Landforms and landscape system

- Foreshore plain: ridges, lagoons and salt marshes
- Frontal plain: limestone outcrops and clay deposits
- Sandy zone: sand formations — sheets, dunes and hummocks
- Beaches west of Abu Qir: crescentic bar systems
- Parallel bar system along the Nile Delta

Change over time

- Since the building of the Aswan High Dam in 1964 there has been an imbalance between erosion and accretion
- Sediment accreted has reduced from 120 million tonnes/year to trace amounts
- There has been an increase in erosion to the shoreline NW of the Nile Delta
- Coastal retreat rates of 148 m/year
- Rising sea levels in the Mediterranean of 1.2 mm/year have also led to higher rates of erosion

The Nile Delta

- The Nile Delta starts approximately 20 km north of Cairo
- It extends for approximately 150 km
- There is a suspended sediment load of 30% clay, 40% silt and 30% sand
- Average annual sediment yield is 4.26 t/ha/yr.

Physical factors of influence

- Prevailing NW winds lead to eastward movement of sediment
- Surface current velocity ranges from 8.4 cm/s to 23.14 cm/s
- Waves approach from the W/NW/N 60% of the time

The Nile Delta map

- Alexandria
- Port Said
- Damietta
- Rosetta
- Edku
- Manzala
- El Arish
- Alexandria Port Saïd
- Cairo
- Abu Qir Bay
- Mediterranean

Winter

- Summer
- Spring

Map scale: 1 cm = 200 m

My Revision Notes: OCR AS/A-level Geography

Chapter 1: Landscape systems

Option A: Coastal landscapes

Case study: The Nile Delta
My Revision Notes: OCR AS/A-level Geography
Chapter 1: Landscape systems
Option B: Glaciated landscapes
Case study: Snowdonia
My Revision Notes: OCR AS/A-level Geography
Chapter 1: Landscape systems
Option B: Glaciated landscapes
Case study: Minnesota

Minnesota is the result of glacial activity in the Quaternary period. The main ice sheet was the Laurentide ice sheet, Hudson Bay.

Physical factors of influence
Geology
- Part of the Canadian Shield
- Volcanic and sedimentary rocks lie in belts
- There are gneiss (metamorphic) rock outcrops along the Minnesota River Valley
Glaciation
- Lobes of ice transported and deposited till across Minnesota

Landforms and landscape system
- The Laurentide ice sheet had a massive erosional impact
- Mountain peaks were reduced to between 500m and 700m
- An ellipsoidal basin was created, now containing lakes such as the Red Lakes in Minnesota
- Striations are evident on bare rock
- Red, sandy till has been deposited south of Minneapolis
- The Wadena Lobe deposited Alexandria moraine and drumlin fields — Otter Tail and Todd counties
- There is ground and terminal moraine from St Cloud into the Twin Cities

Change over time
- The present landscape is the result of glacial activity from 2 million years ago to the present day
- There has been advance and retreat over several successive periods
- During colder periods the Laurentide ice sheet extended across the upper Midwest
The Namib Desert is on the west coast of southern Africa extending for approximately 81,000 km². It crosses the Tropic of Capricorn and is approximately 2,000 km north–south.

**Physical factors of influence**
- Minimal weathering due to temperature range of 11°C–24°C and 23 mm rainfall
- Because of the aridity, fluvial processes contribute little to landscape development
- Aeolian action is the dominant geomorphic process
- South-easterly trade winds blow throughout the year

**Landforms and landscape system**
- Very high dunes in the Sossusvlei region, up to 300 m high
- Extensive dunes Orange River to Walvis Bay
- Barchans and compound dunes are widespread
- Yardangs near the mouth of the Orange River
- Wind abrasion erodes depressions and leaves resistant rocks as ridges
- Central and northern Namibia is rocky desert with inselbergs, e.g. Spitzkoppe

**Change over time**
- Aridity started as much as 5 million years ago
- Contemporary landscape has evolved slowly
- Pediments and inselbergs developed over millions of years when the climate was less arid
- Recent slope failures are evident
- Tafoni have formed on granite inselbergs
- Sand creep and saltation are evident from much more recent times
- Dunes are advancing, averaging 30 m/year