



## **Holocene lacustrine sedimentation in the Edeyen of Murzuq (SW Libya)**

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The Edeyen of Murzuq (SW Libya) is one of the largest dunefield of the Central Sahara and its present climate is hyper-arid. Holocene carbonatic lake deposits have been located into its interdune corridors; they are witness of wide lakes and marshes, which existed in the Early and the Middle Holocene. The lakes were originated by the rise of the local water table, fed by seasonal rainfalls; therefore their oscillations are directly linked to the expansion and withdrawal of the SW African Monsoon over the central Sahara. On the base of extensive field survey, several Radiocarbon dates and isotopic (C and O), sedimentological and malacological analyses, two different Holocene lacustrine cycles were identified. The older lake high stand occurred between 9500 and 8000 uncal. years BP; after a phase of desiccation, one more rise of the lake levels took place between 7500 and 5000 uncal. years BP. Sediment analyses indicate that during the first high stand permanent water bodies, from 5 up to 30 metres deep, with high autogenic CaCO<sub>3</sub> precipitation, existed, while the Middle Holocene high stand was characterized by a lower CaCO<sub>3</sub> production and seasonal oscillations in lakes level. The onset of severe arid conditions occurred at 5000 years BP; the lakes levels suddenly dropped and the area dried out: after that event only a few short wet periods are recorded. Water bodies attracted for a long period communities of hunter-gatherers and shepherds living in the region, whose archaeological remains are strictly connected to lake landforms and sediments