

Seasonal Outlook for summer 2009 over Japan

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ABSTRACT

JMA issued the seasonal outlook for the summer (June-July-August) 2009 over Japan on February 25, 2009. The outline is as follows.

In recent decades, long-term upward trends are clear in the summer (June-July-August) mean temperatures nationwide. And also, the zonal mean tropospheric temperature calculated from thickness averaged over the mid-latitudes of the Northern Hemisphere (30-50°N), which has a positive correlation with surface temperatures in the same latitudinal belt, tends to be above normal from 1998.

Consistent with the recent climate trends, JMA's seasonal forecast model (2-tier AGCM) predicts that the temperatures in the lower troposphere of the NH mid-latitudes will be higher than normal on an average in summer 2009. This outlook is partly supported by the hindcast experiment results indicating the model's comparatively high forecast skill of the zonal mean state of the NH mid-latitudes.

On the other hand, the JMA's El Niño forecast model predicts that the NINO.3 Sea Surface Temperature (SST) anomaly will become closer to zero during spring (March-April-May), and turn to positive in the coming summer. Therefore, SST anomalies fed to the AGCM as the bottom boundary condition are positive in most of the tropics with more than +0.5°C in the central and eastern equatorial Pacific, which resembles the anomaly pattern of developing El Niño.

Consistent with the SST anomaly pattern, positive precipitation anomalies are predicted over the central and eastern tropical Pacific and negative precipitation anomalies are predicted over the most of Asian summer monsoon area including the western North Pacific. In association with negative precipitation anomalies near the Philippines, cyclonic circulation anomaly is predicted around Japan, which indicates the northward extension of North Pacific high may be less than normal.

However, prediction skill of convective activities near the Philippines is not sufficient and SST anomaly of the western Pacific has been positive in recent years. Therefore, convective activities near the Philippines are considered to be more active than the prediction and the strength of North Pacific high around Japan is expected to be near normal.

Taking factors stated above into consideration, summer mean temperature is expected to be above

normal with 50% probability in Western Japan and Okinawa/Amami, and both near normal and above normal with 40% probabilities in Eastern Japan. Summer and rainy season (Baiu) precipitation have no particular features for all regions.