North Equatorial Undercurrents (NEUC) were observed in the tropical western Pacific, which were obtained from the moored 75-kHz ADCPs from October 2007 to May 2009. Although there was a preliminary study on the formation mechanism of counter western boundary undercurrents below the thermocline (Wang and Hu, 1999), it was the first time to measure NEUC in the northwestern Pacific Ocean. The basic characteristics of NEUC is intra-seasonal, which persists from 2 to 4 months below the depth of 300 meters, probably with the maximum core below 500 meters, at the moored locations. Horizontal distributions of OSCAR surface currents (2005-2010) and mean zonal geostrophic velocity from the AVISO altimeter data are analyzed and compared each other. Ship-mounted ADCP currents for the upper 300 meters along the cruise track in June 2009 and along the similar (round-trip) cruise tracks in May to June 2010 were also collected and analyzed. The intra-seasonal variability of North Equatorial Current (NEC) and Subtropical Countercurrent (STCC) is discussed in terms of their strengths and vertical velocity-shear system as well as of their inter-relation with eddy activity.