COMMITTEE FOR CLIMATE SERVICES COORDINATION

Record of Actions for 2016-1 Meeting

Silver Spring, Maryland

29 November 2016

In-Person Participants

Agency	Name
NOAA/OFCM	William Schulz, Federal Coordinator
NOAA/OFCM	Donell Woods
NOAA/OFCM	Kenneth Barnett
OFCM/STC	Floyd Hauth
OFCM/STC	Glenn Austin
NOAA/CPO:	Wayne Higgins
NOAA/CPO	Marian Westley
NOAA/CPO	Paul Hirschberg
NOAA/NWS/Climate Services Branch	Fiona Horsfall
Centers for Disease Control	Jesse Bell
DOD/USAF	Ryan Harris
NGA	Erica Sauer, USN
USGCRP	Fred Lipschulz

Dial in Participants:

Agency	Name
NOAA/NCEI	Mike Brewer
NOAA/RCS ER	Ellen Mecray
NOAA/RCS	Beth Hall
NOAA/NERCC	Arthur T. Degaetano
NOAA/CPC	Mike Halpert
USDA Climate Hubs	Rachel Steel
DOD/USAF	T.C. Moore
DOD/USN/FNMOC	John Ertl,
DOD/USN/FNMOC	Megan Hutchins
DOD/USN/FNMOC	Dereck Podowitz,
DOD/USN/NPS	Tom Murphree,
DOD/USA/HQ	Louis Escamilla
DOI/USGS/CSC	Alexander Bryan

ADMINISTRATIVE REMARKS

Donell Woods, OFCM Senior Physical Scientist, provided administrative remarks.

OPENING REMARKS

Fiona Horsfall, Chief, NWS Climate Services Branch, provided opening remarks which included introductions, a review of the agenda and the exploratory meeting in May 2016, and a discussion of the goals and objectives of the meeting. She noted that there were many climate services activities going on in agencies but no overall coordination to ensure that these services were meeting stakeholder needs in a consistent fashion.

This committee will provide coordination to link the existing infrastructure within agencies and formally codevelop climate services by sharing relevant information with climate service partners to provide climate information to the public.

Fiona stated the meeting goal was to identify ongoing activities within agencies at the field office level and recommend a path forward for improved coordination between agencies for provision of climate services at the regional and local level. She also stated the Climate Services Coordination Committee will not duplicate the work of USGCRP as it will be focused on service delivery/operations.

Bill Schulz informed the committee that the formation and purpose of this committee had been coordinated with and approved by the ICMSSR and FCMSSR. Updates on the committee's activities will be provided to the ICMSSR and FCMSSR at their future meetings.

Discussion included comments regarding agricultural, security, national and international aspects and applications, and the time span of useful climate information. Climate services now span monitoring, analysis, prediction and change. Delivery of the information is also important.

AGENCY PRESENTATIONS

(Presentations located at **http://www.ofcm.gov/groups/CS/meetings/meetings.htm)**

CDC

Jesse Bell, collocated at the National Centers for Environmental Information and the CDC, described what CDC is doing to prepare the nation for health effects of climate change. CDC helps states and cities prepare for health challenges of climate change by providing scientific guidance, developing decision support tools, ensuring public health concerns are considered in climate change adaptation and mitigation strategies, and creating partnerships between public health and other sectors.

CDC's Climate and Health Program is the nation's only investment in climate change preparedness for public health sector. CDC accomplishes this by funding 18 state and local health departments. This program provides the framework and tools for planning, implementing, and evaluating climate adaptation strategies and the tools to identify populations and places vulnerable to climate impacts. It also provides materials to help communicate climate and health issues to public health partners (e.g., extreme heat toolkit).

CDC's Climate Ready States and Cities Initiative supports the work of 16 states and 2 cities to do pioneering work to develop the methodologies for projecting and responding to climate change. These methodologies can be adopted by health departments around the country.

Jesse also described CDC's National Environmental Public Health Tracking Network. This online portal provides data on climate change and heat. Examples included historic temperature distribution and extreme heat days, projected extreme heat days, heat vulnerability, and heat ER visits, hospitalizations and deaths.

Potential future additions to the CDC tracking portal include additional heat-health data, National Weather Service (NWS) products, NLDAS and NCA precipitation data, drought and soil moisture data, and FEMA flood data.

Discussion comments noted the opportunities to add data interactions with USDA, NASA and the WHO. It was also suggested that linking with NSF may provide grants for co-funding expanded services or related research.

DOD/Air Force

Ryan Harris briefed climate services from the AF and Army perspective and in partnership with the Navy. The AF focus is more international but also supports the military installations in the U.S. The 14WS has the operational climate services mission and works with NCEI in Asheville NC.

The AF takes a 3-tiered approach to climate services that cover climate monitoring, analysis and prediction. They provide tailored climate products for DOD forces that can go anywhere in the world at any time. An example of their products is a global drought monitor. Ensembles are used for monthly and seasonal predictions. Climate data can be used to project impacts on systems like the RPVs and the spread of infection diseases.

Partnerships can be used to help with national climate assessments related to security threats. There is a need for actionable data based on operational thresholds. A lot of the climate product time horizons are in the 5-year window.

Discussion comments included the importance identifying highest priority needs that would help determine needs based research.

DOD/Army:

Louis Escamilla commented that although Army is a consumer of weather products and climate services, they also monitor current climate service developments/activities and are prepared to assist if and when needed.

DOD/Navy - FNMOC:

Megan Hutchins noted her concurrence with much of what Ryan had briefed related to climate service functions. However, the Navy customer base is different. The Navy responds to land and marine based climate questions. Considerable support is also provided to the intelligence community for forensic purposes.

The Navy works closely with the NPS in areas such as Advanced Climate Analysis and Forecasting (ACAF). The top three updates being worked on are to:

- Include new oceanographic and sea ice data sets into ACAF.
- Improve electromagnetic and electro optical climate support and expand it worldwide.
- Add seasonal to sub seasonal forecasting and climate outlooks for Navy customers for mission planning.

The Navy will continue to work closely with their AF and NPS partners in climate services.

DOI/USGS

Alex Bryan presented for USGS Climate Science Centers. The Climate Science Centers (CSCs) partner with natural and cultural resource managers to provide science that helps fish, wildlife, ecosystems, and the communities they support adapt to climate change with a focus on long term climate change.

The CDC's conduct cutting-edge research projects at local, regional and national scales; and produce products that include climate, water and ecosystem modeling, and geospatial, habitat, and species-level data. Their work is built upon federal-university partnerships, and depends on engagement with a community of stakeholders to define research priorities and initiatives. They also provide educational opportunities for students and early career scientists through fellowships, workshops, and trainings and work with tribes and indigenous communities to better understand their specific vulnerabilities to climate change and to help them adapt to these impacts.

The CSCs were established within DOI by Secretarial Order No. 3289. National coordination and management for the CSCs is provided by the U.S. Geological Survey's National Climate Change and Wildlife Science Center.

NOAA/National Weather Service (NWS) - Climate Service Branch

Fiona Horsfall presented a briefing on NWS national, regional, and local operational climate services. NWS provides an end-to-end approach to climate services from observations to prediction to user outreach at national and local levels.

At the national level services include prediction, monitoring, and assessment of the state of the climate; modeling and applied research; and partnerships. The regional services provide coordination and oversight of local programs; outreach; liaison to HQ; requirements; and partnerships. Local services deliver products and service to users; outreach and education; local climate studies; and partnerships. The guidance given to the 150 local offices is to focus on the protection of life and property and economic well-being. More specific tailored information requests are referred to private sector providers.

The Climate Services Branch is responsible for coordinating the various tools that are provided by NWS and its partners for stakeholder access to timely, continuous, and reliable climate records. Resources available include online and resident training, local climate analysis tool (LCAT), local impacts of climate variability and change, drought, beyond Tavg and Ptotal, decision support, climate services seminar series, factsheets on a variety of climate topics, and outreach.

The Climate Prediction Center delivers real-time products and information that predict and describe climate variations on timescales from weeks to year(s) thereby promoting effective management of climate risk and a climate-resilient society. Partnerships with USDA and USAID provide climate data and products for agricultural and health applications.

For the future, CSC plans a more coordinated approach to consistent and comprehensive climate-related information to stakeholders, more agency support and recognition of coordination at the regional and local levels, and co-development of regional climate services to provide consistent and comprehensive information.

NOAA/Climate Program Office (CPO)

Wayne Higgins discussed the goal, vision and mission of the CPO. He stated that the CPO works to improve climate intelligence and its linkage to resilience, especially for extreme events. He cited CPO's unique value as integrating information, engaging the community on mission-driven research priorities, and collaboration across OAR, with NOAA service lines, other federal agencies, and through partnerships and outreach.

Wayne summarized the FY16 research competition and the opportunities and challenges related to emerging requirements for each of the CPO divisions. He suggested that one of the functions of this committee could be to provide input and advice to program managers.

NOAA/National Center for Environmental Information (NCEI)

Mike Brewer described NCEI activities related to climate services. He described the spectrum of climate services partners within NOAA as well as in other agencies, Cooperative Institutes, academia, the private sector and the WMO. Climate services are delivered through national centers and regional climate centers.

NCEI serves as an authoritative source of global and US climate monitoring data. They also lead the development of Annual State of the Climate and development of sustained US Climate Assessment and supporting reports

NCEI has long emphasized work with the six Regional Climate Centers, the American Association of State Climatologists, the Climate Program Office, and NWS Climate Services Division, and are working with the USDA and DOI regional and local climate enterprises. They are also evaluating who is using their services, how they are being used and what value the climate data and products have to a large variety of users.

He also provided the following discussion points:

- Between June and November, the recommendation to create a Joint Action Group with a limited lifespan changed to a standing committee. What changed?
- How does this effort compare to/complement the WMO Global Framework for Climate Services and various GEO Workplan items that advance climate services?
- How does this effort complement USGCRP climate services activities?
- Is the goal "grass roots" participation or high level representation that can speak for Agencies?

Some of these points were discussed during the meeting but merit further consideration by the committee.

NOAA/Regional Climate Services (RCS)

Ellen Mecray presented NOAA's Regional Climate Services with emphasis on R2S and the interagency arena. She stated that there is a rising demand for climate information with regional perspectives.

NOAA is committed to bringing critical assets to a federal partnership including observation and monitoring, research and modeling, assessments, and information delivery and decision support.

NOAAs Research and Modeling is recognized as some of the best in the world today. NOAA is pushing its modeling efforts to improve resolution at the regional scaled.

Climate Observations and Monitoring are the foundation upon which climate science and services are developed. NOAA is responsible for over 90 observing and monitoring systems located throughout the world. NOAA also has experience working with international, national, state and local partners to develop and maintain these systems. Finally, NOAA is the agency mandated to be stewards of our climate record, and operates the National Climate Data Center where the quality and reliability of climate observations are ensured, and then made available to the public.

NCEI has long emphasized work with the six Regional Climate Centers, the American Association of State Climatologists, the Climate Program Office; and NWS Climate Services Division. Each of the Regional Climate Services Directors has strong ties to their respective regional cohort in these groups.

Ellen described regional partnerships with different sectors and their interaction with federal, state, regional and international partners.

NOAA is still considered the authoritative resource for regional-level data, predictions, and long-term assessments. RCSDs are the primary point of contact for some of this demand, coming from a broad base

of federal agencies, states, tribes, local governments, associations, private interests and NGOs. While climate and weather information are at the heart of these requests, customers are increasingly looking for cross-thematic environmental inputs that are authoritative, accurate, spatially and temporally refined, and available in near-real time.

The RCS program has guided and directed various NOAA programs with climate-related priorities and challenges at the regional level. RCSDs have also been the face of NOAA at regional-scales, taking leadership roles in federal and state meetings, and provided the coordinating role that was envisioned at the outset of the RCS program in 2010.

NOAA has a variety of regionally integrative programs and activities. Generally, these programs have been formed to support specific NOAA priority areas, including: nationwide resilience, decision support, water initiatives, multi-hazard planning, situational awareness, extreme event information delivery, and regionally-integrated environmental systems.

Ellen closed by describing the continuum of regional climate services, the tool delivery and refinement system and related resource/funding issues.

NOAA/Regional Climate Services

Beth Hall added her perspective of the Regional Climate Centers. These RCCs are under contract to NCEI and are not sector specific. They are located with universities or institutes and leverage funds from various sources to provide raw data or tools to regional users but are not limited to a specific region.

USDA/Climate Hubs

Rachel Steele presented the USDA briefing. USDA's mission is to develop and deliver science-based, region-specific information and technologies to agricultural and natural resource managers and to enable climate-informed decision-making with USDA partners (internal and external to USDA).

USDA's Regional Climate Hubs are providing information and tools to land managers to build resilience to climate variability. In February 2014, USDA announced the establishment of 10 Regional Climate Hubs in the US and Caribbean.

Their climate services efforts include existing climate services activities involving interagency coordination and monthly calls with other Climate Networks in NOAA, DOI, EPA to share information and ensure communication among agencies. They also sponsor regional Climate Services workshops and contribute to the Monthly Climate Outlook Monitor.

Future coordination involves working closely with climate network partners to carry out the National Drought Resilience Partnership goals; continue to leverage resources as a unit to build a responsive, agile network of climate services at the regional level; work closely with NIDIS and the National Drought Mitigation Center to continue to expand the Drought Monitor to the USVI; and develop decision support tools and user tutorials of drought tools geared for agricultural producers.

USDA's recommendations for moving climate services forward:

- Effectively tell the climate services story.
- Showcase coordinated work at the regional level.
- Be responsive to stakeholders to translate and "make sense" of the data and tools.
- Consolidate, collaborate, and communicate.

USGCRP

Fred Lipschulz presented a briefing highlighting how USGCRP is informing decisions (Prepare the Nation for Change) by providing the scientific basis to inform and enable timely decisions on climate adaptation and mitigation. USGCRP is a coordinating office and is comprised of representatives from 13 Federal Departments and Agencies plus the Executive Office of the President.

He described USGCRP Scenario Planning and recent USGCRP activities. Their resilience dialogs are an online service that provides customized, facilitated consultations to communities entering into climate vulnerability assessments and resilience and preparedness planning. These dialogs help to identify and refine key community questions, characterize local risks and impacts, identify best-available resources to inform planning strategies, and connect communities with an expanded network of resilience scientists & experts.

The USGCRP's Partnership for Resilience and Preparedness (PREP) enables collective action to manage climate risks.

USGCRP's Global Change Information System connects the information supporting climate reports for scientists, decision-makers and the public.

Fred closed by summarizing the USG co-production activities and interactions.

DISCUSSION

Due to time constraints, the members agreed to delay discussion of issues/concerns until the next meeting. Members will provide discussion topic for next meeting to OFCM by the end of January.

ELECT CHAIR(s) AND SET TERM LIMITS

The members elected Dr. Fiona Horsfall to be Committee Chair. Setting term limits and electing a Co-Chair were deferred until the next meeting.

REVIEW DRAFT TERMS OF REFERENCE (ToR)

Members will review draft ToR and provide comments/corrections to OFCM by the end of January. OFCM will update draft ToR and return to the committee for review and approval before next meeting. The members also recommended expanding agency membership.

NEXT MEETING

The Committee decided to schedule the next meeting for February or March

ADJOURN

The meeting adjourned at 12:00 P.M.