

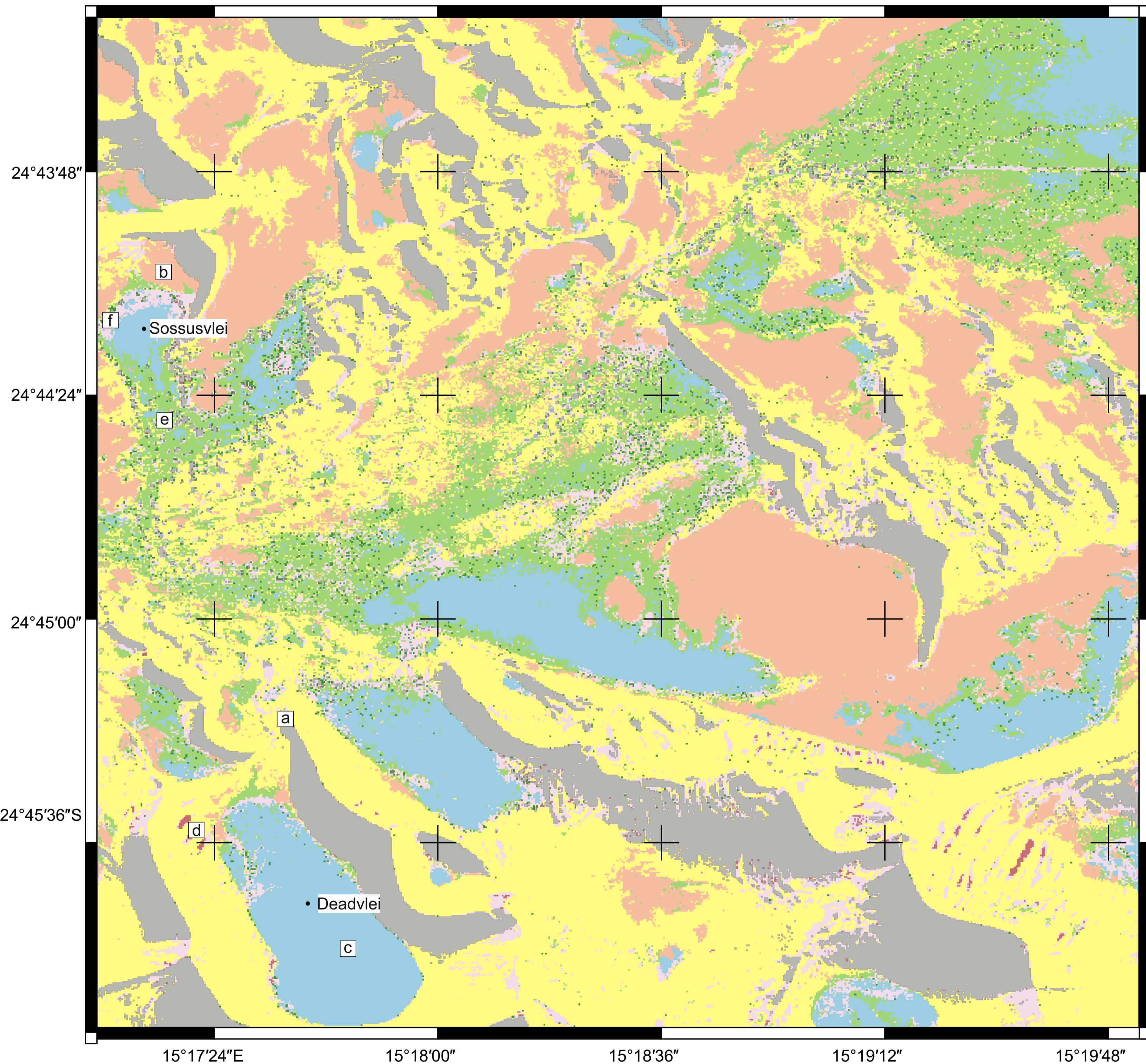
Facies Distribution Map of Sossusvlei (Middle of Namib Desert, Namibia)

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Legend

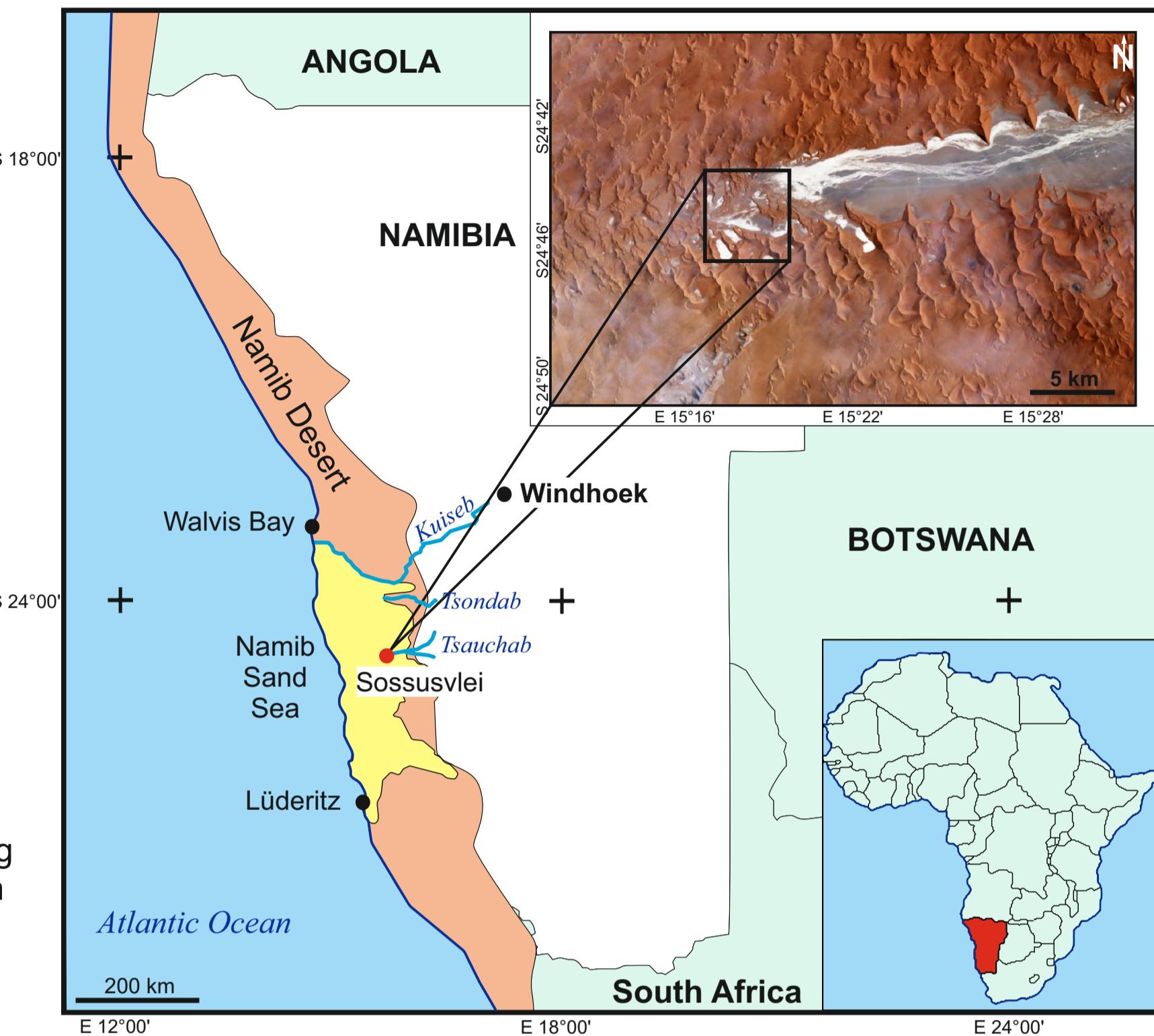
- [Yellow] Modern aeolian sand
- [Orange] Deflation surface
- [Blue] Mud pool/mud drape
- [Red] Heavy mineral lag
- [Green] Fluvial aeolian reworked

- [Light purple] Fossil dune remnant
- [Dark green] Vegetation
- [Grey] Shadow

250 500 1000
metres

Coordinate System: WGS84
UTM zone: 33S
Facies distribution based on supervised classification of Worldview 3 satellite data.
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This map shows the facies distribution pattern of fluvially influenced aeolian sediments. The Sossusvlei playa-lake at the eastern flank of the Namib Sand Sea (central Namibia), provides an excellent example of sedimentological processes associated with an ephemeral river repeatedly entering a dune field, becoming dammed by it and finally terminating in a flat interdune playa called 'vlei'. The spectrum of aeolian and fluvial processes generates a complex interplay of sedimentary facies, which make a facies map a prerequisite to better understand the mutual relationships and distribution pattern of the sediments. The map was created on the basis of a World View 3 satellite image, using a supervised classification algorithm trained by field observations, a combination of Principal Component Analysis, band ratios, texture and geomorphologic indices. The following facies were distinguished: modern aeolian sand, bypass surface, mud pool/mud drape, heavy mineral lag, fluvial aeolian reworked and fossil dune remnant.



Sedimentological facies in the field: the scale is 20 cm

- a** Modern aeolian sand: Dunes; interdune sheet sands; downwind elongated coppice dunes.
- b** Deflation surface: Interdune wind corridors and windward inclined sand ramps and deflation plain.
- c** Mud pools/mud drape: Terminal lake (vlei) deposits in interdune lows; flood plains.
- d** Heavy mineral lag: Heavy mineral assemblage on windward dune and coppice dune flanks.
- e** Fluvial aeolian reworked: Aeolian reworked mud chips and curls in elongated channel depressions; aeolian accumulation in interdune wind corridors and at windward dune bases.
- f** Fossil dune remnant: Semi-lithified dunes, preferentially in marginal