



United States Carbon Cycle Science Program

An Interagency Partnership

Providing a coordinated & focused scientific strategy for conducting federal carbon cycle research

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The U.S. Carbon Cycle Science Program, in consultation with the Carbon Cycle Interagency Working Group (CCIWG), coordinates and facilitates activities relevant to carbon cycle science, climate and global change issues under the auspices of the U.S. Global Change Research Program (USGCRP) Interagency Committee or USGCRP Principals.

The CCIWG supports the peer-reviewed research of carbon cycle science across the federal government and is responsible for defining program goals, setting research priorities, and reviewing the progress of the research programs that contribute to carbon cycle science.

Twelve federal agencies and departments coordinate and support our program activities.

Mission

To coordinate and facilitate federally funded carbon cycle research, and provide leadership to the U.S. Global Change Research Program (USGCRP) on carbon cycle science priorities

Assessment of Carbon in North America: Science Informing Decisions in a Circular Economy

#SOCCR2 #20YearsofCarbonProgram

Gyami Shrestha, U.S. Carbon Cycle Science Program and Carbon Cycle Interagency Working Group (CCIWG);
Nancy Cavallaro, USDA NIFA (CCIWG co-chair)

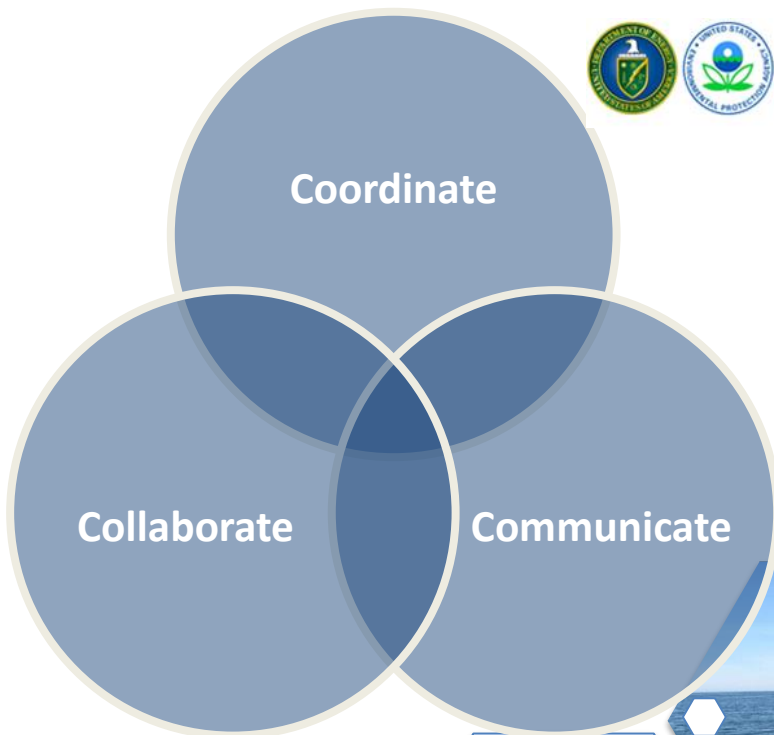
<https://CarbonCycleScience.us>

USDA-DOE Summit on Realizing the Circular Carbon Economy:
Charting a Course for Innovations in Agriculture and Energy
Golden, Colorado
July 24-25, 2018



Carbon Cycle Interagency Working Group (CCIWG) Since 1998/99

What We Do





A U.S. Carbon Cycle Science Plan

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

THE NATIONAL GLOBAL CHANGE RESEARCH PLAN 2012-2021

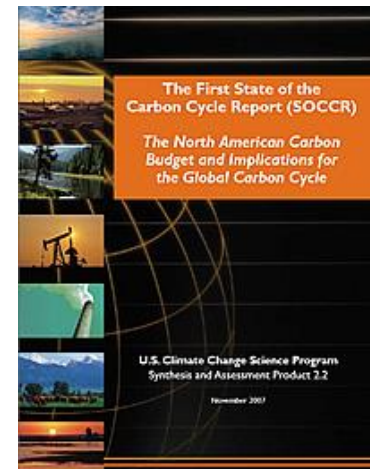
A STRATEGIC PLAN FOR THE U.S. GLOBAL CHANGE RESEARCH PROGRAM



Coming soon:

2nd State of the Carbon Cycle Report (SOCCR2)

- Follow-up to the 1st SOCCR (2007)
- Led by Carbon Cycle Interagency Working Group (CCIWG)/U.S. Carbon Cycle Science Program under USGCRP auspices
- Lead federal Administrative Agency is USDA.
- Focus on 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 U.S. Carbon Cycle Science Plan (2011), U.S. National Climate Assessment, USGCRP Strategic Plan (2012-2021) and Global Change Research Act (1990)



104 STAT. 3096

PUBLIC LAW 101-606—NOV. 16, 1990

Public Law 101-606 101st Congress

An Act

Nov. 16, 1990
[S. 169]

To require the establishment of a United States Global Change Research Program aimed at understanding and responding to global change, including the cumulative effects of human activities and natural processes on the environment, to promote discussions toward international protocols in global change research, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Global Change Research Act of 1990".

Global Change
Research Act
of 1990.
15 USC 2921
note.

SEC. 106. SCIENTIFIC ASSESSMENT.

On a periodic basis (not less frequently than every 4 years), the Council, through the Committee, shall prepare and submit to the President and the Congress an assessment which—

(1) integrates, evaluates, and interprets the findings of the Program and discusses the scientific uncertainties associated with such findings;

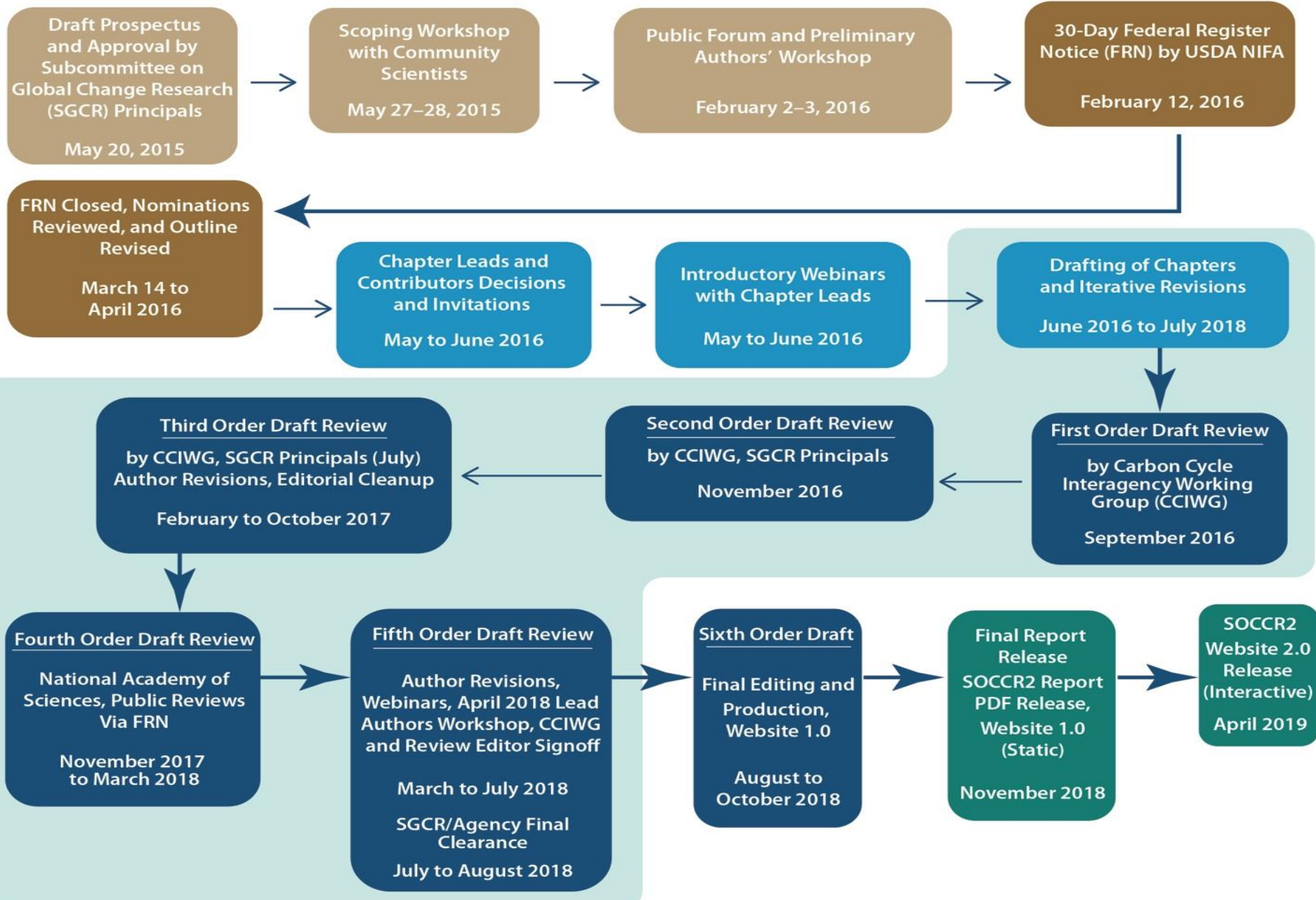
(2) analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; and

(3) analyzes current trends in global change, both human-induced and natural, and projects major trends for the subsequent 25 to 100 years.



Domain of The Second State of the Carbon Cycle Report. In addition to the land masses and inland waters of Canada, Mexico, and the United States, this report covers carbon dynamics in coastal waters, defined as tidal wetlands, estuaries, and the Exclusive Economic Zone (EEZ). The seaward boundary of the EEZ is typically 200 nautical miles from the coast. The geographical scope of the U.S. analysis includes the conterminous United States, Alaska, Hawai'i, and Puerto Rico. [Figure source: Christopher DeRolph, Oak Ridge National Laboratory.]

Major SOCCR2 Process Highlights, Reviews, and Timeline



***Second State
of the Carbon Cycle
Report (SOCCR2)***

Geographical Scope:
North America (United States,
Mexico, and Canada)
in Global Context

Carbon Cycle Science

**Carbon Data, Budgets,
and Fluxes**

Soils

**Terrestrial and
Tidal Wetlands**

**Inland
Waters**

**Energy
and Energy
Systems**

**Forests and
Grasslands**

**Urban Life
and Infrastructure**

**Indigenous People
Transportation**

Emissions from burning
fossil fuels represent the largest
single term in the carbon budget and are
offset less than half by terrestrial
and ocean carbon sinks

***Climate Science
Special Report
NCA4 Vol. I***

Geographical Scope:
United States

**Climate Science
Organized by Type
of Effect**

Extreme Storms

Sea Level Rise

**Floods and
Droughts**

Climate Change Effects on:

**Agriculture,
Overall Soil Health,
Coastlines, Oceans,
and Atmosphere**

**Changes in Arctic and
Boreal Ecosystems**

**Climate Change
Mitigation and Adaptation**

**Past and Future
Climate Modeling**

Human activities, especially
emissions of greenhouse gases,
are the dominant cause of
observed warming since
the mid-1900s.

**Global
Climate Change**

***Fourth National Climate Assessment
NCA4 Vol. II***

Geographical Scope:
United States and U.S. Regions

**Communities, Sectors, and Ecosystems Affected
by Climate Change; Climate Change in
Context of International Relations;
Water as a Resource**

Carbon Science Informing Decisions in a Circular Economy? Some SOCCR2 Highlights (draft)

- Carbon Dynamics in North America and the United States in a Global Context
- Fossil Fuels and Economic Impacts
- A Changing Landscape
- Ocean Acidification
- Arctic Changes
- Carbon in Crops
- Indigenous Communities
- Cities and Carbon
- Easy investments in the Future

Perspective: State of the Carbon in North America (Last Decade, Next Decade)

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<https://CarbonCycleScience.us>

#SOCCR2

#20YearsOfCarbonProgram