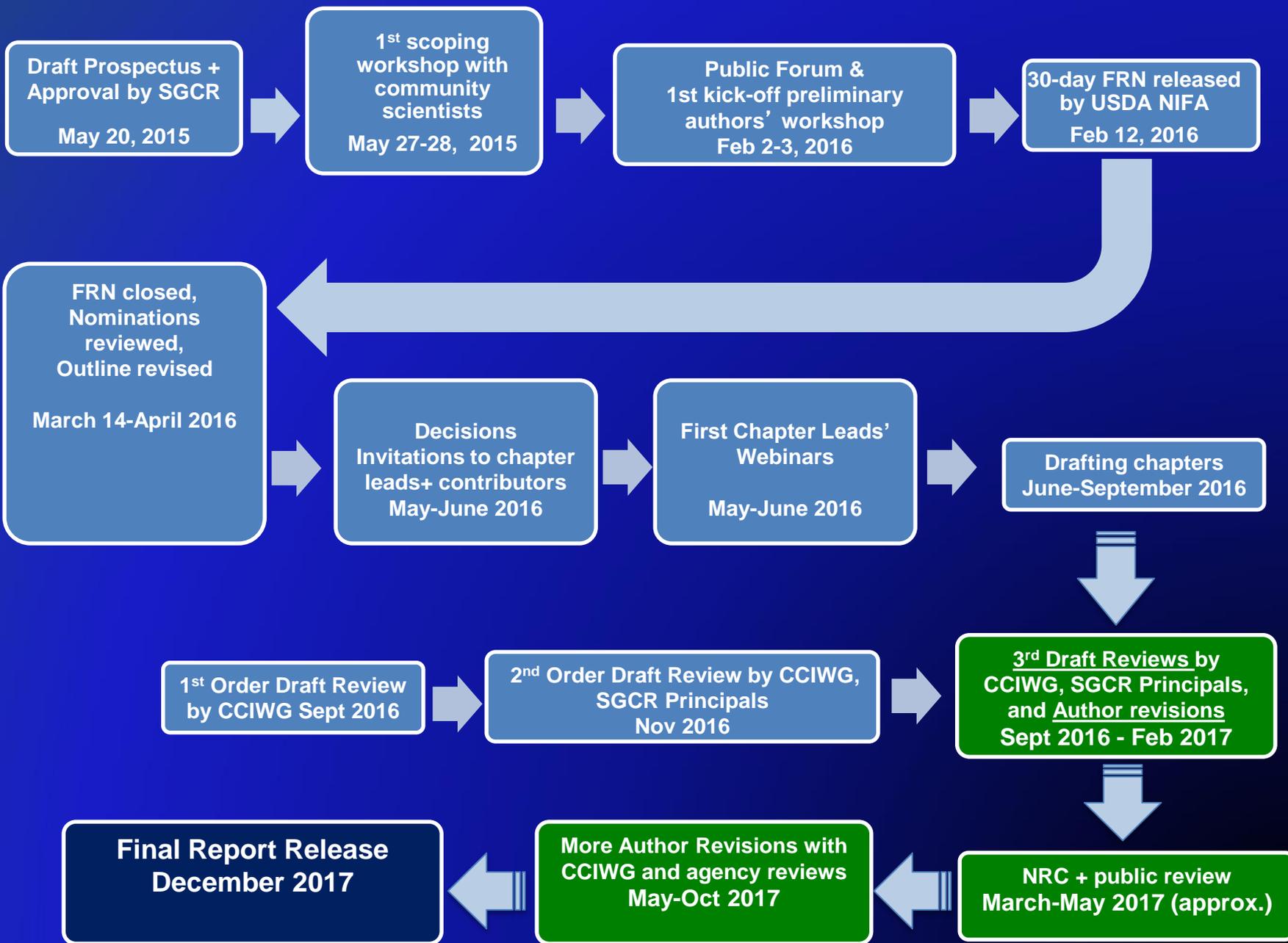
- increasing GHG concentrations,
- the associated changes in climate, and
- by carbon management decisions and practices?

* Derived from A U.S. Carbon Cycle Science Plan (2011)

SOCCR-2 broad assessment framework

- 1) Carbon Cycle at Scales (Global Perspective, North American Perspective, US Perspective, Regional Perspective)
- 2) Interactions/Disturbance/Impacts from/on the carbon cycle
- 3) Role of carbon in systems (Soils, Water, Oceans, Vegetation, Terrestrial-aquatic Interfaces)
- 4) Carbon Management Science Perspective and Decision Support (measurements, observations and monitoring for research and policy relevant decision-support etc.)

Major SOCCR-2 MILESTONES (As of Dec 13, 2016)



	#	State of the Science - Chapters (major biomes/systems/ science focus area) – notional chapter titles	<u>Required sections</u> for each chapter
	I	Preface/motivation for the report/ advances since SOCCR-1	<p>i. Key Message/ Findings/Highlights (incl. traceable accounts - see examples from Health and NCA supporting evidence)</p> <p>ii. Introduction</p> <p>iii. Historical context (incl. socioeconomic drivers of carbon emissions)</p> <p>iv. Current State of Carbon Cycle Understanding of Fluxes and Stocks</p> <p>v. Indicators, Trends, Feedbacks</p> <p>vi. North American and Global Context, Regional Perspective</p> <ul style="list-style-type: none"> • NCA regions • U.S., Mexico, Canada • Arctic, Tropics, RECCAP <p>vii. Societal drivers and impacts, carbon management and decisions</p> <p>viii. Synthesis, conclusions, gaps in knowledge, and (near) future outlook</p> <ul style="list-style-type: none"> • overarching synthesis of the current state of the carbon cycle • key knowledge gaps/ opportunities and near-term outlook on the North American carbon cycle
	II	Governmental, inter-governmental and interagency context	
	III	Executive Summary	
Part I Synthesis	1	What is the C cycle and why care/the C cycle in a global context	
	2	North American C budget past, present, and future	
Part II Human Dimensions of the C Cycle	3	Energy Systems (incl. Transportation)	
	4	Urban	
	5	Agriculture	
	6	Carbon and Society/Social Embeddedness of Carbon	
	7	Tribal Lands	
Part III: State of Air, Land and Water	8	Atmosphere	
	9	Forests	
	10	Grasslands	
	11	Arctic/Boreal/Permafrost regions	
	12	Soils	
	13	Terrestrial wetlands	
	14	Inland waters	
	15	Tidal wetlands and estuaries (incl. blue carbon)	
	16	Oceans and continental Shelves (oceans, methane hydrates etc.)	
Part IV: Consequences and ways forward	17	Consequences of rising atmospheric CO2 (e.g., ocean acidification etc.)	
	18	Decision-support/ Informing decisions, social, behavioral, economic	
	19	Future projections and associated climate change in North America	

Who's Who (SOCCR-2 Team so far)

CCIWG SOCCR-2 Fed Steering Committee and USGCRP	Organization
Nancy Cavallaro (Administrative Lead Agency POC + CCIWG co-chair)	USDA-NIFA*
Zhiliang Zhu (CCIWG co-chair)	USGS
Dan Stover	DOE Office of Science
Erica Ombres	NOAA OA
Tom Wirth	EPA
Kathy Hibbard	NASA
Marlen Eve	USDA ARS
Carolyn Olson	USDA OCE
Noel Gurwick	USAID
Ben DeAngelo (Deputy Executive Director) (prior to Dec 2016)	USGCRP
Glynis Lough (NCA Chief of Staff) (prior to Sept 2016)	USGCRP/UCAR
Gyami Shrestha (U.S. Carbon Program Office Director)	CCIWG/ UCAR/USGCRP USGCRP/ CCIWG POC for SOCCR-2 as SOCCR-2 Project Manager

Federal Liaisons (in addition to the Fed Steering Committee members)

Karina Schafer (NSF), Anne Marsh (USDA FS), Laura Lorenzoni (NASA), Jim Butler (NOAA), Eric Kasischke (NASA), Kathy Tedesco (NOAA), Libby Larson (NASA/SSAI)

Science Leads

Rich Birdsey	USDA FS (retired)
Melanie Mayes	ORNL
Ray Najjar	PSU
Sasha Reed	USGS
Paty Romero-Lankao	UCAR/NCAR

SOCCR-2 Writing Team

Chapter Leads + Contributors + ORNL Editing Team

*USDA is the Administrative Lead Agency for SOCCR-2.

Extra



Institutional Context of Carbon Cycle Science Research in the U.S. and North America – A SOCCR perspective

- Gyami Shrestha, PhD (U.S. Carbon Cycle Science Program/CCIWG, UCAR),
- Nancy Cavallaro, PhD (USDA NIFA, CCIWG),
- Catherine SteMarie, PhD (NRCAN)

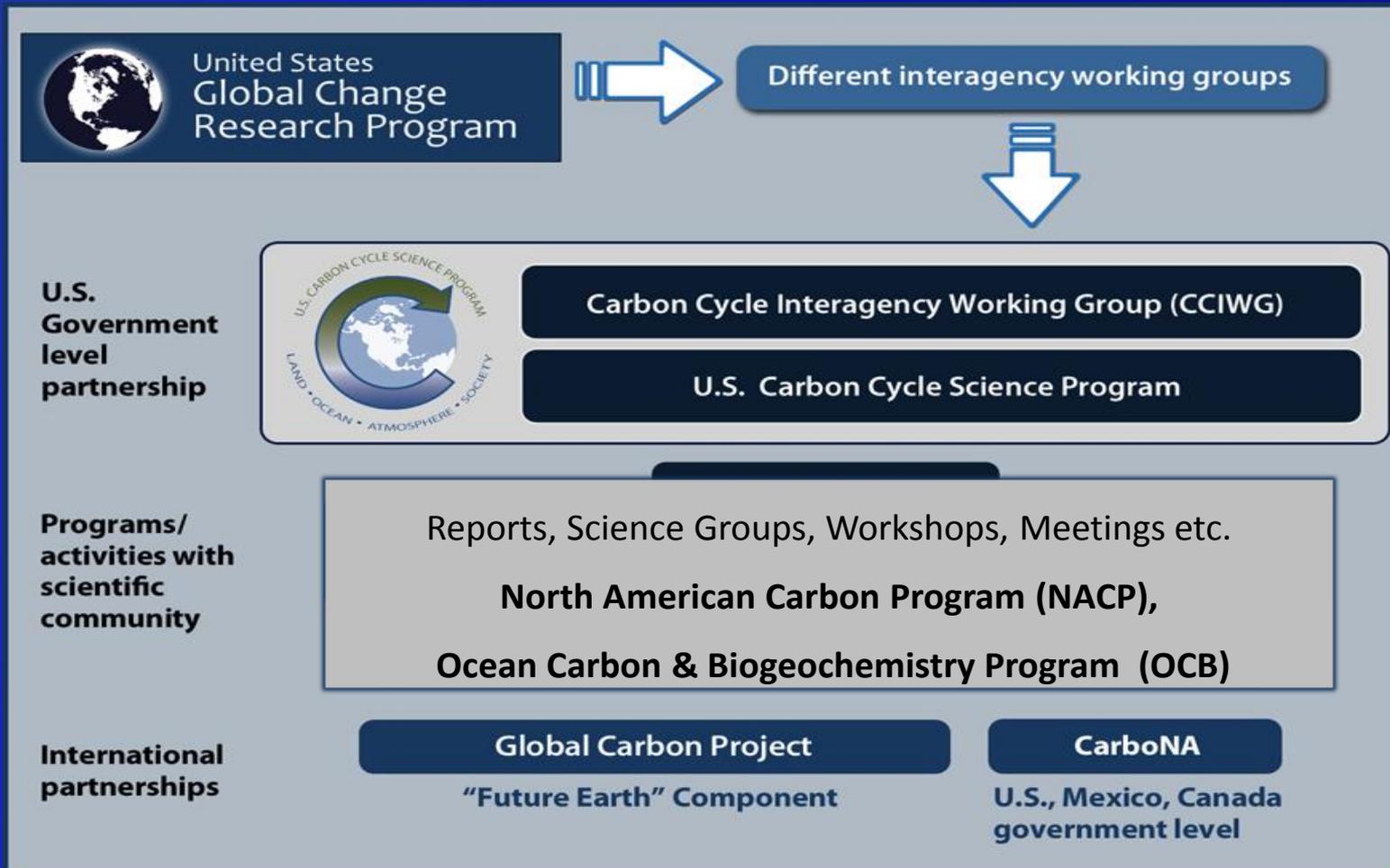
<https://www.CarbonCycleScience.us>

AGU FM 2016 SOCCR-2 Oral Session, Dec 13, 2016



U.S. Carbon Cycle Science Program Mission

To coordinate and facilitate federally funded carbon cycle research, and provide leadership to the USGCRP on carbon cycle science priorities



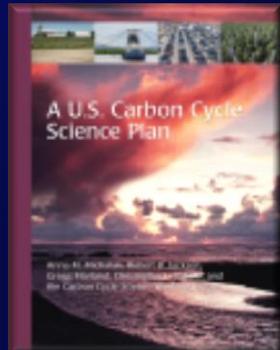
e.g.
SOCCR-2

What does the CCIWG do?

- **Promotes** interagency cooperation and coordination;
- **Helps** secure funding, prepare individual & joint agency initiatives & solicitations; and
- **Involves** the scientific community in providing the needed science to understand the carbon cycle.



Major CCIWG Programs & Activities: (in addition to funding programs by individual agencies)





The CCIWG has been instrumental in the process of prioritization of carbon cycle science research themes within and by the U.S. Government since 1998.

