



American Society of Agronomy • Crop Science Society of America • Soil Science Society of America

5585 Guilford Road, Madison WI 53711-5801 • Tel. 608-273-8080 • Fax 608-273-2021
www.agronomy.org • www.crops.org • www.soils.org

August 6, 2020

Director David Holst
Director Chief Financial Officer
CAO, Office of Oceanic and Atmospheric Research
National Oceanic and Atmospheric Administration

Re: Notice of request for public comment on the Fifth National Climate Assessment
Document Number 2020-14904
Federal Register Effective Date: 7/10/2020
Federal Register Page Number: 41567-41569

Dear Director Holst,

The American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and Soil Science Society of America (SSSA) represent more than 8,000 scientists in academia, industry, and government, 12,500 Certified Crop Advisers (CCA), and 781 Certified Professional Soil Scientists (CPSS). We are the largest coalition of professionals dedicated to the agronomic, crop and soil science disciplines in the United States. Our member scientists work at the forefront of global change as it relates to growing crops and protecting ecosystem services, and we are pleased to submit comments on the U.S. Global Change Research Program's proposed themes and framework for the Fifth National Climate Assessment.

The Societies are broadly supportive of the proposed outline. With the understanding that the Assessment is a monumental task with important implications, we wish to offer only a few suggestions for consideration.

First, soil moisture is a key driver of world food production. Changes in the intensity, duration, and seasonality of precipitation are coming, and these are important to observe and assess. The Societies recommend that the NCA5 also make sure to consider run-off, flooding, off-season precipitation, and increased transpiration due to higher temperatures. These factors may limit soil moisture during the growing season, which could limit crop growth or normal physiological function. For example, when plants' stomata close to conserve water, evaporative cooling ceases, resulting in temperature stress, and closed stomata will reduce photosynthesis and likely impair growth, yield, or even the survival of the crops.

Second, we applaud the decision to include a discussion of non-climatic trends. But just as important as highlighting risks, benefits, and adaptive measures identified in published literature, the NCA5 would be well-served to identify the gaps in knowledge that need to be filled. For example, soil carbon sequestration may be identified as an adaptive measure against climate change. It would be useful to share what is known about the rate and extent of carbon sequestration in soils, but perhaps more useful would be a review of what is still left to be discovered about how soil carbon sequestration varies by ecosystem, agricultural management, and crop genetics and physiology. Models for soil carbon

sequestration are calibrated using data from experiments in which only a handful of interacting factors have been studied, and most of the studies have been conducted in controlled environments that may not represent field conditions.

Lastly, policy changes with respect to managed lands (farmland) have the potential to make a significant impact on climate change. The relative impacts of different policy decisions are useful for policymakers to compare. Therefore, in addition to projecting changes based on modeling current trends, we hope the NCA5 would include evaluations of alternative policies and new technologies with an emphasis on managed lands

Thank you for accepting these comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'N. Goeser', with a long horizontal flourish extending to the right.

Nick Goeser, CEO
American Society of Agronomy
Crop Science Society of America
Soil Science Society of America