

A Study of Drought over Taiwan Area before Baiu Season

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Abstract

The severe drought over central and southern Taiwan area from February to April 1977 is identified by deficient in rain days and precipitation. The rain day deficiency reached -50% in Feb. for central Taiwan and increased to -100% in March for southern Taiwan, and the precipitation deficiency ranged from -75% to -100% during this period for most of the central and southern part of Taiwan.

The initiation and maintenance of the drought are due to the persistence of warming sea surface temperature over the western Pacific high pressure region to an extreme development and westward expansion. The positive anomalies of pressure and height in Taiwan area and its vicinity suppress the development of a Taiwan low and also force the frontal system to high pass northward. The origin of the high pressure center moves westward which causes the track of high pressure to pass through the arid area of central China.

The strong subsident warming of the dominant high pressure system during the drought season maintains a stable layer at 700-500 mb which decreases the condensation and rainfall until the onset of Baiu season in mid-May.

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