

# Overview and Status of the 2<sup>nd</sup> State of the Carbon Cycle Report (SOCCR-2), an Interagency Sustained National Climate Assessment Report



U.S. Carbon Cycle Science Program  
Carbon Cycle Interagency Working Group (CCIWG)

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<https://CarbonCycleScience.us>

Follow us @USCarbonProgram

ESA Meeting, Portland, Oregon

Portland Blrm 255, Oregon Convention Center

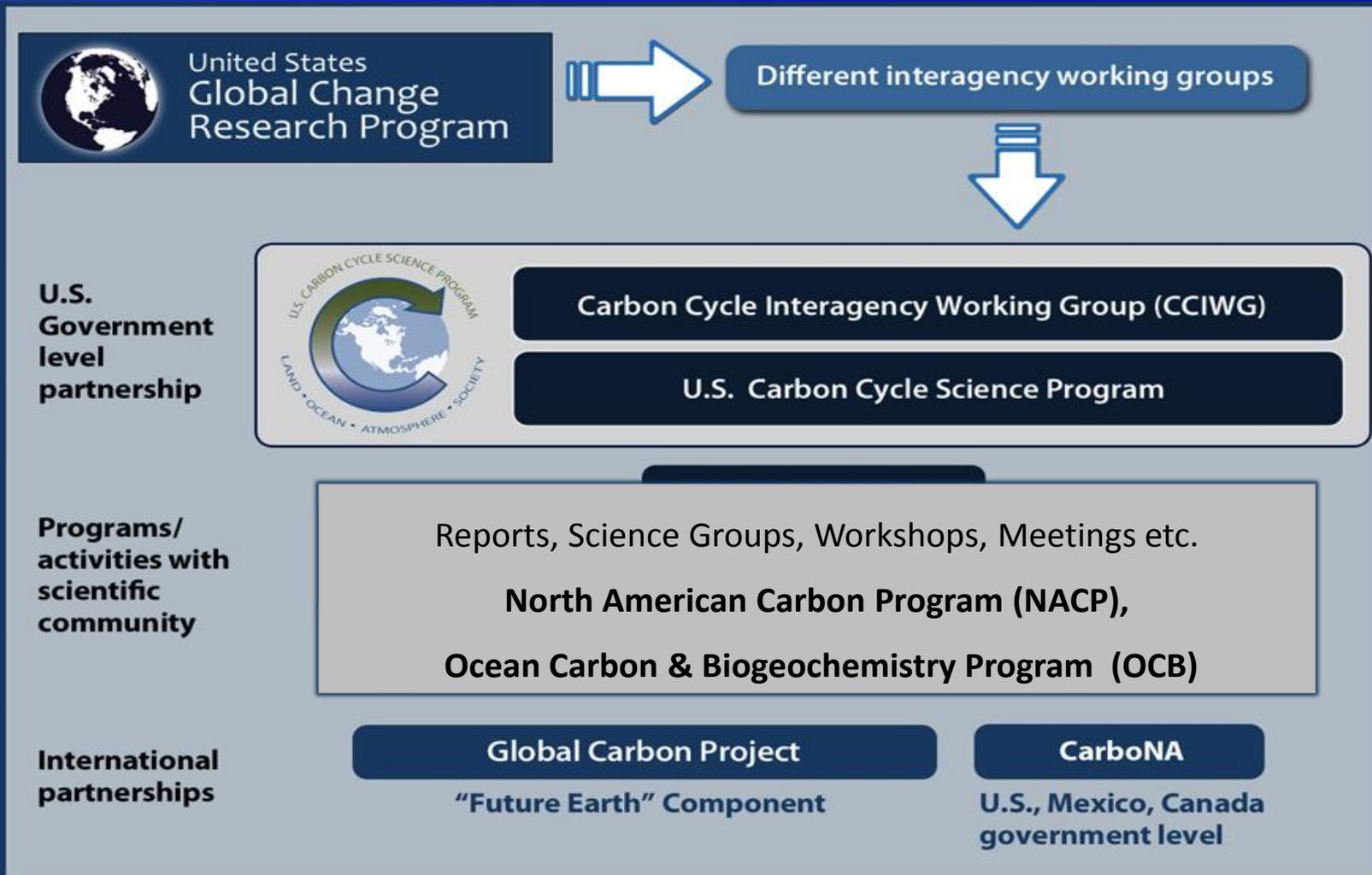
Monday, August 7, 2017: 10:15 AM-11:30 AM





## U.S. Carbon Cycle Science Program/CCIWG Mission

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



e.g.  
**SOCCR-2**

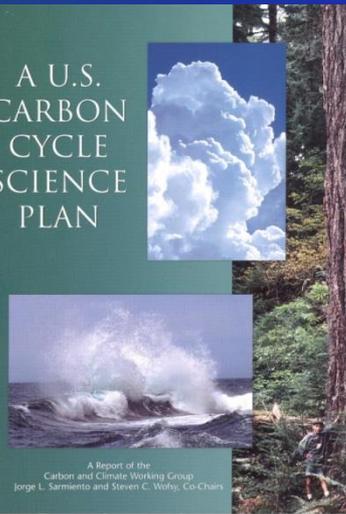


# Since 1998: CCIWG instrumental in process of prioritization of U.S. govt. carbon cycle science research themes

## What we do:

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

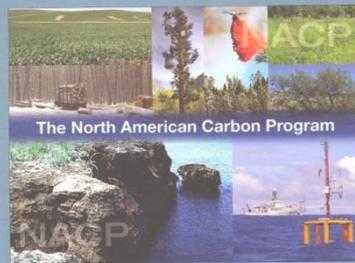
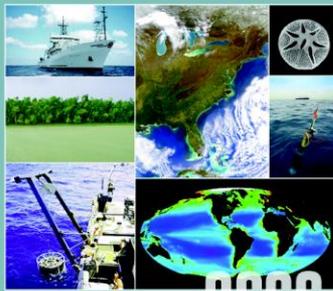
### A U.S. CARBON CYCLE SCIENCE PLAN



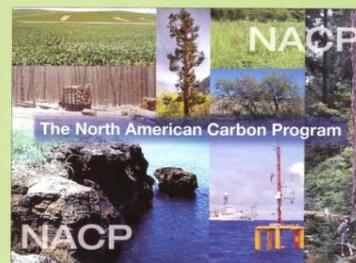
### Strategic Plan for the U.S. Climate Change Science Program



### Ocean Carbon and Climate Change An Implementation Strategy for U.S. Ocean Carbon Research



### Science Implementation Strategy for the North American Carbon Program



### OUR CHANGING PLANET



### THE NATIONAL GLOBAL CHANGE RESEARCH PLAN 2012-2021

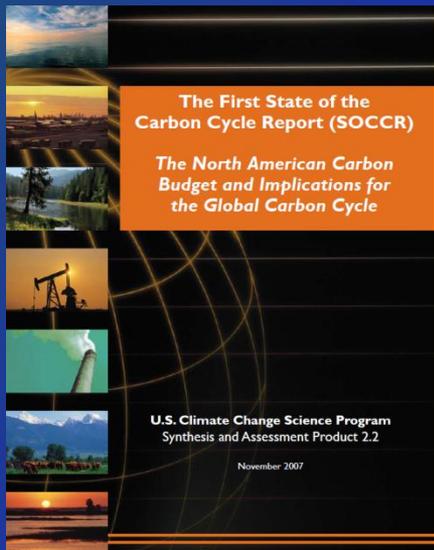
A STRATEGIC PLAN FOR THE U.S. GLOBAL CHANGE RESEARCH PROGRAM



### A U.S. Carbon Cycle Science Plan



Anna M. Michalak, Robert B. Jackson, Gregg Marland, Christopher L. Sabine, and the Carbon Cycle Science Working Group

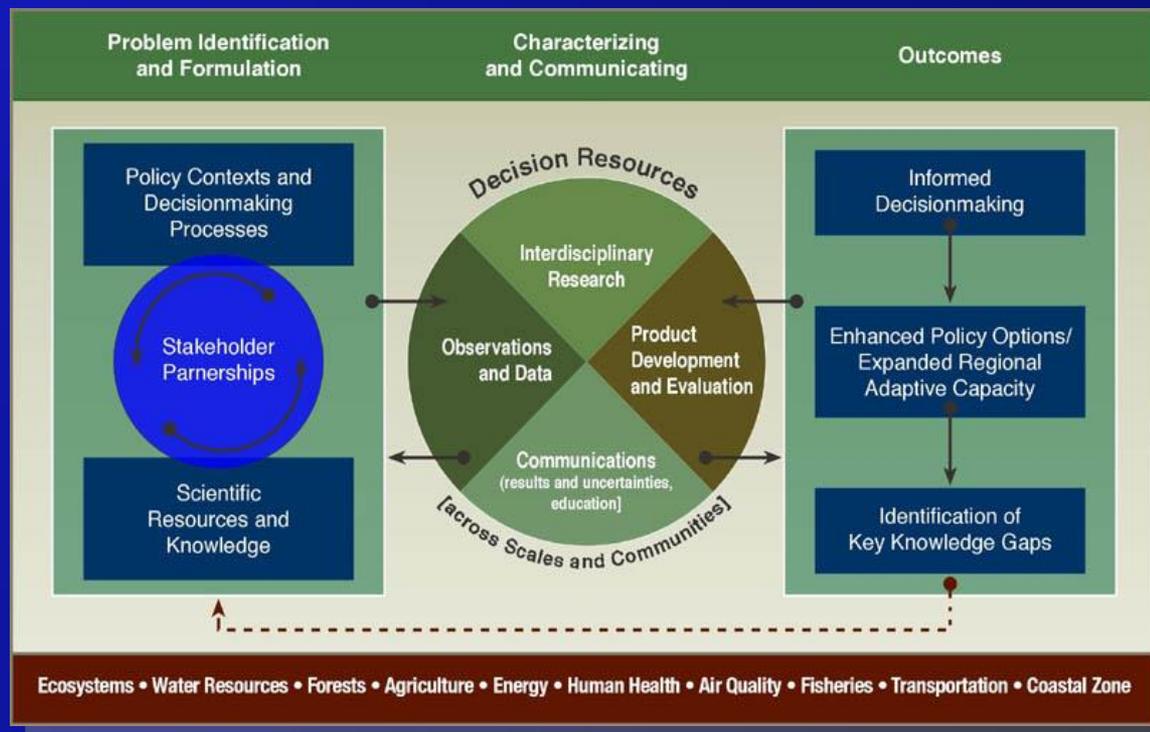


# 1<sup>st</sup> State of the Carbon Cycle Report: SOCCR-1 (2007)

- The North American Carbon Budget and Implications for the Global Carbon Cycle
- Synthesis and Assessment Product

## 2 major goals of SOCCR-1 (2007)

1. To summarize scientific knowledge about carbon cycle properties and changes for North America.
2. To provide scientific information for decision support and policy formulation concerning carbon.



U.S. Climate Science Program (now U.S. Global Change Research Program) Decision Support Strategy

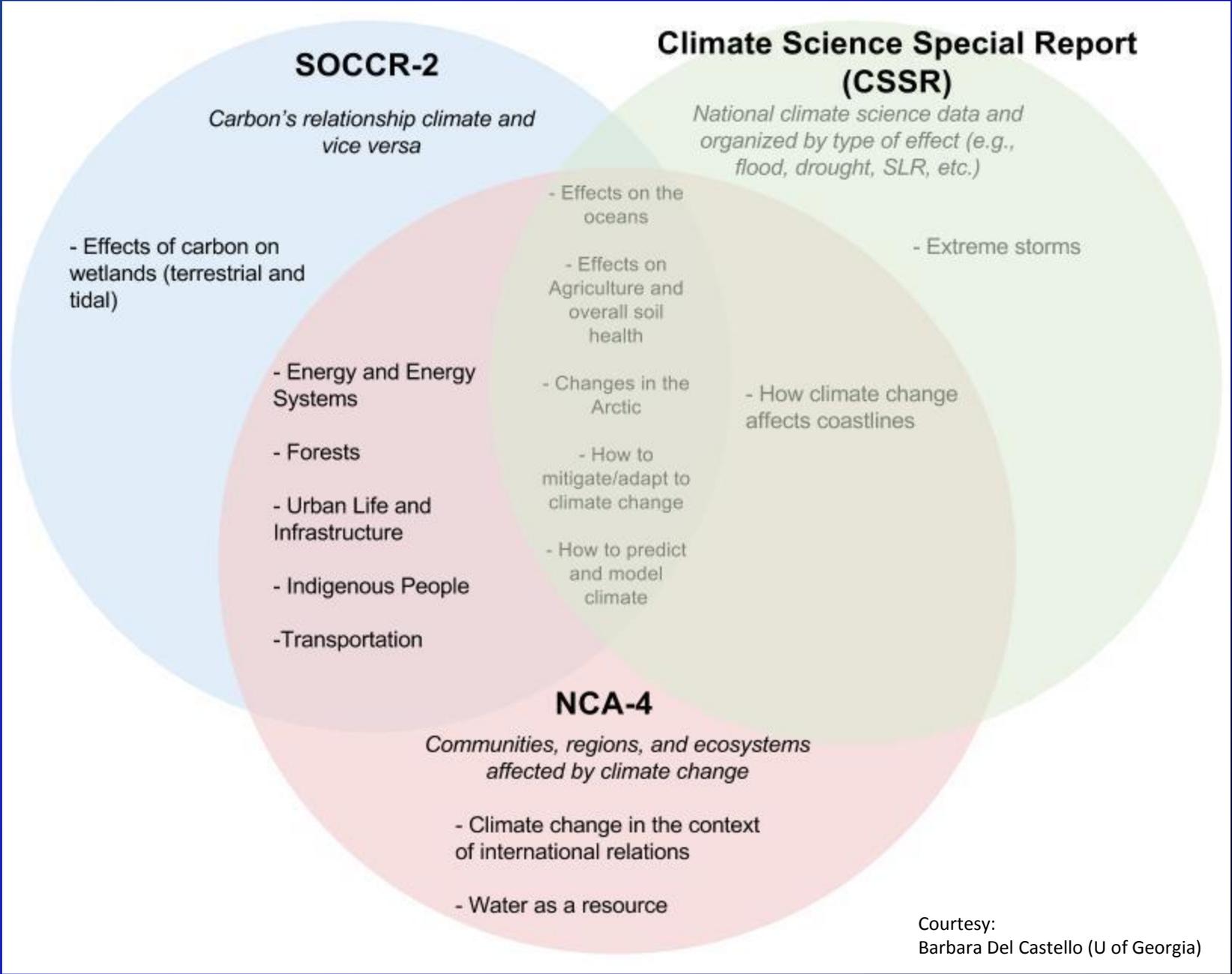
# 10 years later: SOCCR-2

- Follow-up to the 1st SOCCR (2007)
- Led by CCIWG
- Lead Administrative agency is USDA.
- 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 (2012-2021)

# SOCCR-2 broad assessment framework

1. Carbon Cycle at Scales (*Global Perspective, North American Perspective, U.S. 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.*)

SOCCR-2	#	State of the Science – Chapters - Draft	<u>Required sections</u> for each chapter
	I	Preface/motivation for the report/ advances since SOCCR-1	i. Key Message/ Findings/Highlights ( incl. traceable accounts - see examples from <a href="#">Health</a> and <a href="#">NCA</a> supporting evidence)
	II	Governmental, intergovernmental 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	ii. Introduction
	2	North American C budget past, present, and future	
Part II Human Dimensions of the C Cycle	3	Energy Systems (incl. Transportation)	iii. Historical context (incl. socioeconomic drivers of carbon emissions)
	4	Urban	
	5	Agriculture	iv. Current State of Carbon Cycle Understanding of Fluxes and Stocks
	6	Societal Perspective on Carbon	
	7	Tribal Lands	
Part III: State of Air, Land and Water	8	Atmosphere	v. Indicators, Trends, Feedbacks
	9	Forests	
	10	Grasslands	vi. North American and Global Context, Regional Perspective <ul style="list-style-type: none"> <li>• <a href="#">NCA regions</a></li> <li>• U.S., Mexico, Canada</li> <li>• Arctic, Tropics, <a href="#">RECCAP</a></li> </ul>
	11	Arctic/Boreal/Permafrost regions	
	12	Soils	
	13	Terrestrial Wetlands	vii. Societal drivers and impacts, carbon management and decisions
	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)	viii. Synthesis, conclusions, gaps in knowledge, and (near) future outlook <ul style="list-style-type: none"> <li>• overarching synthesis of the current state of the carbon cycle</li> <li>• key knowledge gaps/ opportunities and near-term outlook on the North American carbon cycle</li> </ul>
	18	Decision-support (social, behavioral, economic)	
	19	Future projections and associated climate change in North America	



Courtesy:  
Barbara Del Castello (U of Georgia)

# SOCCR-2 TEAM

USGCRP includes SGCR  
Principals, USGCRP NCO  
staff (NCA, GCIS, others)



Lead agency:  
USDA (legal)

Carbon Cycle Science Interagency Working Group (CCIWG)  
+ SOCCR-2 Federal Steering Committee

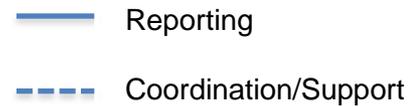
U.S. Carbon Cycle Science Program Office  
(i.e. Gyami Shrestha  
+ logistical support from UCAR CPAESS  
Boulder, Colorado)

Federal Liaisons  
for each chapter

5 SOCCR-2 Science Leads  
(Fed + non-Fed scientists)

Oak Ridge Editorial Team  
(reports to DOE)

Chapter Leads,  
Chapter Contributors  
(Fed + non-Fed scientists)



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

CCIWG SOCCR-2 Fed Steering Committee and USGCRP	Organization
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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

## 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)

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Ray Najjar	PSU
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\*USDA is the Administrative Lead Agency for SOCCR-2.

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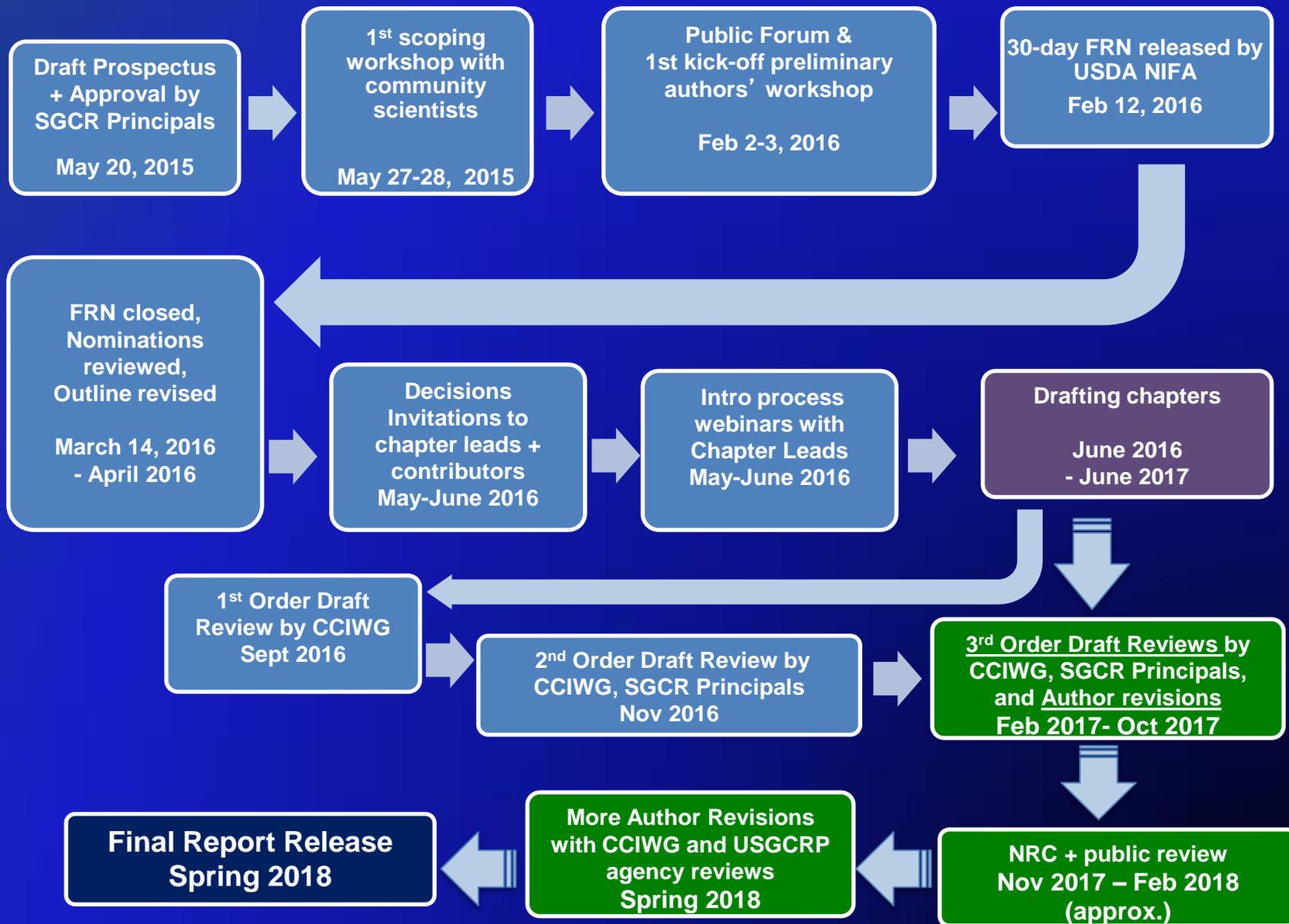
And more.....

200+

SOCRR-2 Authors

Collaborative partnership  
with US, MX and CA  
scientists

# Major SOCCR-2 PROCESS & MILESTONES (As of Aug 4, 2017)



# NAS Committee to Review SOCCR-2

The review will provide an overall critique of the draft SOCCR-2 and will address the following questions: (In <http://dels.nas.edu/basc/Studies-In-Progress>)

- Are the goals, objectives and intended audience of the product clearly described in the document? Does the report meet its stated goals?  
Does the report accurately reflect the scientific literature? Are there any critical content areas missing from the report?
- Are the findings documented in a consistent, transparent and credible way?
- Are the report's key messages and graphics clear and appropriate? Specifically, do they reflect supporting evidence, include an assessment of likelihood, and communicate effectively?
- Are the research needs identified in the report appropriate?  
Are the data and analyses handled in a competent manner? Are statistical methods applied appropriately?
- Are the document's presentation, level of technicality, and organization effective?  
What other significant improvements, if any, might be made in the document?

## Ongoing: Internal SOCCR-2 Writing and Reviews, other prep

- Completed June –July 2017 4-week 3<sup>rd</sup> order draft review prior to NAS + Public Review
- Iterative Federal feedback
- Iterations with chapter leads
- Revisions
- Deliberations with USGCRP regarding clearance needs for public and NRC review

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