NATURAL RESOURCES CONSERVATION SERVICE:

NATIONAL SURVEY ON CLIMATE AND WEATHER

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Key Points

70% of NRCS employees who responded to the survey believe that it is important for producers to adapt to climate change to ensure the long-term viability of U.S. agriculture.

49% of the respondents reported that they are confident in their ability to apply weather forecasts and information to the services that they provide.

→ Opportunities for future collaboration between NRCS and other agency partners include outreach and education on climate and weather-related issues by linking them to existing programs that help producers to reduce climate-related risks.

Project Overview

The USDA Climate Hubs, NRCS, and the University of Vermont collaboratively designed a survey, administered in February/March 2017, to capture NRCS field staff views and understanding related to climate change, weather variability, and potential impacts on agriculture. The survey also addressed NRCS employees' perceptions about the risk that weather variability poses for U.S. farmers. Over 8,000 NRCS employees nationwide were targeted and 1,893 NRCS staff completed the survey (response rate = 22.3%, calculated using the RR4 method of the American Association for Public Opinion Research, AAPOR). The three main positions held by respondents were District Conservationist (25%), Soil Conservationist (19%) and Soil Conservation/Engineering Technician (16%). The majority work at NRCS Service Centers (74%), followed by Area Offices (12%) and State Offices (10%).

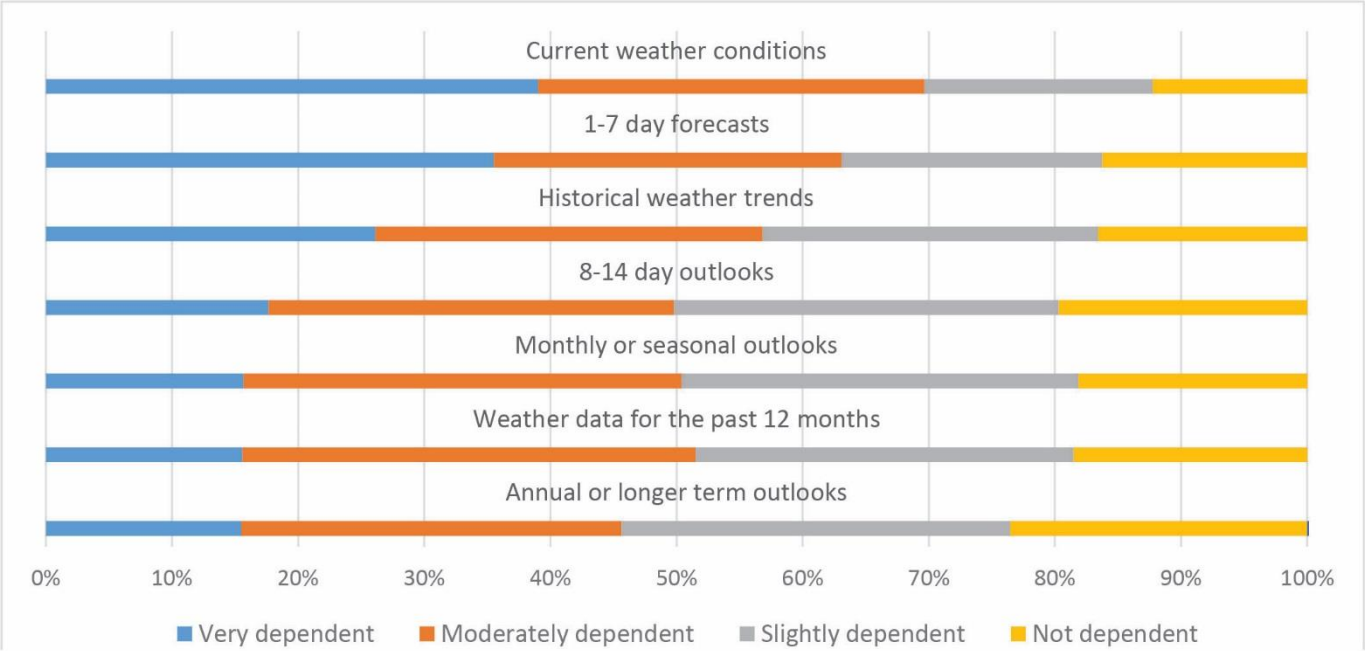

Figure 1: NRCS respondents reported dependency on weather and climate information

USDA Climate Hubs
U.S. DEPARTMENT OF AGRICULTURE

USDA United States Department of Agriculture
Natural Resources Conservation Service

The University of Vermont

Survey Result Highlights

NRCS employees most commonly integrate daily, weekly, or seasonal weather forecast information into guidance to clients for the following topics: in-field conservation practices (73%), grazing and forage management (71%), tillage (67%), livestock management systems (64%), and on-farm water management (60%). Survey respondents are most dependent on current and short-term weather information (1-7 day forecasts), and much less dependent on monthly and seasonal outlooks or annual and longer-term outlooks (Figure 1). Of 12 weather-related tools and resources, respondents most frequently use the U.S. Drought Monitor (68%), growing degree day tools (41%), and evapo-transpiration indices (38%).

NRCS employees reported regularly working with producers who have experienced adverse events/conditions in the past few years largely tied to extreme or variable weather events. Climate or weather trends reported to be the most concerning in each state vary (Figure 2). The majority of states and territories (29) reported producers are most concerned with longer dry periods/drought, followed by increased soil erosion (6), increased weed pressure (4), higher incidences of tree pathogens (4), and higher incidence of wildfire (3).

Most respondents (65%) agree or strongly agree that there is increasing variable and unusual weather in their areas, and that to cope with increasing climate variability farming practices will need to change (70% agree or strongly agree). More than half (52%) agree or strongly agree that extreme weather events in recent years have affected the long-term management goals of producers in their service area. Most respondents (65%) agree or strongly agree that producers use climate information when making farm-related decisions and 41% agree or strongly agree that there is an increased need for NRCS's programs in their service area due to changing weather patterns. The majority agree or strongly agree (66%) that they would like climate or weather forecasts to inform the services they provide in the future. While 53% of respondents believe that assisting producers to prepare for weather variability is part of their job, only 35% agree or strongly agree that they have the knowledge and technical skill to help producers deal with those threats.

Discussion

The mission of the Climate Hubs is to work with USDA agencies and partners to develop and deliver science-based, region-specific information and technologies to agricultural and natural resource managers, enabling climate-informed decision-making, and assisting in the implementation of those decisions. As a result of this survey analysis, we have identified three areas of potential collaboration between NRCS and the Climate Hubs: (1) providing greater access to and awareness of weather and climate related tools; (2) providing educational resources on the topic of climate science and global weather dynamics; (3) developing outreach and education messaging through the NRCS Public Affairs Division on climate and weather-related issues. Messaging could be linked to existing NRCS efforts, such as the Soil Health Initiative and to conservation practices that reduce risks, increase productivity, and build resilience across production sectors.

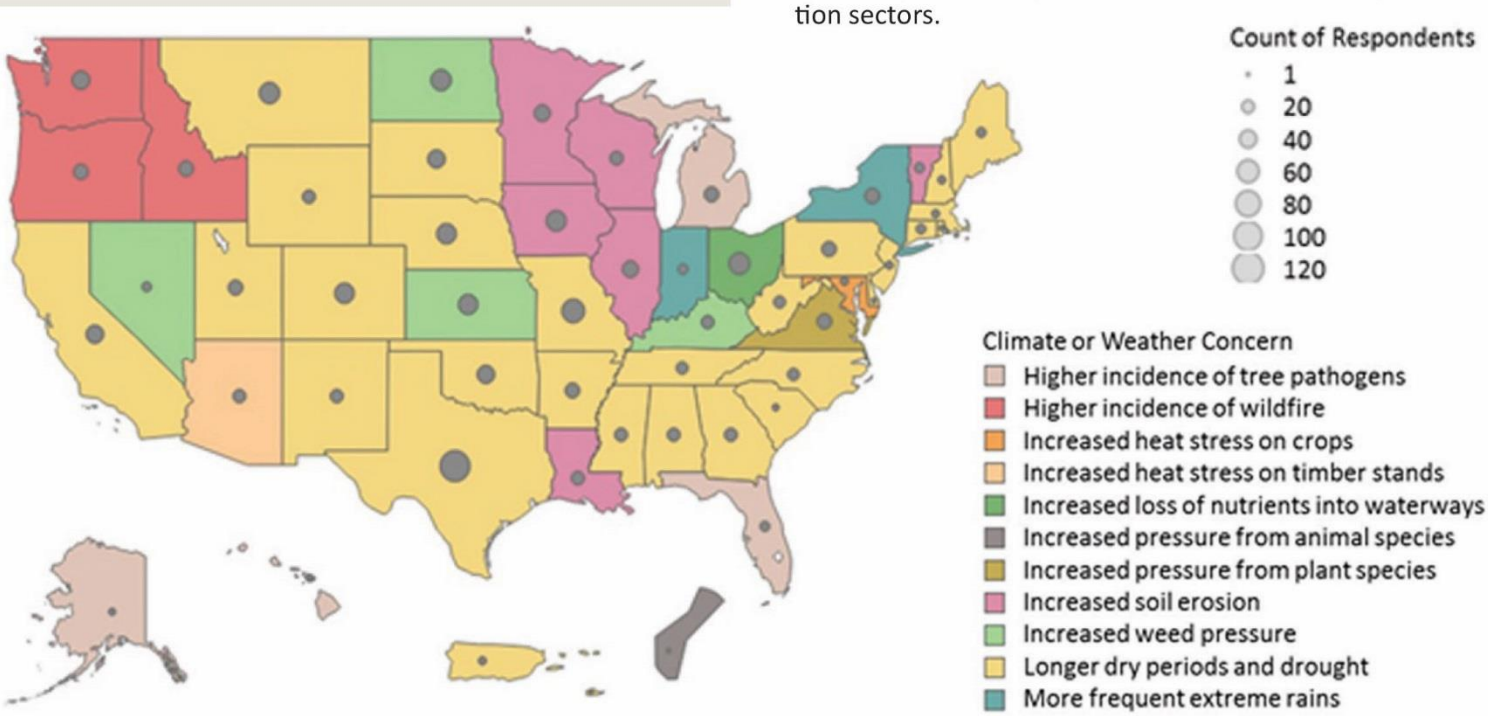

Figure 2: Most common climate or weather concern of NRCS field staff per state (n=1,376). Twenty-six climate and weather trends were rated on a Likert scale (1=not concerned; 2=slightly concerned; 3=concerned; and 4=very concerned

Figures by Sarah Wiener. Photography credits: Rachel Schattman