

NATIONAL WEATHER SERVICE POLICY DIRECTIVE 10-10

JUNE 1, 2021

Operations and Services

CLIMATE SERVICES

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SUMMARY OF REVISIONS: This directive supersedes policy directive NWSPD 10-10, Climate Services, dated January 31, 2018. Changes made to update Section 1- add reference to OWP and OCLO; Section 2.4.1 - add description of the Climate Test Bed function; Section 3.4.2 - EMC wording, and formatting changes.

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-water-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 sub-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 works with partners to support their decision-making needs. 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. The Climate Services Program is closely tied to Drought Services.
(<https://www.nws.noaa.gov/directives/sym/pd01012curr.pdf>.)

2. This directive establishes the following authorities and responsibilities:
 - 2.1 The Analyze, Forecast, and Support Office (AFSO) is responsible for establishing and enforcing national policy and procedural directives, and providing oversight of the NWS Climate Services Program, associated training, and change management. AFSO is also responsible for outreach efforts to promote the NWS Climate Services Program with national users and partners.
 - 2.1.1 The Climate Services Branch (CSB) within AFSO 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, coordinating with OAR for NWS research and transition to operations needs, and supporting international NWS activities.

2.2 The Office of Observations (OBS) within the Office of Planning and Programming for Service Delivery (OPPSD) is responsible for providing policies, procedures, and standards for observing and monitoring and acquisition and dissemination of data in support of climate services (per guidance in NWS Instruction 10-13). Additionally, OBS establishes performance measures to monitor and track the policies, procedures, and standards of observing system programs. This includes upper air, the Cooperative Observer Program (COOP), and Automated Surface Observing System (ASOS). OBS works closely with the CSB to ensure NWS operational response to data stewardship requirements. OBS ensures NWS climate needs are represented in its research and development plans. OBS provides life-cycle support and management for observational systems and networks supporting the Climate Services Program. OBS conducts budget planning for climate data continuity studies for observational systems they directly support. As the primary office (in coordination with the Office of Science and Technology Integration (OSTI)) responsible for developing and fielding new equipment, OBS supports the implementation of climate data continuity studies, collaborating with AFSO (per guidance in NWS Instruction 10-2101).

2.3 The Office of Science, Technology and Integration (OSTI) within OPPSD oversees evolving science and technology (S&T) development and aligns scientific and technical approaches in climate prediction and application for improving capabilities needed to enhance prediction and services at the intra-seasonal to inter-annual time scales. OSTI leads coordination with AFSO, the National Centers for Environmental Prediction (NCEP), regional headquarters, and strategic research partners to integrate scientific techniques and system capabilities in developing solutions to address field and user requirements prioritized by the Mission Delivery Council (MDC), which lead to actual activities/funding projects to arrive at solutions for service delivery. OSTI coordinates and manages resources to ensure viable transition path and sustainable development. OSTI ensures research, development, and strategic planning; including budgeting needed for climate data continuity studies.

2.4 NCEP delivers science-based climate analyses, diagnostics, guidance, forecasts, and warnings to the Nation and the global community.

2.4.1 The Climate Prediction Center (CPC) within NCEP provides NWS operational climate services consistent with the execution of the NWS Climate Services Program Plan and NWS policy directives. CPC also develops and produces centralized numerical climate predictions, monitoring and outlook products, assessments, and discussions. The Climate Testbed (CTB) supports transition of research to operations (R2O) within CPC both through internal projects and in projects with external partners. The CTB facilitates collaboration between CPC and EMC on global model development for sub-seasonal to seasonal prediction and monitoring. CPC coordinates with CSB in decisions involving NWS field operations, products and services, particularly on: (1) the identification and development of user requirements, (2) NCEP product requirements, verification, and performance, (3) significant 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.

2.4.2 The Environmental Modeling Center (EMC) within NCEP carries out the operational climate modeling and monitoring systems development, implementation, and maintenance, including the execution of all necessary reanalyses and re-forecasts to meet CPC's operational requirements. EMC collaborates with research and development support from NOAA's internal and external partners. EMC works closely with CPC to produce and verify the operational products to meet service requirements for sub-seasonal to interannual predictions. To accelerate sub-seasonal and seasonal forecast systems and data assimilation improvements, EMC and CPC work through the NOAA Climate Test Bed (CTB) and the Unified Forecast System (UFS) community to transition research to operations. EMC provides operations to research in kind support to augment sub-seasonal to seasonal (S2S) forecast improvements from the research community. CPC and EMC provides selected subsets of reanalysis and real time analysis and forecast data to the research community.

2.5 The Office of Water Prediction (OWP) operationally supports and delivers science-based, integrated, consistent, timely, reliable and accurate water resources monitoring, prediction and diagnostic information. Together, OWP and AFSSO work to deliver a set of water resource-related decision support services for NWS core partners that facilitate decision-making associated with water supply planning and events ranging from flash floods to drought. OWP also develops Federal standards and estimates of climatologies regarding extreme precipitation frequency and characteristics. This information is used as design and analysis criteria for engineering infrastructure by federal, state, and local entities, and in decision support tools for comparative assessments against observed and forecast precipitation data, and as input for water resources modeling.

2.6 The Office of the Chief Learning Officer (OCLCO) provides professional and technical training to enable NWS employees to reach optimum performance in present assignments and future responsibilities. OCLCO works closely with CSB to set training policies, procedures, and priorities to ensure training requirements for Climate Services are met.

2.7 NWS Regional Headquarters offices are responsible for ensuring NWS Weather Forecast Offices (WFOs), Weather Service Offices (WSOs), and River Forecast Centers (RFCs) 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 AFSSO on climate services, including efforts to enhance collaborative processes throughout the NWS; developing supplements to procedural directives and coordinating on them with ASFO; ensuring supplements are compatible across regional boundaries; and, evaluating performance and effectiveness indicators of the NWS Climate Services Program within their region.

2.7.1 The Climate Services Program Managers (CSPMs) manage the climate services activities at the Regional Headquarters and throughout their regions. CSPMs provide support to the local offices for climate services by acting as the liaisons to CSB and CPC, which includes coordination and communication of their region's climate activities with AFSSO, 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.

2.8 Each WFO, WSO, or RFC serves as a steward for the integrity and continuity of the historical climate record in their areas of responsibility; participates in NWS climate analysis, monitoring and prediction activities; and serves as the local NOAA user interface, including outreach and education, for climate information and services. The local offices also develop collaboration to facilitate meeting the responsibilities above with the National Centers for Environmental Information, its Regional Climate Center(s), State Climatologist(s) and, as appropriate, other entities providing climate-related services in their area of responsibility.

2.8.1 The Climate Service Focal Points (CSFPs), located at WFOs, WSOs, and RFCs, deliver climate products and services to users, including outlooks, 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.

2.8.2 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.

3. 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.

4. This policy directive is supported by the references and glossary of terms listed in Appendix A.

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Louis W. Uccellini
Assistant Administrator for Weather Services

Date

Appendix A

REFERENCES, GLOSSARY OF TERMS, AND SUPPORTING INFORMATION

References

NWS Instruction 10-1001 [Climate Outlooks](#)
NWS Instruction 10-1002 [Climate Monitoring](#)
NWS Instruction 10-1003 [Climate Data Services](#)
NWS Instruction 10-1004 [Climate Records](#)
NWS Instruction 10-1005 [Local Climate Outlooks](#)

Glossary of Terms

NWS Climate Services Program – including the Climate Services Branch, 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, in particular, OAR’s Climate Program Office (CPO) and Weather Program Office (WPO); 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. Global Change Research Program (USGCRP). 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 – 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 Regional and Local Climate Service Delivery Operations Document, 3rd Edition – http://www.nws.noaa.gov/om/csd/graphics/content/about/OpsDoc_v3.pdf.

NWS Instruction 10-2101 [General Instructions for Terrestrial-Based In-Situ Instrument and Algorithm Intercomparisons for the Purpose of Climate Data Continuity](#).