

Climate Change & Global Environmental Issues

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There have been growing concerns about global environmental issues such as global warming, ozone layer depletion and acid rain as well as extreme weather events associated with climate change. These phenomena will have serious impacts on the socio-economic activities and natural environment in the world. To address these issues, JMA carries out various observations, monitoring and research, and provides outcomes of these activities for individual National Meteorological and Hydrological Services, relevant institutes and academic community of the world through international frameworks including WMO.

JMA is carrying out comprehensive monitoring of climate, including extreme events, based on the national observation network and the internationally exchanged data. Analytical results are presented in the publications including "Monthly Report on Climate System" and annual "Climate Change Monitoring Report." These reports describe climate, global atmospheric circulation and oceanographic conditions of the world and over Japan. In order to monitor and predict the El Nino phenomenon objectively, JMA operates the Ocean Data Assimilation System (ODAS) and the El Nino Prediction Model. Their outputs are issued monthly in "El Nino Monitoring and Outlook."

Recognizing the increasing importance of climate information for mitigating the impact of extreme weather events on economy and society, JMA established the Tokyo Climate Center in 2002 to support National Meteorological and Hydrological Services (NMHSs) in the Asia-Pacific region by providing climate-related information, including one-month prediction of NWP and a climate outlook.

JMA employs the climate model developed by the Meteorological Research Institute (MRI) to carry out numerical prediction of future climate change due to the increase of the global greenhouse gases concentration. Results of the prediction are annually published in the Global Warming Prediction Bulletin. JMA is intensively contributing to international collaboration to assess the future climate change, particularly through the activities of the Intergovernmental Panel on Climate Change (IPCC) in preparing the IPCC assessment reports since the establishment of the Panel.