WORLD METEOROLOGICAL ORGANIZATION

REGIONAL CLIMATE CENTRE WASHINGTON

The WMO Regional Climate Centre Washington (RCC Washington) is hosted and operated by the National Weather Services (NWS) Climate Prediction Center (CPC) of the United States National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Prediction (NCEP). RCC Washington also gets input from other NOAA Line Offices, including the National Center for Environmental Information (NCEI) and the Geophysical Fluid Dynamic Laboratory (GFDL).

RCC Washington provides climate products and services for WMO Region IV (North America, Central America and the Caribbean) with special emphasis on the Lesser Region IV, that is to say Mexico, Central America and the Caribbean.

Linkage with WMO Global Climate Centres

RCC Washington works closely with NCEP, which jointly coordinates the WMO Lead Centre for Seasonal Prediction Multi-Model Ensembles (LC-SPMME) with the Korea Meteorological Administration (KMA).

Linkage with WMO Regional Climate Outlook Fora

RCC Washington contributes to the Caribbean Climate Outlook Forum (CariCOF) and the Central American Climate Outlook Forum (CACOF).

Mandatory functions

All WMO RCCs fulfill a set of mandatory functions related to seasonal prediction, climate monitoring, data services and training. Listed below are those performed by RCC Washington.

Seasonal prediction – monthly and seasonal temperature and precipitation predictions from North American Multi-Model Ensemble Forecasts (NMME) and their statistically downscaled predictions are provided.

Prediction verifications based on different verification metrics, including the anomaly correlation, the Heidke Skill Score (HSS), the Relative Operating Characteristics and the Ranked Probability Skill Scores, are also made available.

OVERVIEW

Domain of responsibility: WMO Region IV (North America, Central America and the Caribbean)

Languages: English and some products, including climate bulletins, are available in Spanish.

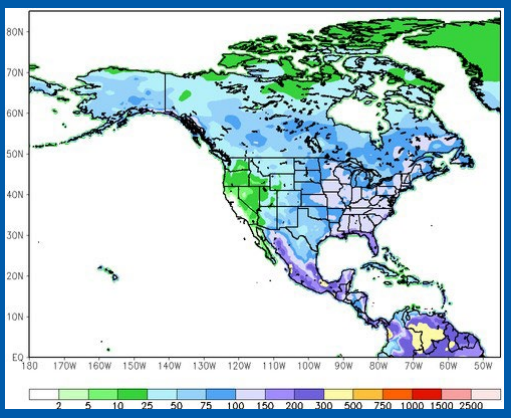
Status:

- Demonstration phase initiated: June 2019
- Designation by WMO: June 2020

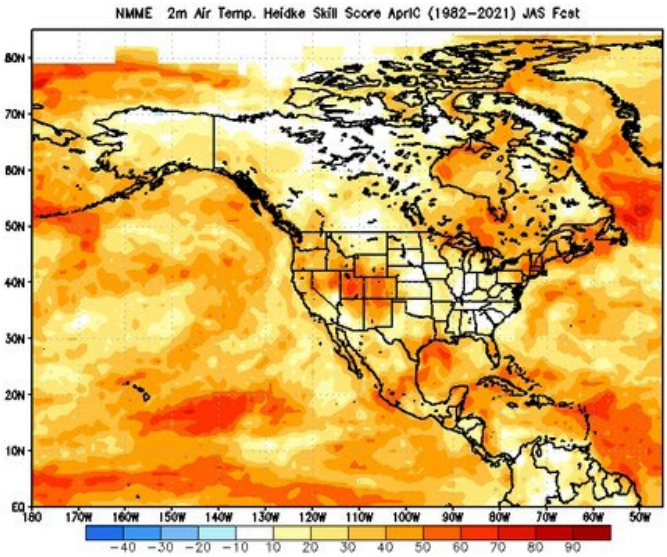
Climate features

WMO Region IV experiences diverse climates : from subarctic with very cold winters and mild summers in high latitudes to tropical with rainy and dry seasons where temperature show little variation from season to season in Central America and the Caribbean.

The major modes of climate variability are the El Niño Southern Oscillation (ENSO), the Atlantic Multi-Decadal Oscillation, the North Atlantic Oscillation, tropical systems (tropical storms and cyclones) and easterly waves.



July climatological precipitation (1981–2010)



HSS map for the NMME 2 metre air temperature prediction for the period from July to September with April as initial conditions (period 1982–2021)

Climate monitoring – monthly, and seasonal climate bulletins, maps of land and surface temperatures, precipitation and winds, maps of total number of rainy days as well as of maximum consecutive number of dry days, and weekly hazards outlooks for Central America and Hispaniola are provided.

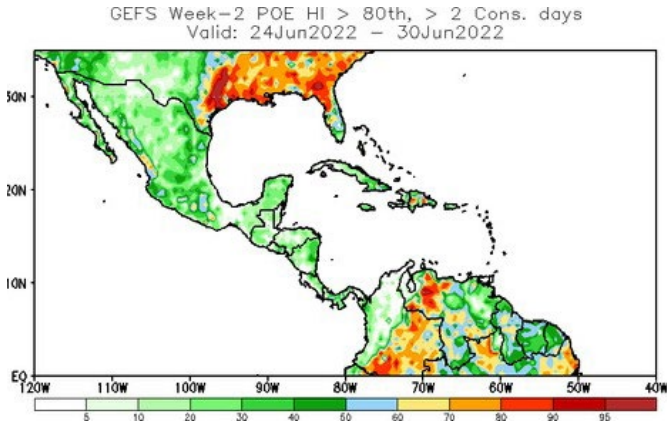
Data services – global datasets from different sources, such as gridded data, analysis, reanalysis, and forecast and hindcast model output, are provided.

Training – tutorials on useful software, such as the Grid Analysis and Display System (GrADS) and the Quantum Geographic Information System (QGIS), are publicly available. Every year, the RCC Washington conducts a capacity building training workshop on seasonal and sub-seasonal prediction and monitoring for the National Meteorological and Hydrological Services (NMHSs) in the region.

Recommended functions fulfilled

WMO RCCs are recommended to perform certain functions. Listed below are those performed by RCC Washington.

Climate prediction and climate projection – sub-seasonal predictions of temperature, precipitation, wind, precipitable water and heatwaves for the Lesser Region IV. Weekly hazards outlooks are issued for Central America and Hispaniola.



Week-2 heatwave prediction – Probability that the heat index exceeds the 80th percentile for at least 2 consecutive days

Non-operational data services – quality control of the Global Telecommunication System data to calibrate satellite rainfall estimates.

Research and development – development and validation of forecast regional outputs, the development of downscaling methods of temperature and precipitation forecasts, and the development of heatwave forecast tools.

Success story

Following the first WMO RCC Washington International Training Workshop, El Salvador successfully developed and implemented week-1 and week-2 sub-seasonal predictions in an operational setting.