SOUTH-WEST EGYPT 1 : 1000 000

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ECOLOGICAL MAPS OF THE WESTERN DESERT OF EGYPT

Soil Association Map

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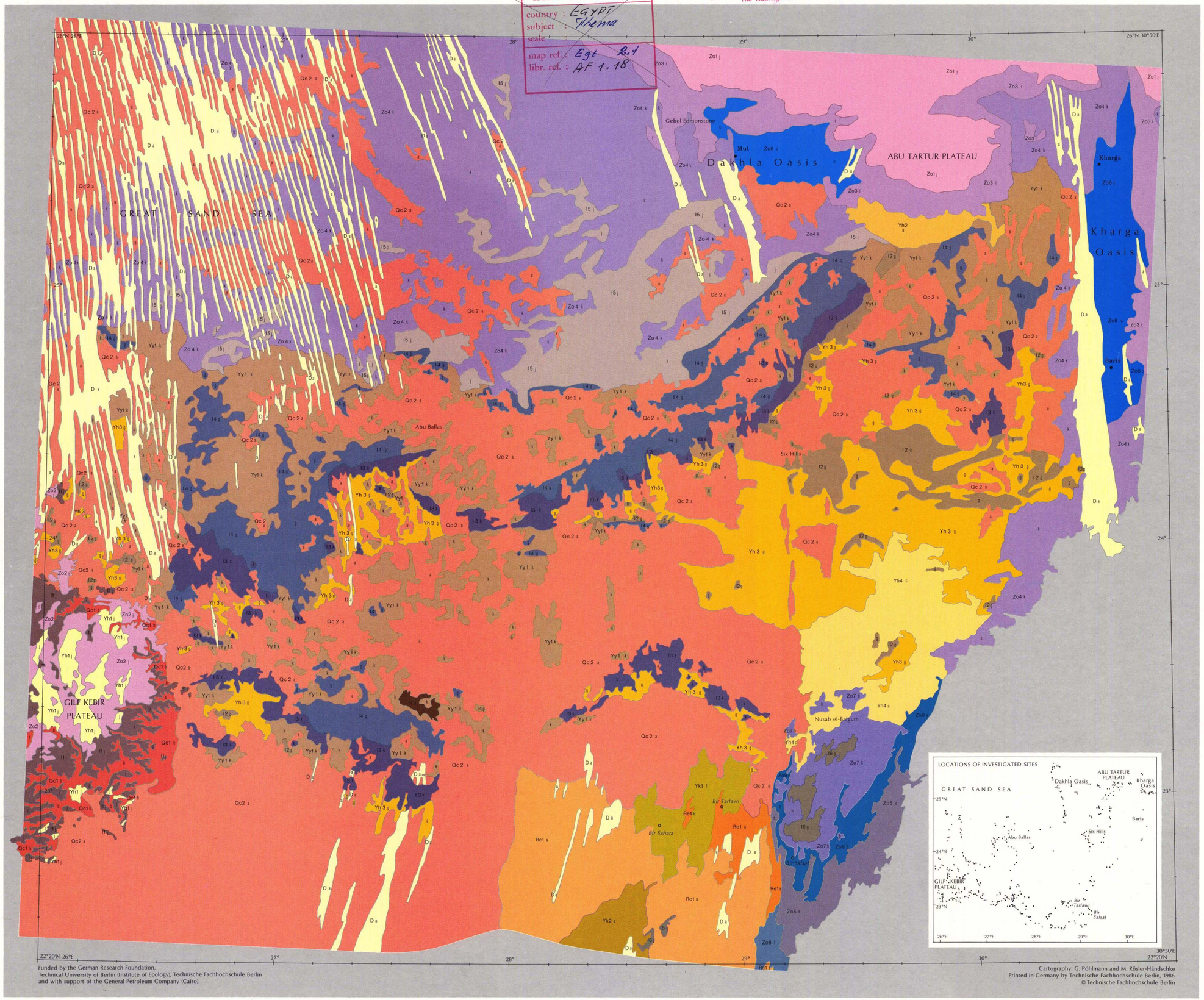

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SOIL ASSOCIATIONS

OASIS LANDSCAPES
Playa-, fluvial- and eolian sediments with sandy to clayey soils

- Zo6 — Zo, Vc, Ge on playas and fluvial deposits; Zg in depressions around the oasis; Qc, Re, Rc on elevated areas with eolian sand;

ERGS
Dunes and sand ridges with sandy soils

- D — Dunes, Re and Qc from eolian sand;

PLAINS OF SAND SHEETS
Fluvial- and eolian sand with sandy soils

- Qc2 — Qc, Re from eolian sand; Yh in shallow depressions and between sand ridges; I on outcrops;
- Rc1 — Rc, Qc, Re from eolian sand; Yk, Yh between sand ridges; I on outcrops;
- Yk1 — Yk on level ground; Zo in shallow depressions;
- Re1 — Re from eolian sand; Zo between sand ridges;
- Yk2 — Yk on level ground; Re on sand ridges; I on outcrops;
- Zo5 — Zo on level ground; Re on sand ridges;
- Zo8 — Zo on level ground; Yk on elevated areas; Re on sand ridges;
- Zo9 — Zo on level ground; Re on sand mounds; Zg in small depressions under vegetation;
- Yh4 — Yh, Zo on all relief positions; Yk in some shallow depressions; I on outcrops;

LIMESTONE PLATEAU WITH ESCARPMENT AND WADIS
Limestones on plateau. Fluvial-, playa sediments and debris in wadis. Soils are loamy to clayey.

- Zo1 — on plateau: Zo on level ground and in shallow depressions; I on outcrops and strongly eroded areas;
- Zo3 — in wadis: Zo, Je, Jc from fluvial sediments; Vc, Yt, Zt on playas; Re, Rc on sand ridges; I on slopes;

SANDSTONE PLATEAU WITH ESCARPMENT AND WADIS
Sandstones, shales, quartzitic sandstones and basalt on the plateau with loamy soils. Fluvial-, eolian-, playa sediments and debris in wadis with sandy to clayey loam soils

- I1 — on the plateau: I on slopes; Zo on level ground; Yh in shallow depressions; Yk on basalt mounds;
- Zo2 — on the plateau: Zo on level ground; I on mounds; Yh in shallow depressions; Yk on basalt mounds;
- Yh1 — on the plateau: Yh, Zo in large, shallow depressions; I on mounds and outcrops; Qc from sand sheets;
- Qc1 — in the wadis: Qc, Yh from fluvial sand and debris; Re, Je from fluvial sand; Yt, Zo from playa sediments;

HILLY LANDSCAPES
Hills and mounds from Mesozoic sandstones, shales, basalt and quartzitic sandstones with loamy to sandy loam soils. Between hills and mounds: debris, eolian-, fluvial- and playa sediments with sandy to clayey soils

- Yh2 — on Desert Rose Formations: Yh from fluvial sand and debris; I on slopes; Yt from fluvial deposits;
- I5 — on Plant Bed Formations: I on slopes; Zo from debris; Qc from fluvial- and eolian sand;
- I4 — on Desert Rose Formations: I on slopes; Yy from debris and fluvial sediments; Zo on plateaus; Qc from eolian sand;
- I3 — on Lingula Shale: I on slopes and level ground; Zo from debris; Vc on playas; Yh from fluvial sand;
- I2 — on Lower Clastic Formations: I on slopes; Yh from debris; Qc from eolian- and fluvial sand;
- I7 — I on basalt hills; Vc on playas; Yh from fluvial sediments;

PLAINS ON MESOZOIC FORMATIONS AND BASEMENTS
Mesozoic sandstones , shales and granite with loamy to sandy loam soils

- Yh3 — Yh on Lower Clastic Formations; I as well on quartzitic sandstones;
- Yy1 — Yy on Desert Rose Formations; I, Zo on elevated areas;
- Zo4 — Zo on Variegated Shales and Dakhla Formations; I on strongly eroded areas;
- Zo7 — Zo and Yk on Lower Clastic Formations and granite;
- I6 — I on granite and/or Selima Formations; Zo in shallow depressions.

Soil associations were identified in the field (725 profiles) during 5 expeditions carried out from 1981 to 1985.

Map units are based on:

1) Satellite imagery of LANDSAT 1, provided by EROS Data Center, Sioux Falls, USA:
Archiv No. 810113-08132, 81165-08014, 81113-08135, 81201-08022, 81131-08141, 81201-08025, 81112-08074, 81110-07561, 81112-08080, 81110-07563, 81112-08083, 81110-07570.

2) Geological Interpretation Map of Egypt, 1 : 500 000, preliminary edition (E. Klitzsch and F. K. List, Berlin 1980):
Sheets No. 2521 Gebel Uweinat, 2821 Selima, 2523 Gilf Kebir, 2823 Baris, 2525 Ammonite Hills, 2825 El Kharga.

3) Topographical information from Working Sheets, 1 : 250 000 (Berlin 1984):
Sheets No. NG 35-F, NG 35-B, NG 35-G, NG 35-C, NG 35-H, NG 35-D, NG 36-E, NG 36-A; NF 35-N, NF 35-J, NF 35-O, NF 35-K, NF 35-P, NF 35-L, NF 36-M, NF 36-I.

PHASES* OF DOMINANT SOIL TYPES

Dominant soil = first underlined soil type of the soil association

- a = having no phases
- b = sporadically stony
- c = saline
- d = petric and saline
- e = sporadically petrosaline and sporadically phreatic
- f = stony, petric and saline
- g = lithic, stony and petric
- h = stony, gypsic and saline
- i = stony, petric, gypsic and saline
- j = lithic, stony, petric and saline
- k = lithic, stony, petric, gypsic and saline

SOIL TYPES*

- I = Lithosols
- Vc = chromic Vertisols
- Jc = calcaric Fluvisols
- Je = eutric Fluvisols
- Zg = gleyic Solonchaks
- Zt = takyric Solonchaks
- Zo = orthic Solonchaks
- Ge = eutric Gleysols
- Qc = cambic Arenosols
- Rc = calcaric Regosols
- Re = eutric Regosols
- Yt = takyric Yermosols
- Yy = gypsic Yermosols
- Yk = calcic Yermosols
- Yh = haplic Yermosols

*According to FAO Soil Classification Key (1974) and Alaily und Blume (1983: Mitteilgn. Dtsch. Bodenkundl. Gesellsch., 38, Göttingen)