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**A Flood-Events Matrix for Dryland Fluvial and Lacustrine Delta and Terminal Splay Sedimentation in Lake Eyre, Central Australia**

Key field observations derived from the detailed coring and mapping of large, flood-prone but typically ephemeral inland rivers of the Lake Eyre basin, Central Australia, have resulted in the compilation of a flood-events matrix for dryland fluvial and lacustrine sedimentation.

The rivers terminating into Lake Eyre are subject to highly variable and unrelated discharge events as a result of extensive and spatially dispersed catchments. The intrinsic disconnect between individual river catchment flood cycles and the rare Lake Eyre gross-fill episodes (a few times per century) results in a range of flood-event deposits within the architecture of sandy deltaic and terminal splay successions which are conceptually illustrated on the flood-events matrix.

The terminal splay complexes express some degree of variation in the overall architectural element suites and flood event behavior depending on individual controlling parameters, though most have underlying morphological similarities (fining-up cycles of coarse to very-fine sand generally less than 2m thick). The distributary complexes are generally highly constructive lobate terminal splays, with a broad middle-ground bar complex incised by deeper distributary channels. During rare high-lake, high fluvial flood flow event, thin deltaic mouthbars are developed (fining-up or coarsening-up cycles of medium to very-fine sand generally less than 1m thick). Dessication and aeolian redistribution of sediment during arid periods is also a significant morphologic control on preservation of the terminal splay and delta front complexes.