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Dunes as terrestrial archives for Late Quaternary climate and landscape reconstruction in the Murray Basin, South Australia

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The Mallee in the semi-arid Murray Basin (South Australia) is made up of today well vegetated and stabilised palaeodunes. They give evidence of more arid conditions in the past, allowing dune construction under sparser vegetation cover than present today. By optically dating these dunes, the environmental changes over the last 250.000 yr in the Murray Basin can be reconstructed. The main features of interest are first, the timing of the onset of dune formation and second, whether multiple phases of aridity are represented in the dune record, or whether dune development was continuous. Of further interest is the formation of two different dune types within the study area. The northern part of the dunefield is dominated by linear dunes whereas in the southern part, sub-parabolic forms are prevalent. Dating and sedimentological studies on these different dune systems will provide vital first clues in mechanisms and conditions of their formation.