Permafrost occupies a large area in high elevation zone in western China (more than 1 400 000 km²), and has great influences on local hydrological processes, ecosystems, and regional climate, even on global climate system. Changes of permafrost, such as the changes in permafrost temperatures, active layer thickness (ALT) have been documented in a great deal of literatures in the past several decades. Monitoring on permafrost in these regions started from 1960s, and a well organized monitoring network was established now. More than 100 ground temperature (GT) monitoring boreholes equipped with thermisters was set up in the permafrost regions in Western China. Most of them are distributed from Xidatan to Naqu along Qinghai-Xizang Highway and Railway with a range of more than 700 km in distance (31°59′—35°59′N, 91°58′—94°13′E). The others are located at Maxishan Mountain near Lanzhou (35°43′N, 103°59′E), and in western Kunlun Mountains (34°30′-36°0′N, 78°48′- 81°30′N), in Tianshan Mountains (43°06′—43° 13′ N, 86°49′—87° 07′ E), in conjunction region of Eastern Kunlun, Southern Qilian and Qinling Mountains (99°06′- 99°36′N, 35°12′ -35°42′), in Gaize region of Ali Plateau (32°16′ - 34°00′N. 84°00′ - 86°18′E). Parts of the monitoring sites have been selected as long-term monitoring sites of the Global Terrestrial Network-Permafrost (GTN-P), Circumpolar Active Layer Monitoring (CALM), and the National Snow and Ice Data Center. The monitoring data revealed that the permafrost was warming and the active layer thicknesses (ALTs) were thickening during the last decade, while the warming trends were more significant in lower ground temperature regions, but the thickening trends of ALTs were more significant in higher ground temperature zone. The changes of permafrost was mostly resulted by climate warming in the study regions.