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Remote sensing of temporary wetlands as boundary information for ecohydrological studies in the Cape Region, South Africa

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During the last decennia, many temporary wetlands in the Cape Region (South Africa) have disappeared or show a reduction in their hydroperiod, with important consequences for the structure and functioning of aquatic and terrestrial communities inhabiting these systems. These changes in hydrology and density of wetlands are mainly caused by land use changes, an increased use of groundwater and may also be influenced by climatic change. Using LANDSAT imagery of the previous decennia, a time series is built of wetlands. Analyses of classified images is used to determine the extent and the distance between wetlands. Changes in these variables may have a significant impact on the ecohydrology of the wetlands as it will influence the diversity pattern, species composition and distribution of aquatic organisms and riparian vegetation. The information obtained through remote sensing is also used to validate and improve a hydrological model that will study the hydrological fluctuations that occurred during the last decades.