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**Wet-Dry, Terminal Fan-Dominated Depositional Sequences on the Lake Plain: A Case Study in the Lower Green River Formation of Southern Uinta Basin**

The architecture of clastic, terminal fan-dominated depositional sequences accumulating on the lake plain is related to wet-dry cycles that induce lake level oscillations. During dry stages, lake level drops, exposing an extensive lake plain. Throughout the dry stage, no deposition occurs on the lake plain, due to lack of discharge.

As the subsequent wet cycle begins, increasing precipitations generate stronger and stronger floods on the lake plain, and the terminal fan system advances towards the lake. Ample accommodation leads to accumulation of a thick clastic interval that records terminal fan progradation. Vertically, thin sheet sands of the distal terminal fan thicken upwards, and eventually become overlain by the more channelized facies of the medial and proximal fan. The fans do not reach the lake, but water table discharge contributes to lake level rise. As the lake level rises, the terminal fan equilibrium profile steepens, and accommodation is reduced. Large channels are incised in the terminal fan deposits.

After the wet episode reaches its peak, precipitation volume decreases. Diminishing discharge leads to weaker and weaker floods and the terminal fan system starts to backstep. With continuing lake level rise (albeit at a reduced rate), and an ever-steepening terminal fan equilibrium profile, the only accommodation is in the deep terminal fan channels. This interval is thus characterized by protracted non-deposition in the terminal fan interfluves and backfilling of the terminal fan channels by juxtaposed bars that become thinner and thinner towards the channel top.