Department of Commerce · National Oceanic & Atmospheric Administration · National Weather Service

NATIONAL WEATHER SERVICE POLICY DIRECTIVE 10-10
NOVEMBER 18, 2009

Operations and Services

CLIMATE SERVICES

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OPR: W/OS4 (Paul Scholz) **Certified by:** W/OS (David Caldwell)
Type of Issuance: Routine

SUMMARY OF REVISIONS: This policy directive supersedes the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) policy directive 10-10, dated January 29, 2008. This policy directive update clarifies roles and responsibilities of all NWS offices involved in NOAA climate services, e.g. Office of Climate, Water, and Weather Services (OCWWS), National Center for Environmental Predictions (NCEP), NWS Regional Headquarters, Office of Science and Technology (OST), Office of Hydrologic Development (OHD), and other NWS offices.

1. The NWS Climate Services Program plays an important role in supporting and providing climate services that mitigate the loss of life and property and enhance the national economy. Recognizing that users and stakeholders often have difficulties distinguishing between weather and climate, the NWS Climate Services Program preserves the weather-climate linkage through the production and/or delivery of a seamless suite of climate information and products spanning multiple temporal and spatial scales (e.g., currently intra-seasonal to inter-annual). Applications of NWS climate data, products and services are essential to decisions made in sectors such as agriculture, insurance, energy, transportation, water resources, and health. The NWS Climate Services Program will work with partners to execute our mission.

2. The NWS Climate Services Program provides timely and reliable climate information, including observations and data stewardship, operational climate predictions, real-time climate monitoring and assessments, and decision-support resources at global, national, regional, state and local scales. Continual product and service improvements are supported through diagnostic research and modeling, training and education, and internal and external user engagement.

3. This directive establishes the following authorities and responsibilities:

3.1 The Office of Climate, Water, and Weather Services (OCWWS) is responsible for establishing and enforcing national policy and procedural directives, and providing oversight of

the NWS Climate Services Program and training. OCWWS is also responsible for outreach efforts to promote the NWS climate services program with national users and partners.

3.1.1 The Climate Services Division (CSD), within OCWWS, is responsible for oversight of the NWS Climate Services Program, maintaining the NWS Climate Services Program Plan, providing support and guidance to the NWS field offices, collecting and responding to user needs and product requirements for NWS climate operations (i.e., national centers, regional headquarters and local offices), providing stewardship of the climate data record by ensuring adherence to data quality and continuity procedures, development and execution of climate training programs, representing NWS in appropriate NOAA climate services, and supporting international NWS activities.

3.1.2 The Observing Services Division (OSD), within OCWWS, is responsible for providing policies and procedures including standards for observing and monitoring, and acquisition and dissemination of data in support of climate services (per guidance in NWS Instructions 10-13). Additionally, OSD establishes performance measures to monitor and track the policies, procedures and standards of observing system programs. This includes upper air, the COOP (Cooperative Observer Program), and ASOS (Automated Surface Observing System). The OSD works closely with the CSD to ensure NWS operational response to data stewardship requirements.

3.2 The Office of Science and Technology (OST) will provide oversight for evolving science and technology (S&T) development in climate prediction and application for the currently intra-seasonal to inter-annual time scales. OST will lead the S&T Infusion Climate Mission in coordination with OCWWS, NCEP, Regional Headquarters and strategic research partners to develop the NWS Climate S&T Infusion Plan and NWS Climate S&T Roadmap, insuring sustained research and development (R&D) support to the NWS Climate Services Program. OST will, through formal communication of field and user requirements provided by OCWWS, develop, demonstrate, and integrate scientific techniques and system capabilities for the Climate Services Program. OST will ensure research, development, and strategic planning, including budgeting needed for climate data continuity studies. As one of the primary offices (along with the Office of Operational Systems) responsible for developing and fielding new equipment, OST will have a role in the implementation of climate data continuity studies collaborating with OCWWS (per guidance in NWS Instruction 10-2101). OST will also ensure NWS climate needs are represented in their research and development plans, including the NWS Science and Technology Roadmap.

3.3 The Office of Operational Systems (OOS) will provide system engineering, hardware and software management and maintenance, facilities engineering services, communications, and logistics services for operational systems supporting the Climate Services Program. OOS will also ensure program management for observational networks that provide surface, air and marine observation data supporting the NWS Climate Services Program (e.g., ASOS, radiosondes, and buoys). OOS will budget for climate data continuity studies. As one of the primary offices (along with OST) responsible for developing and fielding new equipment, OOS will have a role in the implementation of climate data continuity studies collaborating with OCWWS (per guidance in NWS Instruction 10-2101).

3.4 National Center for Environmental Prediction (NCEP) will deliver science-based climate analyses, diagnostics, guidance, forecasts, and warnings to the Nation and the global community.

3.4.1 The Climate Prediction Center (CPC), within the National Centers for Environmental Prediction (NCEP), will provide NWS operational climate services consistent with the execution of the NWS Climate Services Program Plan and OCWWS policy directives. CPC will also develop and produce centralized numerical climate predictions, monitoring and outlook products, assessments, and discussions. CPC will coordinate with, report to, and include in any decisions involving NWS field operations the OCWWS/CSD, particularly on: (1) the identification and development of user requirements, (2) NCEP product requirements, verification, and performance, (3) any interactions with NWS regional and local offices, (4) the early stages of development and implementation of new products, and (5) climate training requirements to ensure consistency with NOAA and NWS training plans.

3.4.2 The Environmental Modeling Center (EMC), within NCEP, will carry out the operational climate forecast system (CFS) development, implementation and maintenance, including the execution of all necessary Reanalyses and Reforecasts to meet CPC's operational requirements. EMC will collaborate with research and development support from NOAA's internal and external partners. EMC will work closely with CPC to produce and verify the operational CFS products to meet climate service requirements. To accelerate CFS model and data assimilation improvements, EMC and CPC will work through the Climate Test Bed (CTB) to accelerate transitions from research to operations. EMC will provide "operations to research support" to augment CFS improvements from the research community. CPC will provide a subset of CFS data to the research community.

3.5 The Office of Hydrologic Development (OHD) and OCWWS will work together, as appropriate, in support of climate at it relates to water resources. OHD, together with the OCWWS Hydrologic Service Division and NWS local offices, provide hydrologic research, development and operational services ranging from flood warnings to water resources management, which are linked to climate variability and change. OHD also develops Federal standard climatologies of intense rainfall and data used as design criteria for civil engineering infrastructure in many federal, state and local governments. CSD and OHD will work together to enhance coordination of linkages between water- and climate-related activities such as providing climate context of hydrologic events, use of climate information in hydrologic predictions.

3.6 NWS Regional Headquarters offices are responsible for ensuring weather forecast offices (WFO), weather service offices (WSO), and river forecast centers (RFC) within their region are organized, trained, equipped, and available to fulfill the NWS climate services program obligations within their region. Regional Headquarters are responsible for ensuring WFO, WSO, and RFC compliance with established policies and procedures; coordinating with OCWWS on climate services; developing supplements to procedural directives and coordinating on them with OCWWS; ensuring supplements are compatible across regional boundaries; and evaluating performance and effectiveness indicators of the NWS climate services program within their region.

3.6.1 The Climate Services Program Managers (CSPMs) will manage the climate services activities at the Regional Headquarters and throughout their regions. CSPMs will provide support to the local offices for climate services by acting as the liaisons to OCWWS, which includes coordination and communication of their region's climate activities with OCWWS, ensuring local compliance to NWS climate services policies, and providing applied science, technologies, tools, communications, and training to support their local offices' climate services. They also initiate, coordinate, and nurture regional partnerships, and collect internal and external user requirements at the regional level.

3.7 A WFO, WSO, or RFC will be a steward for the integrity and continuity of the historical climate record in their areas of responsibility; participate in NWS climate analyses, monitoring and prediction activities, serve as the local NOAA user interface, including outreach and education, for climate information and services. The local offices will also develop partnerships to facilitate meeting the responsibilities above with the National Climatic Data Center, its Regional Climate Center(s), its State Climatologist(s), and, as appropriate, other entities providing climate-related services.

3.7.1 The Climate Service Focal Points (CSFPs), located at WFO, WSO, and RFC deliver climate products and services to users, including outlooks, advisories, forecasts, analyses, and observations. They also utilize training and outreach tools to respond to local user inquiries. They implement technologies and scientific strategies to deliver climate information, such as extending CPC analyses and predictions locally, ensuring integrity of observations and reporting of metadata, and fostering partnerships. They also serve as local experts for local, state, and regional decision makers.

3.7.2 Data Acquisition Program Managers (DAPM) and Observing Program Leaders (OPL) oversee the operations and maintenance of data collection for the climate record. The CSFP and the OPL or DAPM, with the support of the local office, under the supervision of the meteorologist in charge, maintain a close working relationship and coordinate on all issues related to climate data. They ensure climate observations and related metadata, data continuity, and data quality control activities are fully coordinated with partners and conform to NWS policy and needs. They routinely communicate with users, climate service partners, and the regional CSPM on issues related to ensuring the integrity of the climate record and user requirements.

4. The overall goal of this policy is to coordinate the provision of climate services across NWS and to improve the operational effectiveness of climate services to the Nation. There is an obvious requirement to coordinate with the other NOAA entities and programs, as well as cross-NOAA councils and efforts, and this policy does not attempt to identify each of those individually since it is an internal NWS policy.

5. This policy directive is supported by the references and glossary of terms listed in Attachment 1.

Signed by John L. Hayes November 4, 2009
John L. Hayes Date
Assistant Administrator for Weather Service

Attachment 1

REFERENCES, GLOSSARY OF TERMS, AND SUPPORTING INFORMATION

References

Instruction 10-1001 *Climate Outlooks*
Instruction 10-1002 *Climate Monitoring*
Instruction 10-1003 *Climate Data Services*
Instruction 10-1004 *Climate Records*
Instruction 10-1005 *Local Climate Outlooks*

Glossary of Terms

NWS Climate Services Program – including the Climate Services Division, regional Climate Services Program Managers (CSPMs), local Climate Services Focal Points (CSFPs), the Climate Prediction Center (CPC), and the Environmental Modeling Center (EMC) serve together as the NWS climate services infrastructure. These entities coordinate to enhance communication and exchange climate products and information across all NOAA Line Offices; maintain strong partnerships with other federal agencies, the university community, and the private sector; and participate in collaborative efforts with Regional Climate Centers (RCCs), Regional Integrated Science Assessments (RISA), State Climatologists, and the U.S. Climate Change Science Program (CCSP). The goal of the NWS Climate Services Program is to meet NWS users' climate needs through collaboration and partnerships, outreach and training, and the available NWS delivery infrastructure.

Climate – the average of weather over a period of time, usually at least 30 years. Note that the climate taken over different periods of time (30 years, 1000 years) may be different. The old saying is "climate is what we expect and weather is what we get".

Climate Information – is a set of climate variability and change resources including data, products, predictions, assessments, analyses, outreach and education materials, and tools to support decision making.

Supporting Information

NWS Climate Services Program Plan (2009) – under review

NWS Regional and Local Climate Service Delivery Operations Document, 2nd Edition – http://www.weather.gov/om/csd/info/ClimateServices/OperationsDocument_v2.pdf

Instruction 10-2101 *General Instructions for Terrestrial-Based In-Situ Instrument and Algorithm Intercomparisons for the Purpose of Climate Data Continuity*