USDA Climate Hubs Quarterly Report

Summer 2019

PURPOSE

The Climate Hubs reduce climate related risks to agriculture, forestry, and rural communities by working with and through USDA agencies and partners. The hubs develop and deliver science-driven strategies and tools so that USDA programs, advisors, and land managers can make informed decisions to manage risk.

Assessments & Syntheses

The Northern Forests Hub, via a two-year collaboration between the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), inter-tribal organizations, College of the Menominee Nation, and tribes **generated the publication "Dibaginjigaadeg Anishinaabe Ezhitwaad - A Tribal Climate Adaptation Menu"**. This adaptation strategies menu was designed to be paired with the Adaptation Workbook and has already been used in three adaptation planning workshops led by tribes. It is also a valuable tool for communicating indigenous values and approaches to climate adaptation and has been featured in multiple professional meetings attended by natural resources and adaptation professionals.

Members of the Southern Plains Climate Hub team have recently published several new scientific papers. These include an analysis of trends in intense precipitation across the United States in the journal Climate; generation of synthetic daily weather data for use in climate change scenarios in the journal Environmental and Natural Resources Research; and an evaluation of regional climate services activities across the Americas in the journal Climate Services. These and other ongoing studies provide a science-based foundation for regional risk assessments and communication products, as well as training and education opportunities.

Outreach & Education

The Northern Plains Hub organized a two-day AgroClimate Outreach Exchange event for 65 partners from USDA ARS, NRCS, FS and FSA, University Extension, Conservation Districts, state government, and agricultural community leaders. The event fostered the exchange of innovative climate-related outreach tools our partners have developed in collaboration with the NPCH over the past five years. The Hub raised the visibility and accessibility of our partners' novel approaches and outputs for addressing climate change, which will encourage adoption and expansion of these approaches in other states.

Participants at the AgroClimate Outreach Exchange, organized by the Northern Plains Climate Hub, proudly display their agroclimate project ideas. Photo credit: Dannele Peck

Outreach & Education

The Northeast Hub produced three farmer profiles as outreach materials for farmer-to-farmer learning through collaboration with undergraduate capstone students as part of their communications education. Profiles of Vermont farmers highlight ways they are adapting to current climate trends. The next generation of communication specialists developed professional-level case study reports through an integrated real-world learning approach. The collaborative project team explored climate adaptation on working Vermont farms and shared stories of success and challenges with climate change.

The Midwest Climate Hub coordinator contributed at the Climate Services Summit scheduled June 4 to 5, 2019 in Columbus, OH. Many sectors, organizations and climate services partners attended and built collaboration and relationships that are necessary to ensure effective climate services for Ohio. The MCH director was on the planning committee and co-originator of the climate summit ideas in the Midwest.

The Caribbean Climate Hub completed the data collection phase of their Hurricane Assessment work. The assessments evaluated the effects of Hurricanes Irma and Maria on the forestry and agricultural sectors of Puerto Rico and the US Virgin Islands and the participant perspectives regarding the response and recovery efforts that followed. The data were gathered through small focus group discussions and individual interviews with USDA employees, forest managers, private forest-landowners, farmers in various sectors, agricultural business owners, University Extension, and territory-level government representatives.

In partnership with UC International Programs, Cornell University, and Ecoagriculture Partners, along with USDA Foreign Agricultural Service and Office of the Chief Economist, the California Hub developed curriculum for landscape-scale climate-smart agriculture planning for delivery to developing nation government officials at the sub-national level. The curriculum was piloted in Tanzania during the final week of March and first week of April. The Hub worked with their partners to adjust and improve upon the curriculum following feedback from the pilot program and completed the project in June.

The Southwest Hub collaborated with multiple partners to host three workshops this quarter. Working with the Institute for Tribal Environmental Professionals, the Hub trained 16 tribal professionals in climate adaptation. The Hub also assisted in organizing the inaugural meeting of Southwest Agroforestry Action Network and with university partners, the SC CASC and the NP and SP Hubs, and co-hosted a Soil Moisture and Wildfire workshop at the 2019 Fire Behavior and Fuels Conference hosted by the International Association of Wildland Fire.

Ohio Summit on Tools for Extreme Weather and Climate Resilience, June 2019. Speaker Aaron Wilson, State Climate Office of Ohio/OSU Extension Photo Credit: Charlene Felkley

Technical Support

The Southeast Hub developed a Southern Pine Beetle Outbreak Model (SPBOM) designed to forecast the distribution and severity of southern pine beetles (SPB) for the coming growing season. SPBOM uses a combination of; 1) the previous year's SPB spot data; 2) the most recent (May 2019) NOAA monthly weather forecasts for the southeastern US; 3) the most recent Forest Inventory and Analysis (FIA) data of stand origin, species composition, and stand density; and 4) WaSSI hydrologic model predictions of pine evapotranspiration (a measure of tree stress); to predict SPB outbreaks at a county level resolution.

The Northwest Climate Hub hosted an interdisciplinary workshop "Southeast Alaska Drought: Refining Drought Metrics for a Temperate Rainforest" attended by over 90 participants from forestry, fisheries, municipalities, universities, and ski industry to discuss the lack of precipitation in southeast Alaska and refine drought metrics for a temperate rainforest. Presenters, including NDMC, NWS-Juneau, ACCAP-NOAA RISA, AK-CASC, FS S&P, FS RD, NRCS, hydropower, Metlakatla Indian Community, UA Southeast & Fairbanks, shared their perspectives and observations of drought impacts in southeast Alaska, how different sectors are experiencing and mitigating the effects of drought, and how to monitor and report drought impacts.