Regions with water stress is a recurring and worldwide phenomenon, with spatial and temporal characteristics that vary significantly because of hydro climatic and river basin conditions. The entire Circum-Mediterranean region is characterized by overexploitation of water resources and results in streams without water. These intermitted streams can have long dry periods and the quality of remaining pools or disconnected flow sections are even more critical for ecological status in terms of the European Water Framework Directive. Point information at gauging stations are insufficient to describe the actual water availability across sub basins in dry periods. A method needs to characterize the actual spatio-temporal distribution of water under different flow conditions at sub basin scale, in terms of defined flow phases. A flow frequency analysis method has been tested in order to assist in the determination of ecological status of temporary streams within sub basins. In this study, next to observed time series, we used the regional hydrological model SIMGRO to generate the necessary river flows. The model is spatially-distributed and physically-based, simulating groundwater and surface water flow. We applied the model to the Evrotas basin in Greece. Examples of the analysis will be shown that aim at a better understanding of spatial variability of intermittent streams and their changes under human influences over the past century. The approach visualizes spatial-temporal variability of the different conditions in the river basin to assist in defining the ecological status. Such information is needed to set targets for sustainable use of the water resources.