We use monthly discharge and active layer data to examine the relationship between hydrological process and permafrost change for the two subbasins with less human activities in the Lena River in Siberia with permafrost region. The ratio of the maximum monthly discharge and minimum monthly discharge (Qmax/Qmin) has obviously decreased while the recession coefficient (RC) in winter has increased at the two branches, upper Lena and Aldan during 1936-2000. These result indicate that the hydrological parameters change has occurred in Lena river during 1936-2000. The basin active layer depth (AL) has decreased from 1940 to 1960 and increased from 1960-2000. There is no significant relationship between Qmax/Qmin, RC and AL in annual scale. However, the positive relationship between RC and AL and the negative relationship between Qmax/Qmin and AL gradually became significant from annual scale to 7-year scale using the 1, 3, 5 and 7-year moving average dataset. These results implied that both the Qmax/Qmin and RC change may related to the basin permafrost degradation. The Qmax/Qmin significantly decrease during 1942–1998 due to increase in base flow; this change is consistent in general with permafrost degradation over eastern Siberia. The permafrost degradation implied that the impermeable stratum of the permafrost disappeared and lead more water to infiltrate to groundwater and base flow increase. The permafrost degradation also lead to extend the infiltration area and enlarge the groundwater reservoir, enhance the reservoir regulation and increase the RC. The permafrost degradation result in flat hydrological region.