NOAA provides a wide array of valuable products and services to the American public. MAPP ensures that funded research projects inform these products and services by developing and supporting the transition of research into applications of that research.

The MAPP Program shares responsibility for the NOAA Climate Test Bed (CTB) with the National Weather Service’s National Centers for Environmental Prediction. CTB projects transfer research into NOAA operational activities, enabling the external community to improve NOAA products. This partnership emphasizes testing and evaluating advances in modeling and prediction for operations.

MAPP supports the North American Multi-Model Ensemble (NMME), a seasonal prediction system that combines forecasts from the leading climate models. By producing more skillful and reliable seasonal predictions on average than other available prediction systems, the NMME bolsters NOAA’s mission of societal resilience.

MAPP partners with the National Integrated Drought Information System (NIDIS) Program to support research aimed at advancing understanding, monitoring, and prediction of droughts.

ENHANCING SOCIETAL CLIMATE RESILIENCE

NOAA supports research to improve products and services that enhance societal resilience to climate anomalies such as varying water resources and high-impact Earth system conditions. For example, the MAPP Program contributes to NOAA’s efforts to improve the monitoring, prediction, and understanding of drought as part of the National Drought Information System, as well as improve the understanding and prediction of heat extremes. Resilience directly depends upon our improved capability to model and predict aspects of the climate system.

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For more information, visit CPO.NOAA.GOV/MAPP

MAPP MISSION

The Modeling, Analysis, Predictions, and Projections (MAPP) Program’s mission is to enhance the Nation’s and NOAA’s capability to understand, predict, and project variability and long-term changes in Earth’s climate system. MAPP, a program within the NOAA Office of Atmospheric and Oceanic Research’s Climate Program Office, provides foundational support for improving understanding of the climate system, assessing climate impacts for decision-making, and improving NOAA products used in climate mitigation and adaptation efforts. To achieve its mission, the MAPP Program supports research, transition to applications and engagement activities focused on the coupling, integration, and application of Earth system models and analyses across NOAA, among partner agencies, and with the external research community. The MAPP Program plays a crucial role in enabling the nation to meet the societal challenges created by impacts of climate variability, such as year-to-year changes in the occurrence of extremes or droughts, and longer-term climate changes.

The MAPP Program aims to advance:

Climate and Earth system modeling to improve the simulation of climate variability

Predictions of future climate and Earth system variations from weeks to decades

Projections of long-term future climate conditions

MAPP is a competitive research program in the NOAA Climate Program Office (CPO)

cpo.noaa.gov
EXTENDING NOAA’S RESEARCH CAPABILITY

The MAPP Program is primarily a competitive funding program with annual calls for proposals and investigators’ task forces organized around major programmatic research thrusts. These core MAPP efforts enable NOAA to engage the external research community on high-priority research areas, extending NOAA’s internal research capability and sustaining scientific advancements in the broad community in coordination with other agencies and institutions through organizations such as USGCRP, WCRP, US CLIVAR, and IARPC.

MAPP’S MAJOR RESEARCH AREAS:
- Long-Term Climate Outlooks
- Drought and other Modeling Applications
- Subseasonal to Interannual Climate Prediction
- Climate and Earth System Model Development
- Data Assimilation and Reanalysis

The MAPP Program organizes investigators’ task forces to support its mission and programmatic research goals. The task forces include scientists funded by MAPP and provide a platform for funded researchers to coordinate and to translate research findings into advances in national and NOAA climate-related activities. MAPP currently has four task forces.

Drought Task Force
cpo.noaa.gov/mapp/df
The Drought Task Force (DTF) started its third phase in 2017. The DTF focuses on advancing the goals of the National Drought Information System (NIDIS) program by improving understanding of the causes of North American droughts, improving drought monitoring and prediction systems, and transitioning research to NOAA operations.

S2S Prediction Task Force
cpo.noaa.gov/mapp/s2stf
Initiated in 2016, the Subseasonal to Seasonal Prediction Task Force investigates ways to better model key sources of S2S predictability with the aim of improving predictions of climate anomalies and extremes such as heat waves at weeks 3-4 and beyond.

Model Diagnostics Task Force
cpo.noaa.gov/mapp/mdtf
Starting in 2015, the Model Diagnostics Task Force is helping to build a framework for model evaluation based on evaluation of processes in the models to serve NOAA and other modeling centers. The Task Force fosters community interest in moving beyond performance-oriented metrics for model evaluation and will contribute to ongoing model development efforts, evolving plans for CMIP, and a need to link model development and evaluation efforts across modeling centers.

Marine Prediction Task Force
cpo.noaa.gov/mapp/mptf
The Marine Prediction Task Force coordinates projects under the initiative “Research to explore seasonal prediction of coastal high water levels and changing living marine resources,” jointly supported by MAPP and the National Marine Fisheries Service (NMFS) Office of Science and Technology (S&T). The goal is to help U.S. coastal communities and economies anticipate the threat of climate-related hazards by developing NOAA’s capability to produce relevant seasonal marine predictions for regions along the U.S. coast. This initiative substantially contributes to the missions of both NOAA’s National Ocean Service and NMFS.

ENHANCING SCIENTIFIC INTERACTIONS

Coordination and communication are key to optimizing return on research investments as well as enhancing research outcomes and impacts. The MAPP Program leads an array of activities that enhance communication and coordination within the community of program-funded researchers and beyond. Over the past few years the MAPP Program has organized numerous scientific workshops. These complement the monthly MAPP webinars and MAPP task forces telecoms. MAPP also has a quarterly newsletter and a comprehensive webpage as community communication tools. To subscribe to the MAPP newsletter, visit: cpo.noaa.gov/mapp/newsletters

MAPP WEBINARS
cpo.noaa.gov/mapp/webinar
Since 2011, MAPP has hosted a monthly webinar series, which provides a public platform for MAPP-funded research and for presentations on MAPP relevant areas from the broader community. To date, the webinar series has attracted more than 3,500 attendees. Recordings and presentations are available on the webinar website and on YouTube at:bit.ly/MAPPyoutube.