

## The Effects of North Sea Caspian Pattern Index on the Temperature and Precipitation Regime in the Aegean Region of Turkey

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**Abstract :** North Sea Caspian Pattern Index (NCP) refers to an atmospheric teleconnection between the North Sea and North Caspian at the 500 hPa geopotential height level. The aim of this study is to search for effects of NCP on annual and seasonal mean temperature and also annual and seasonal precipitation totals in the Aegean region of Turkey. The study contains the data that consist of 46 years obtained from nine meteorological stations. To determine the relationship between NCP and the climatic parameters, firstly the Pearson correlation coefficient method was utilized. According to the results of the analysis, most of the stations in the region have a high negative correlation NCPI in all seasons, especially in the winter season in terms of annual and seasonal mean temperature (statistically at significant at the 90% level). Besides, high negative correlation values between NCPI and precipitation totals are observed during the winter season at the most of stations. Furthermore, the NCPI values were divided into two group as NCPI(-) and NCPI(+), and then mean temperature and precipitation total values, which are grouped according to the NCP(-) and NCP(+) phases, were determined as annual and seasonal. During the NCPI(-), higher mean temperature values are observed in all of seasons, particularly in the winter season compared to the mean temperature values under effect of NCP(+). Similarly, during the NCPI(-) in winter season precipitation total values have higher than the precipitation total values under the effect of NCP(+); however, in other seasons there no substantial changes were observed between the precipitation total values. As a result of this study, significant proof is obtained with regards to the influences of NCP on the temperature and precipitation regime in the Aegean region of Turkey.

**Keywords :** Aegean region, NCPI, precipitation, temperature

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