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## Ready, willing, and able? USDA field staff as climate advisors

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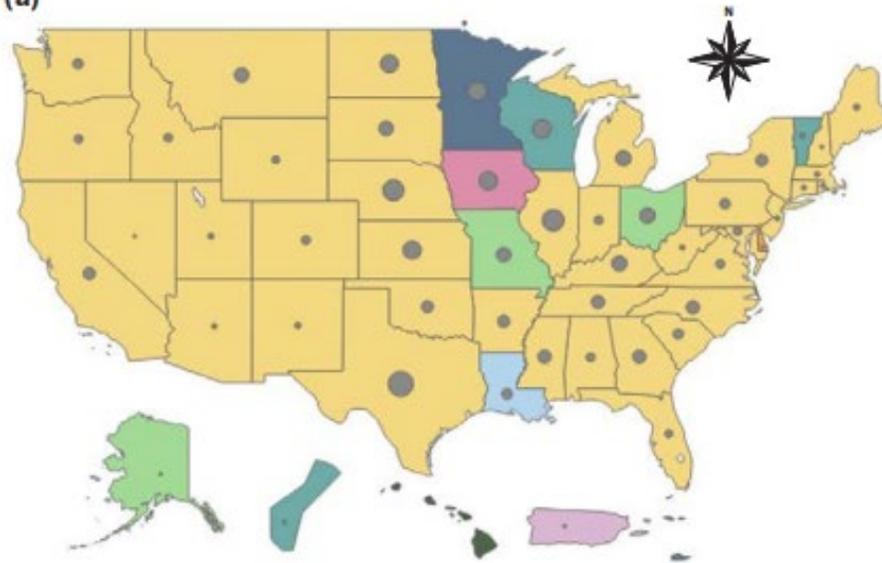
**Abstract:** Natural resource advisors operate at a natural resource–climate nexus that presents opportunity for utilization of regionally relevant climate science and tools to support climate smart decision making among land managers. This opportunity, however, may be underutilized. In thousands of county offices across the country, USDA field staff with the Natural Resources Conservation Service (NRCS) and Farm Service Agency (FSA) interface with farmers on a daily basis to provide conservation technical assistance, farm loans, and disaster recovery assistance. In this study, we conducted a survey of NRCS field staff ( $n = 1,893$ ) and a similar survey of FSA field staff ( $n = 4,621$ ) to determine the following: (1) how concerned USDA field staff are with both general and specific climate and weather threats and their effect on agriculture and forestry, (2) what available climate and weather resources staff are currently using, (3) how these factors relate to USDA field staff’s confidence and interest in playing the role of climate advisor, and (4) the differences that exist between NRCS and

land managers, including guidance on how to weigh climate risks and take adaptive action (Hibbs et al. 2014; Lemos et al. 2014; Wojcik et al. 2014; Church et al. 2018). To be an effective climate advisor, one must commit substantial time to “finding, understanding, translating, and communicating a variety of data and tools and identifying past, present, and future weather and climate conditions” (Haigh et al. 2015). Playing the role of climate advisor presents institutional and personal challenges related to accessing current information and building the knowledge and capacity to apply climate and weather tools to specific agronomic and other natural resource based decision making contexts (Hibbs et al. 2014; Wojcik et al. 2014). Organizations such as the USDA Climate Hubs have recently emerged to support advisors in developing this capacity, recognizing that advisors play a crucial role in land managers’ decision making. However, there is a dearth of information about how advisors engage with climate

**Figure 1**

Most common climate or weather concern of (a) USDA Farm Service Agency (FSA;  $n = 3,571$ ) and (b) USDA Natural Resources Conservation Service (NRCS;  $n = 1,376$ ) respondents by state.

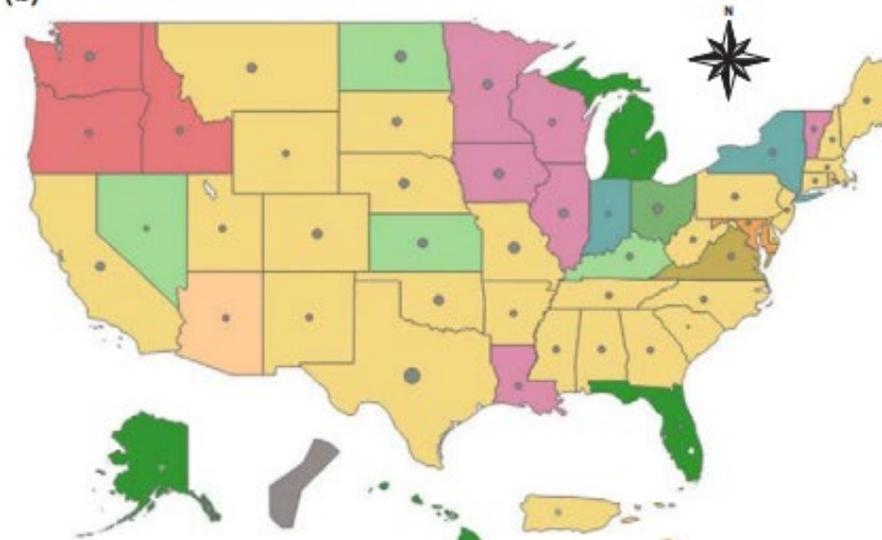
(a)



**Legend**

- Longer dry periods and drought
- Increased soil erosion
- Higher incidence of tree pathogens
- Higher incidence of wildfire
- Increased weed pressure
- More frequent extreme rain events
- Excessive moisture
- Increased flooding
- Increased heat stress on crops/timber stands
- Increased incidence of hurricanes or tropical depressions
- Increased loss of nutrients into waterways
- Increased pressure from animal species
- Increased pressure from plant species
- Increased insect pressure and higher incidence of crop disease (tie)

(b)

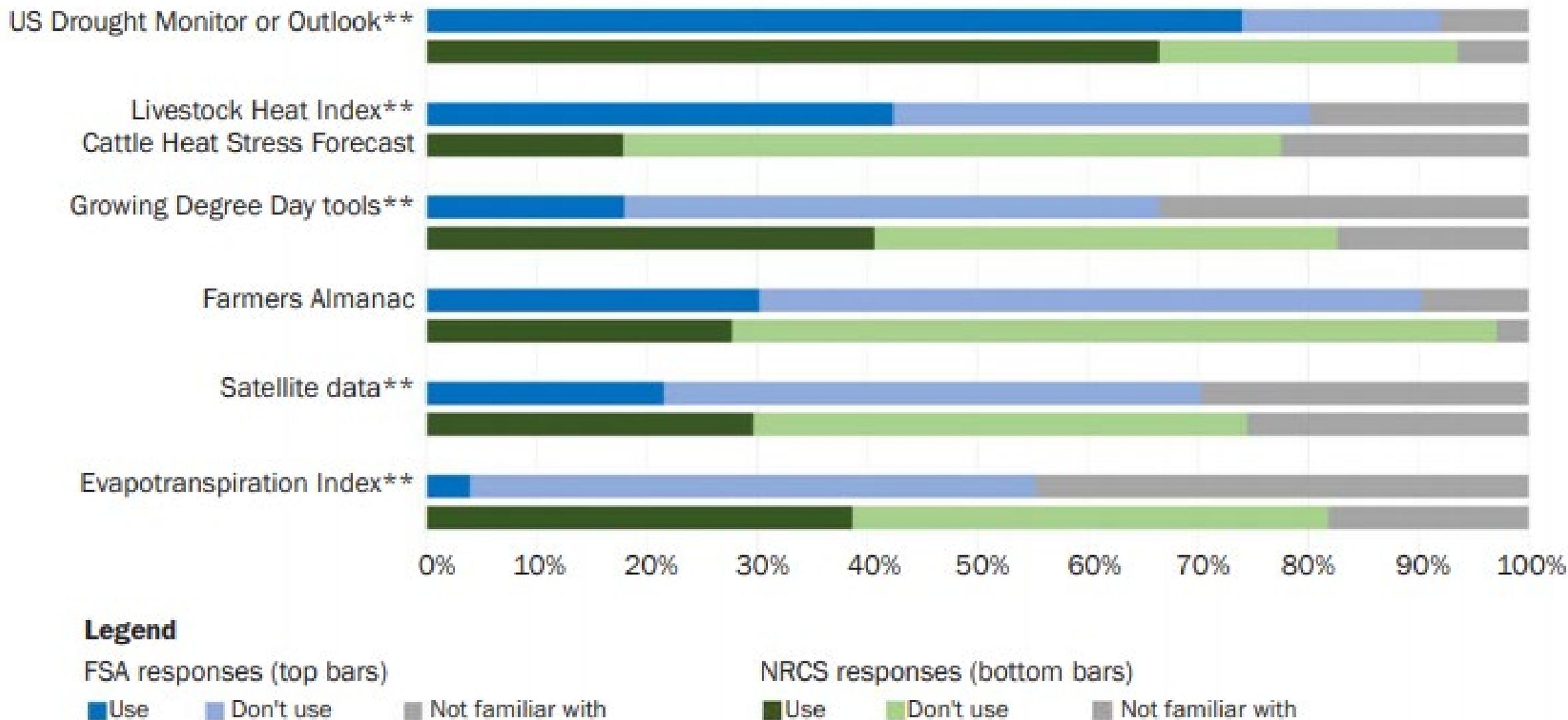


**Number of responses**

- 1
- 100
- 200
- 300
- 350

**Figure 2**

A comparison of USDA Natural Resources Conservation Service (NRCS) and USDA Farm Service Agency (FSA) responses to "Do you use the following weather-related resource?" Top five resources are shown from a list of nine, in descending order of mean use among both agencies. Question from Prokopy et al. (2013).



**Figure 3**  
 Responses to "How dependent are you on the following types of weather information to do your job?" Options in chronological order, beginning with forecasts and ending with observations. Question from Prokopy et al. (2013).

