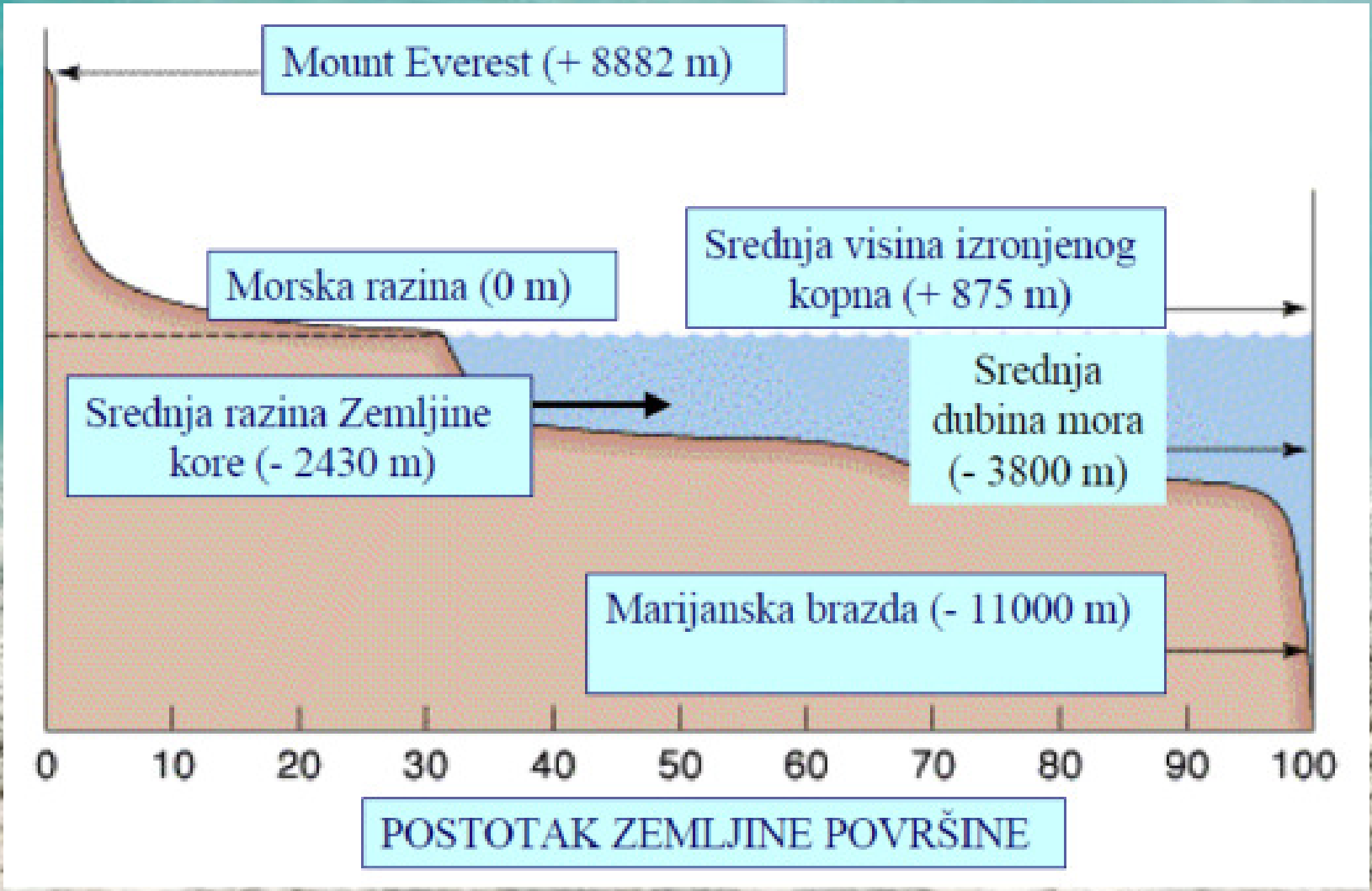
Morsko dno

Meteorologija i oceanografija 3.N

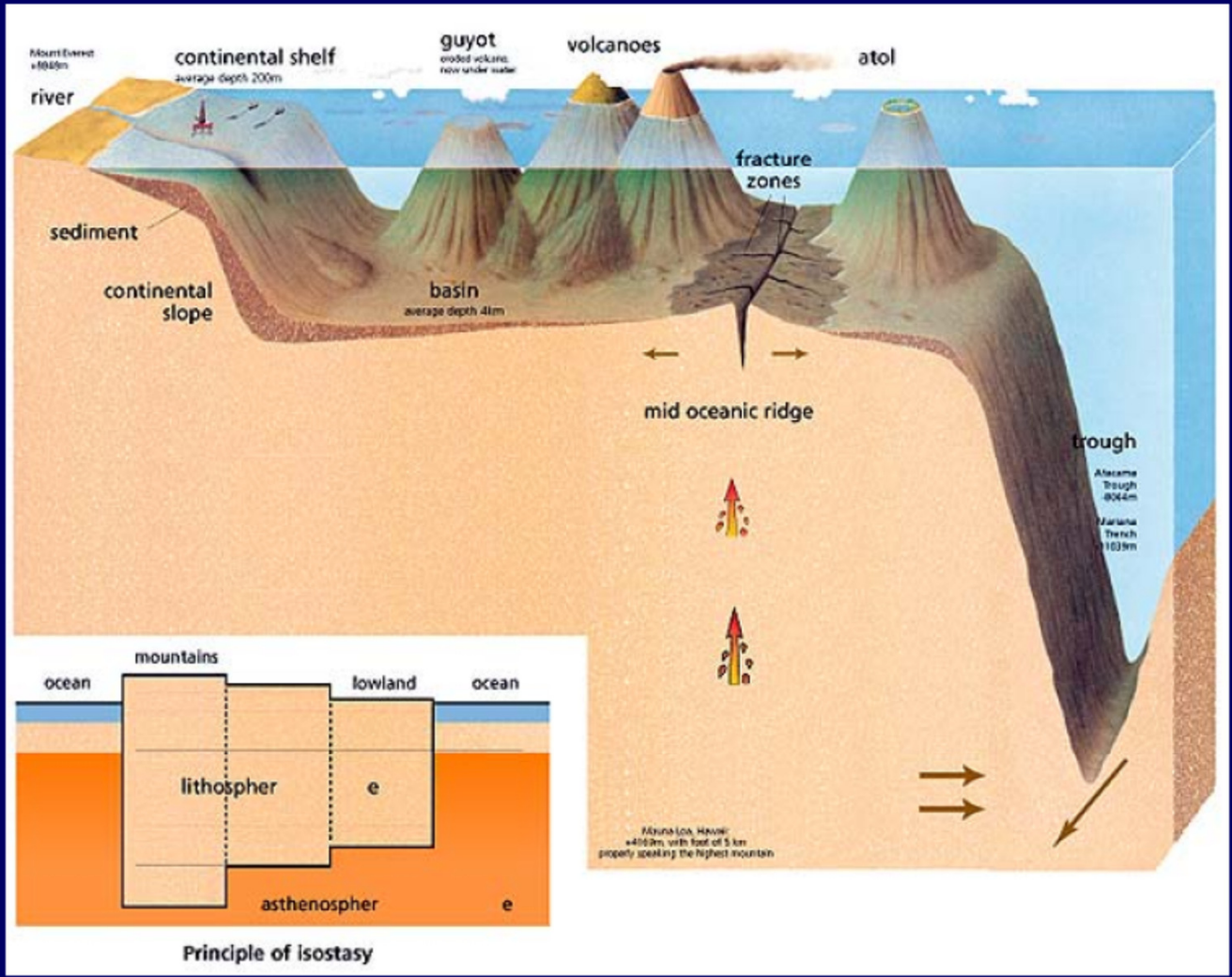
Po prezentaciji M.Šolića:

Ekologija mora – pregled morskih staništa

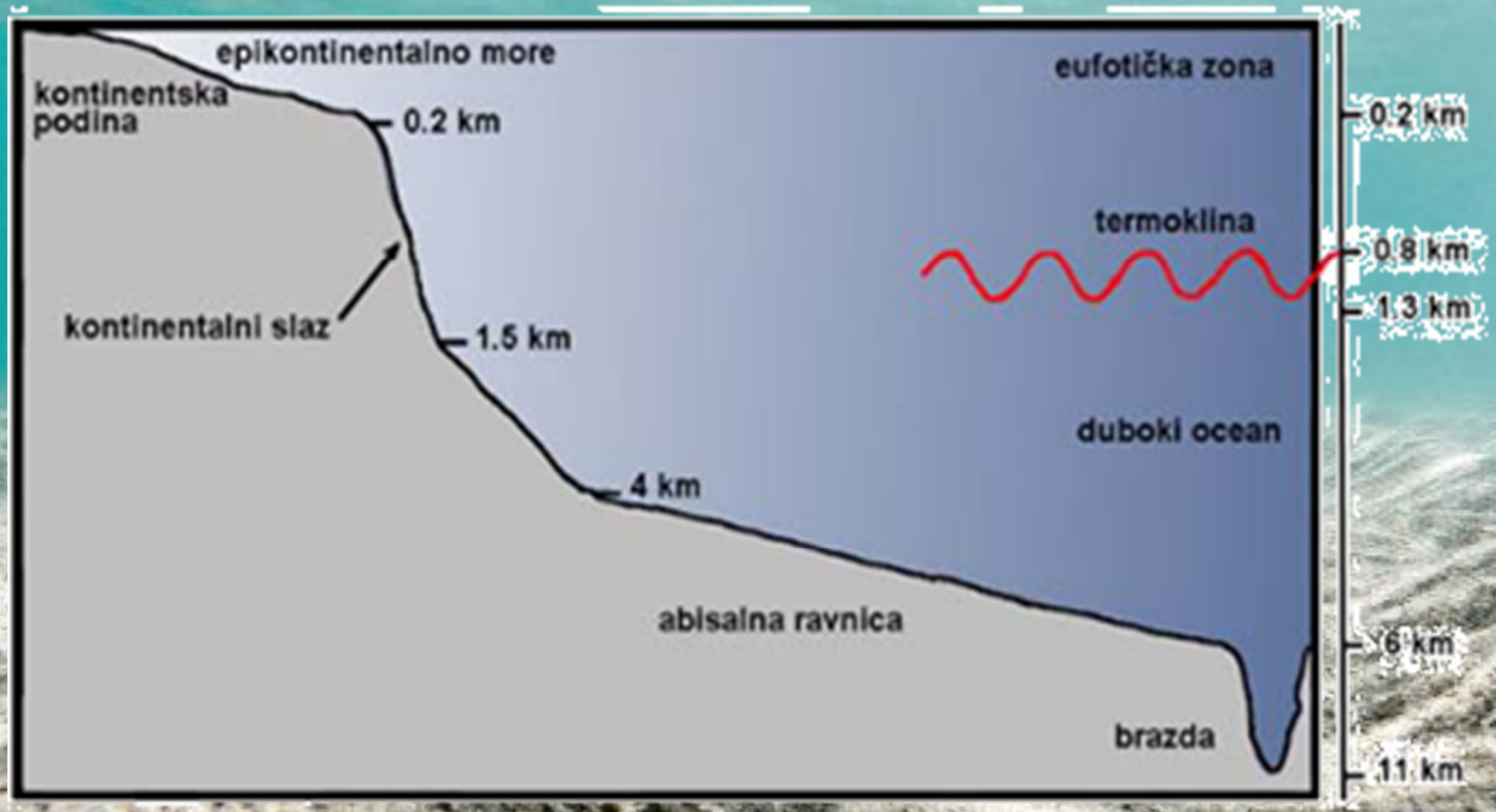
Hipsografska krivulja

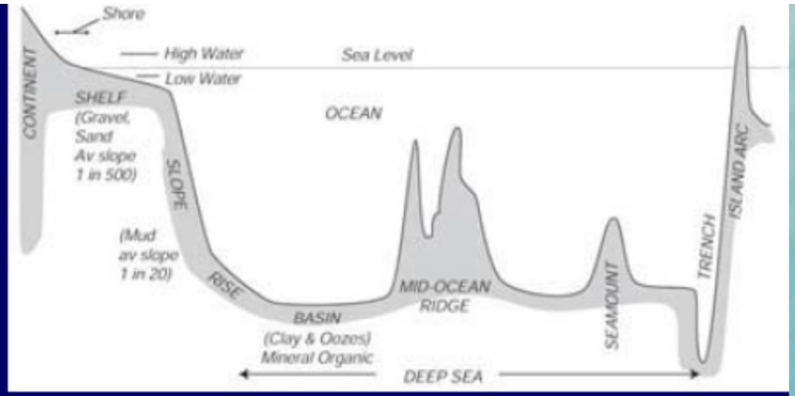


M. Šolić: Ekologija mora



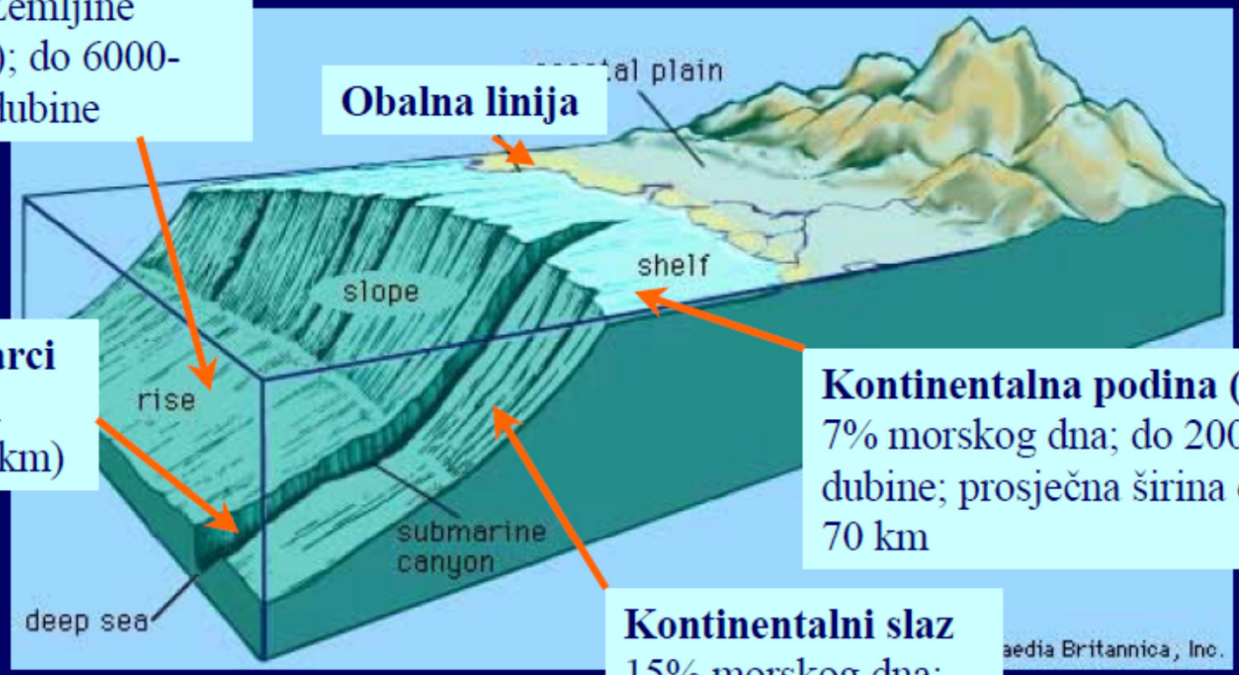
Reljef morskog dna





Abisalna ravnica
78% morskog dna (2/5 ukupne Zemljine površine); do 6000-7000 m dubine

Obalna linija



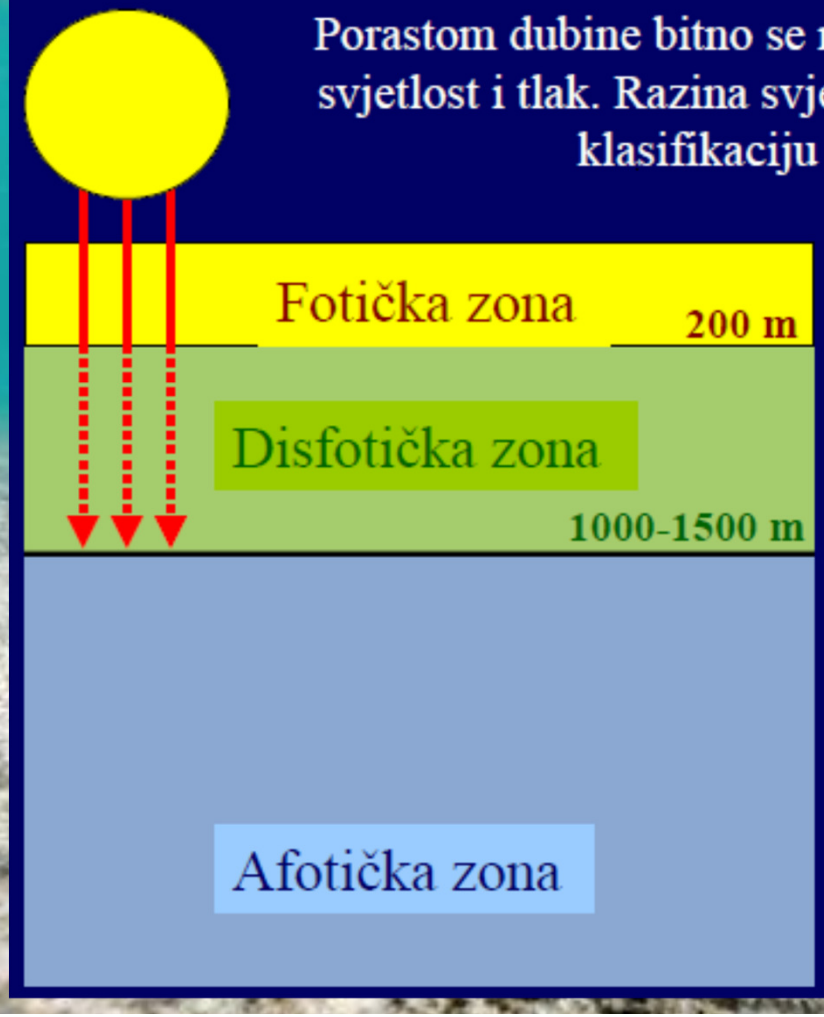
Kotline i jarci
do najvećih dubina (11 km)

Kontinentalna podina (šelf)
7% morskog dna; do 200 m dubine; prosječna širina oko 70 km

Kontinentalni slaz
15% morskog dna; do 1500-2500 m dubine

Klasifikacija mora na temelju batimetrije

Porastom dubine bitno se mijenjaju tri parametra: temperatura, svjetlost i tlak. Razina svjetla može poslužiti kao parametar za klasifikaciju pojedinih zona u moru



A) Fotička (trofogena) zona

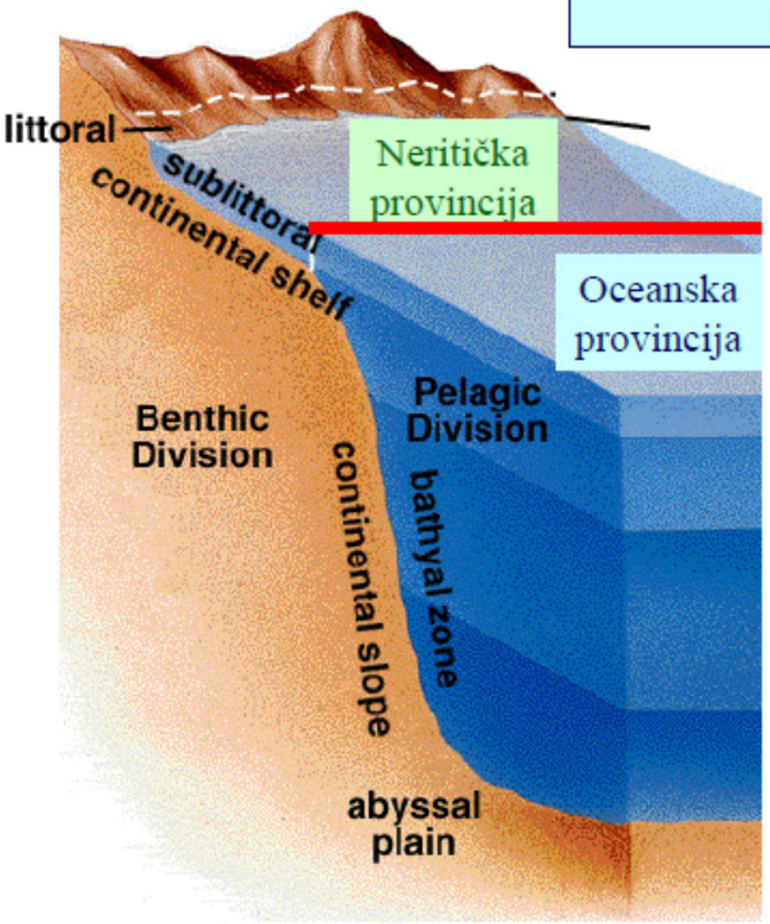
1. Eufotička ili osvjetljena zona (do 200 m)

2. Disfotička (oligofotička) ili sumračna zona (od 200 do 1000-1500 m)

B) Afotička (trofolitička) zona

Neritička i oceanska provincija

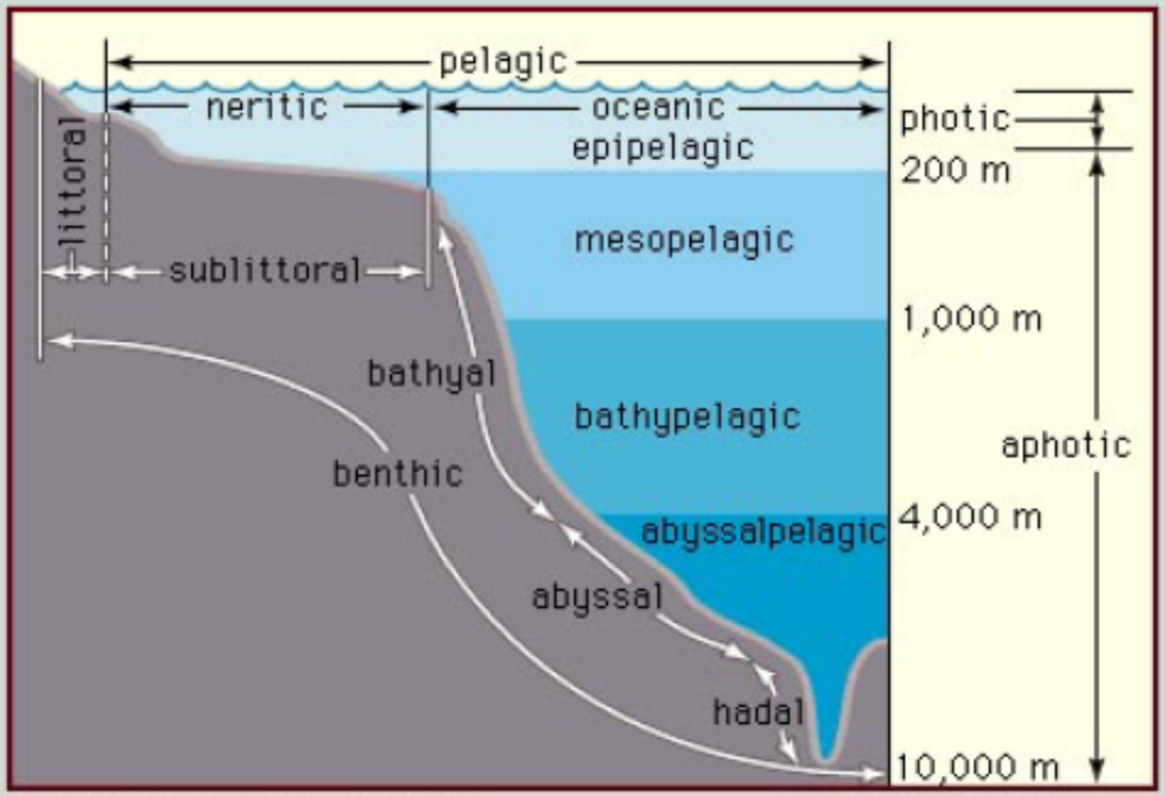
Obuhvaćaju dijelove vodene mase i morskog dna koje te vodene mase prekrivaju



Neritička provincija – sačinjava je skup epikontinentalnih mora (mora koja prekrivaju kontinentalnu podinu ili šelf); obuhvaća 7% morske površine

Oceanska provincija – sačinjavaju je preostala mora koja prekrivaju morska dna koja se protežu ispod kontinentalne podine; obuhvaća 93% morske površine

Neritičko i oceansko područje



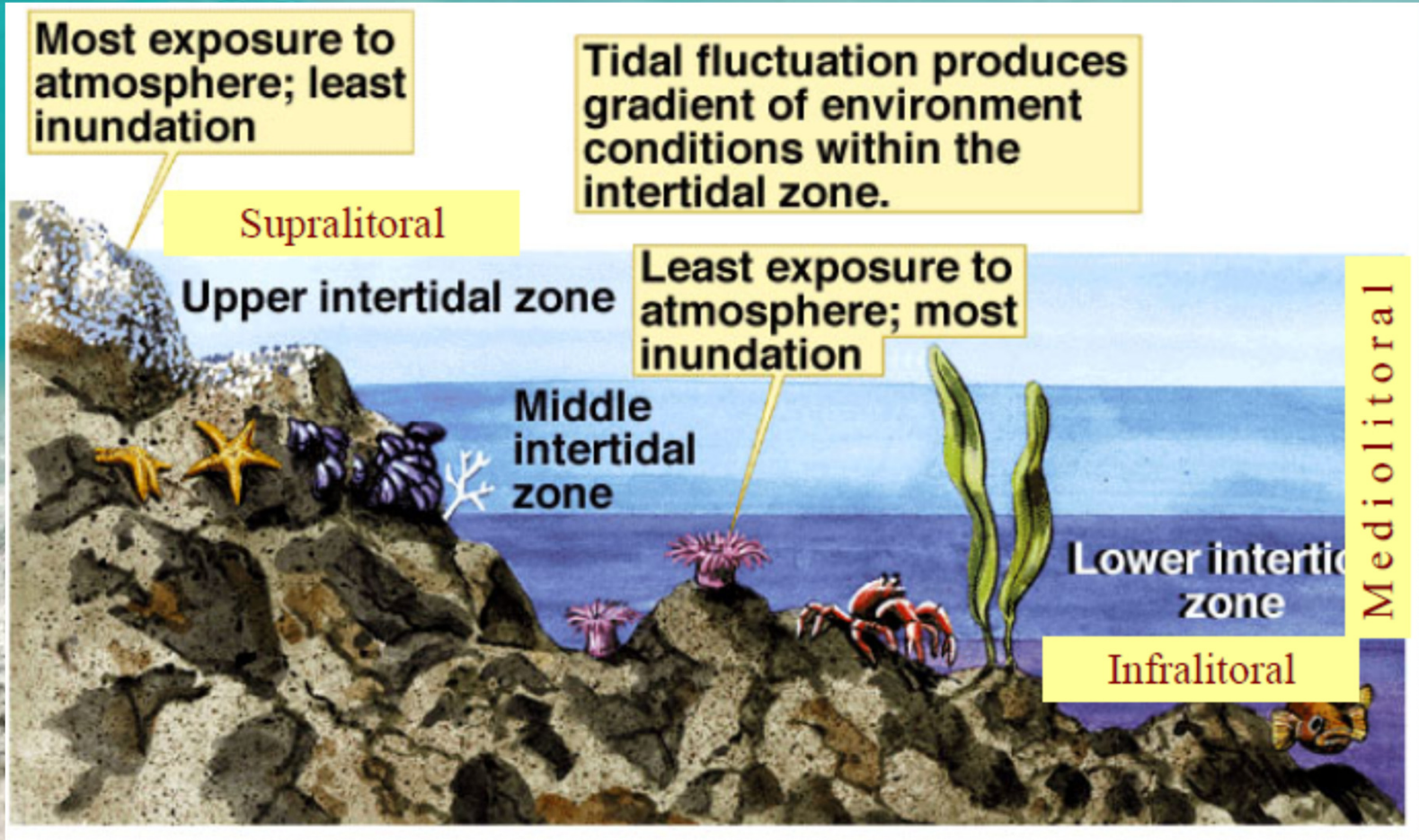
NERITIČKO PODRUČJE:

1. **Litoral:** 0 - 60 m
2. **Sublitoral:** 60 – 200 m

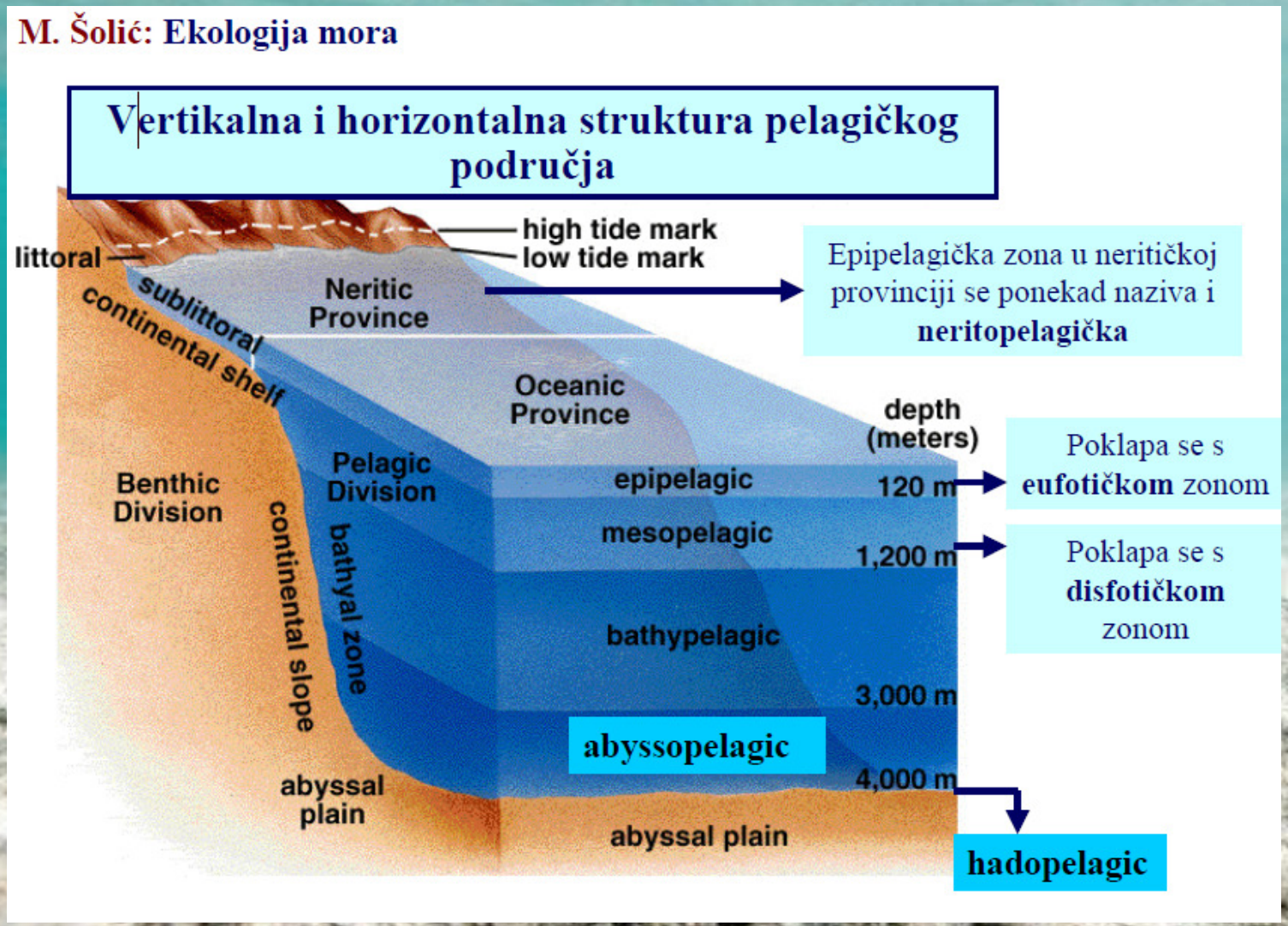
OCEANSKO PODRUČJE:

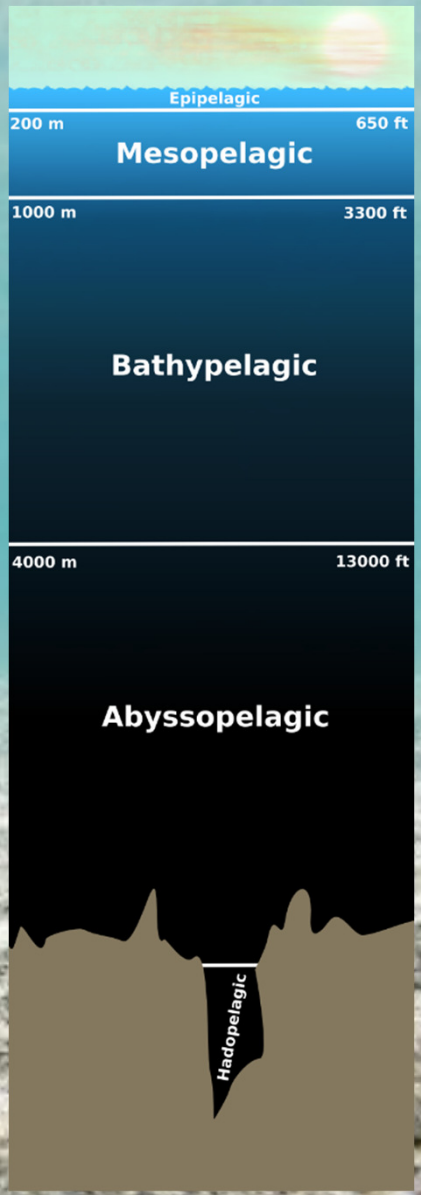
3. **Batijal:** obuhvaća kontinentalni slaz
4. **Abisal:** obuhvaća abisalnu ravnicu
5. **Hadal:** obuhvaća kotline i jarke

Litoral

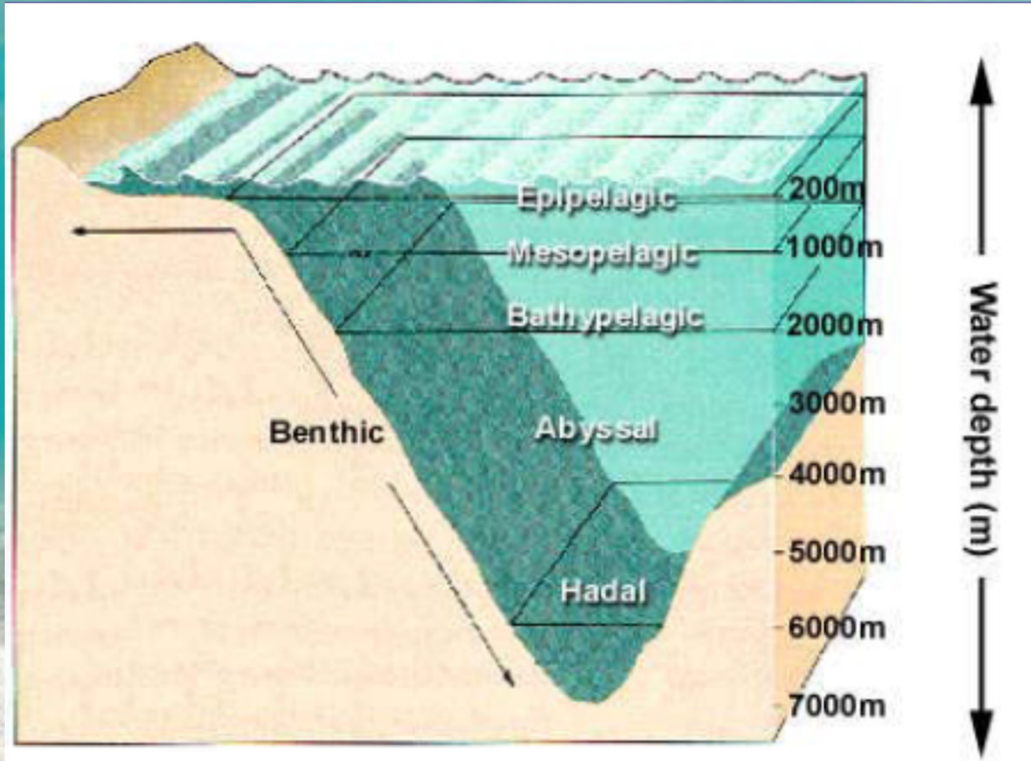

Most exposure to atmosphere; least inundation
Tidal fluctuation produces gradient of environment conditions within the intertidal zone.
Supralitoral
Upper intertidal zone
Least exposure to atmosphere; most inundation
Middle intertidal zone
Lower intertidal zone
Mediolitoral
Infralitoral

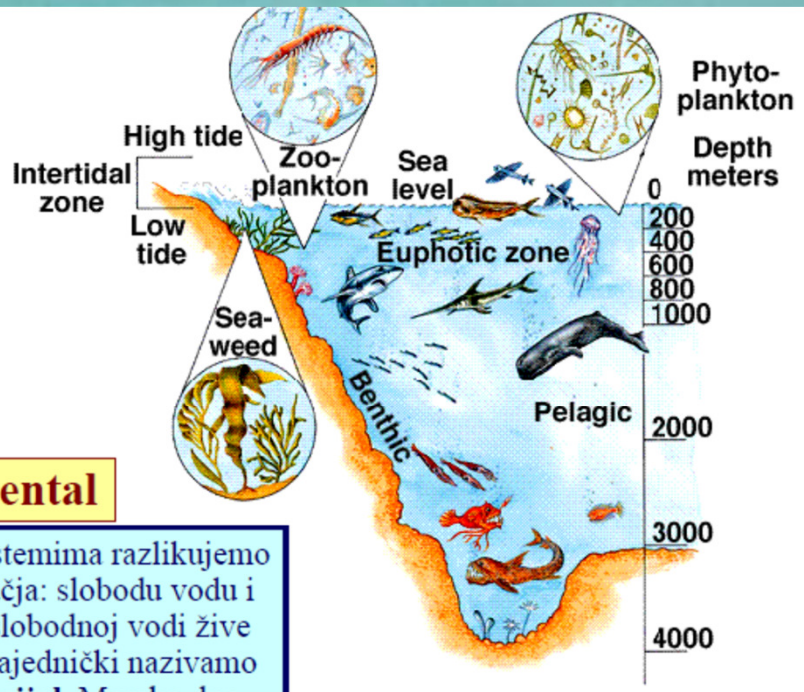
Dubinske životne zone oceana





Pelagičko i bentosko područje

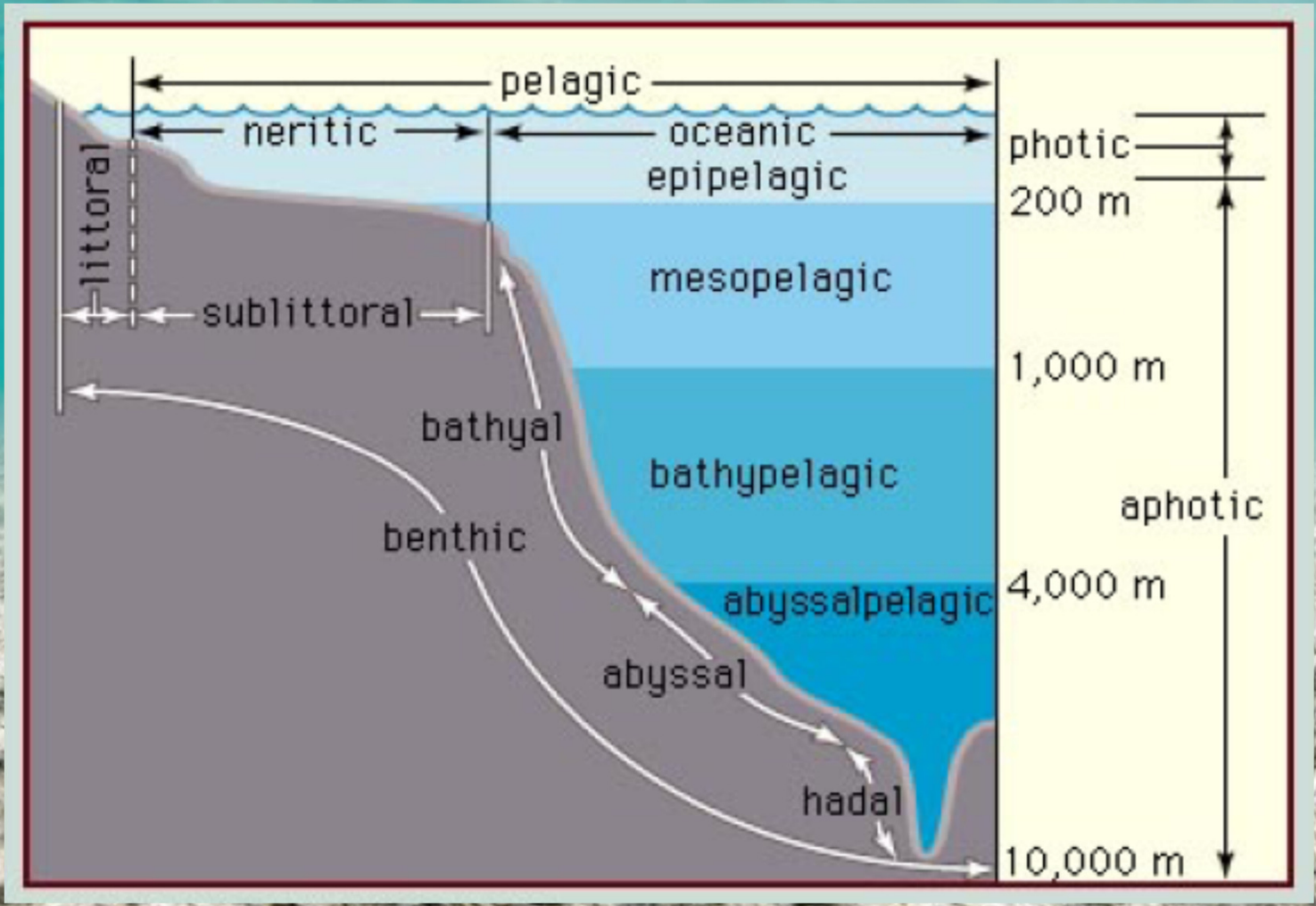




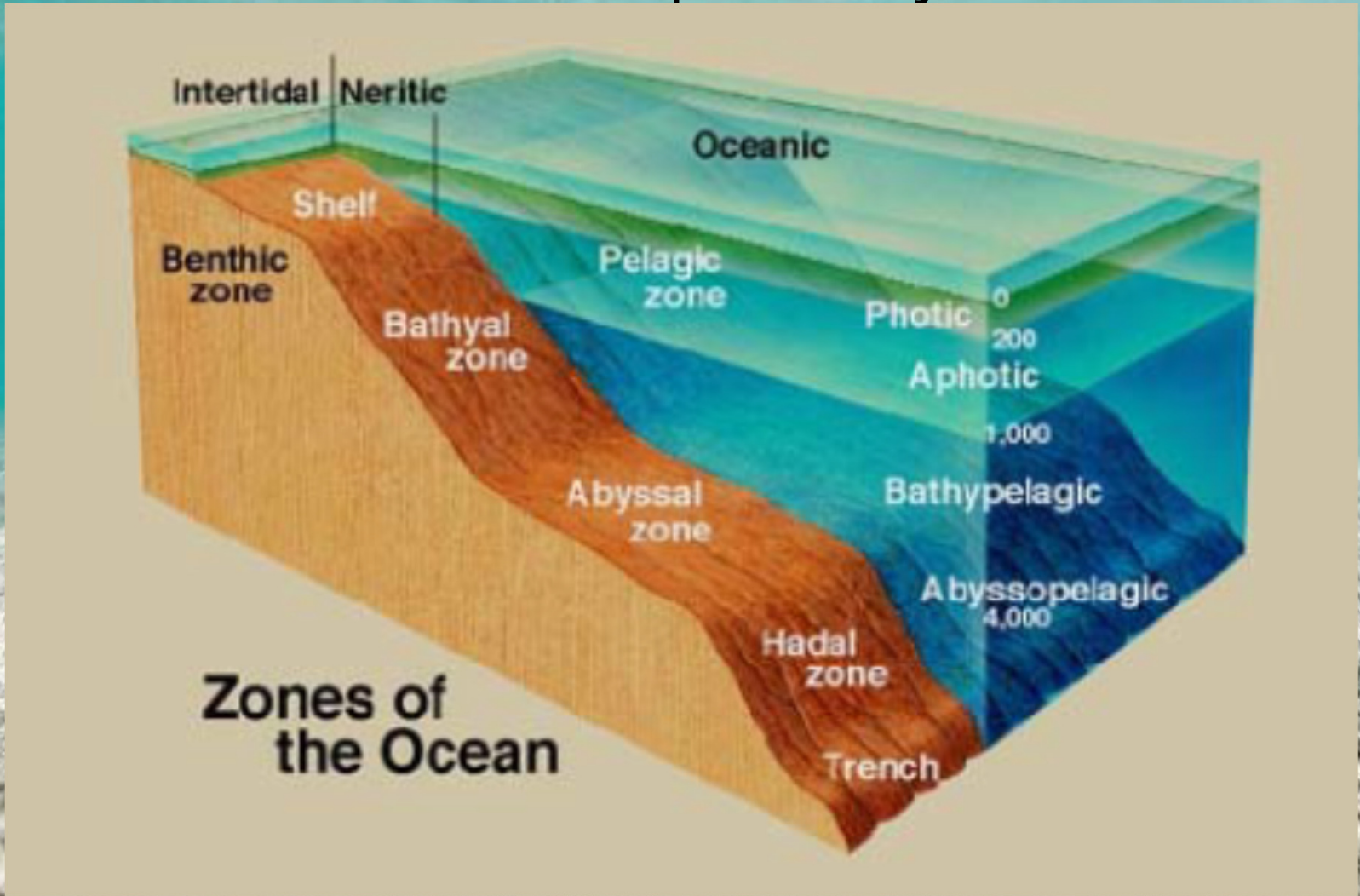
Pelagijal i Bental

U morskim ekosistemima razlikujemo dva velika područja: slobodu vodu i morsko dno. U slobodnoj vodi žive organizmi koje zajednički nazivamo **pelagos** ili **pelagijal**. Morsko dno naseljavaju organizmi koje zajednički nazivamo **bentos** ili **bental**

Pelagičko i bentosko područje



Neritička i oceanska područja

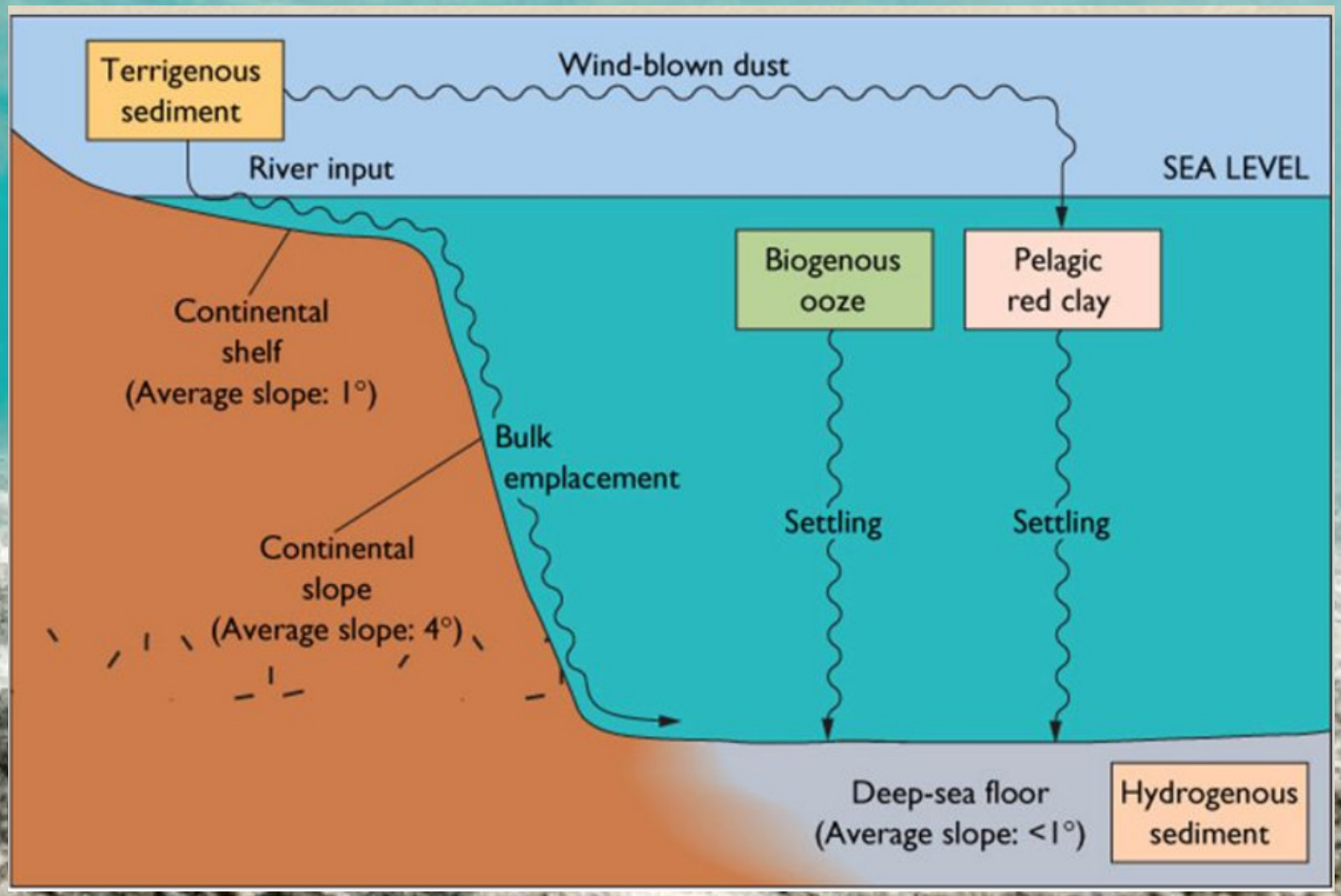


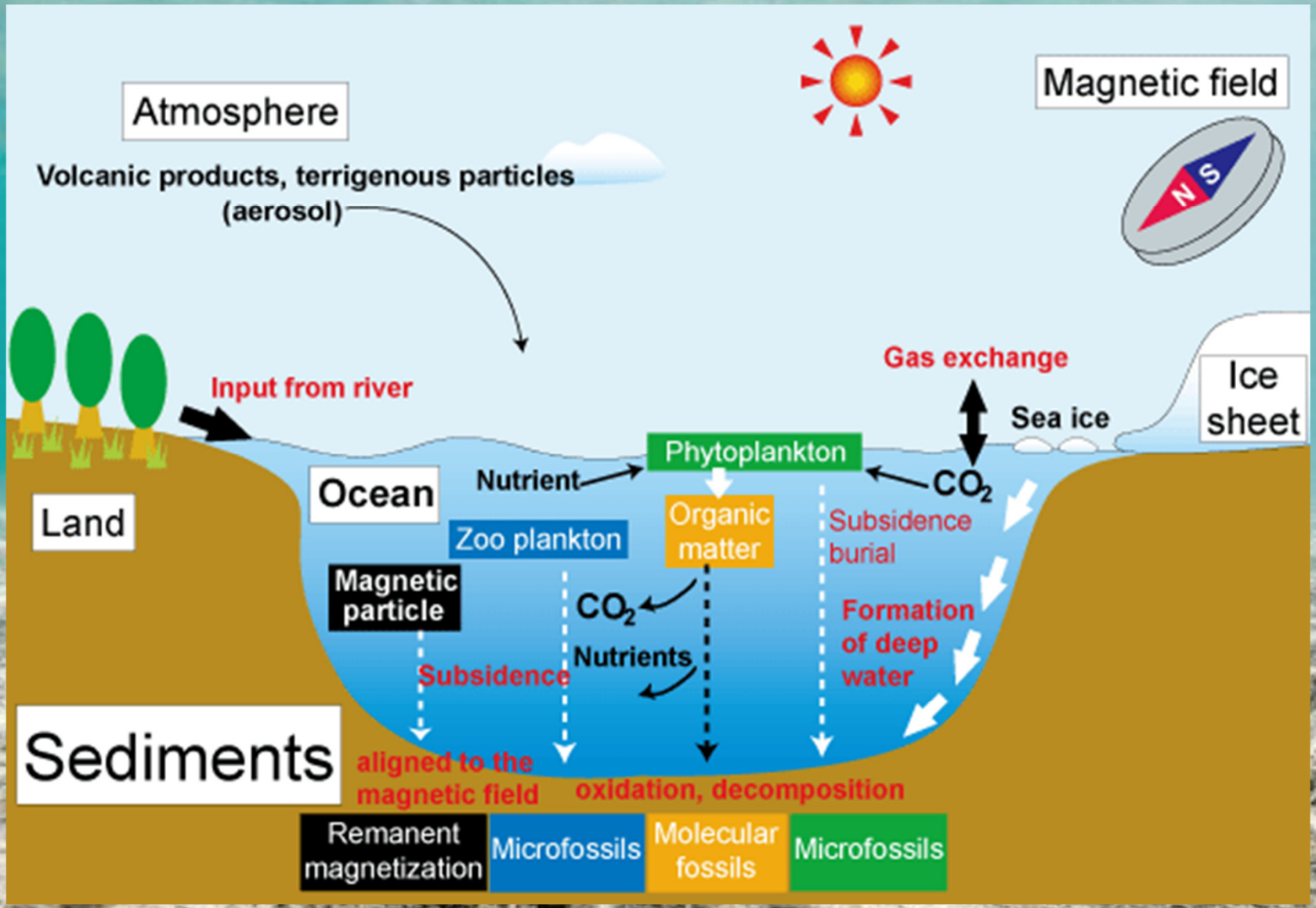
Mjerenje dubine mora

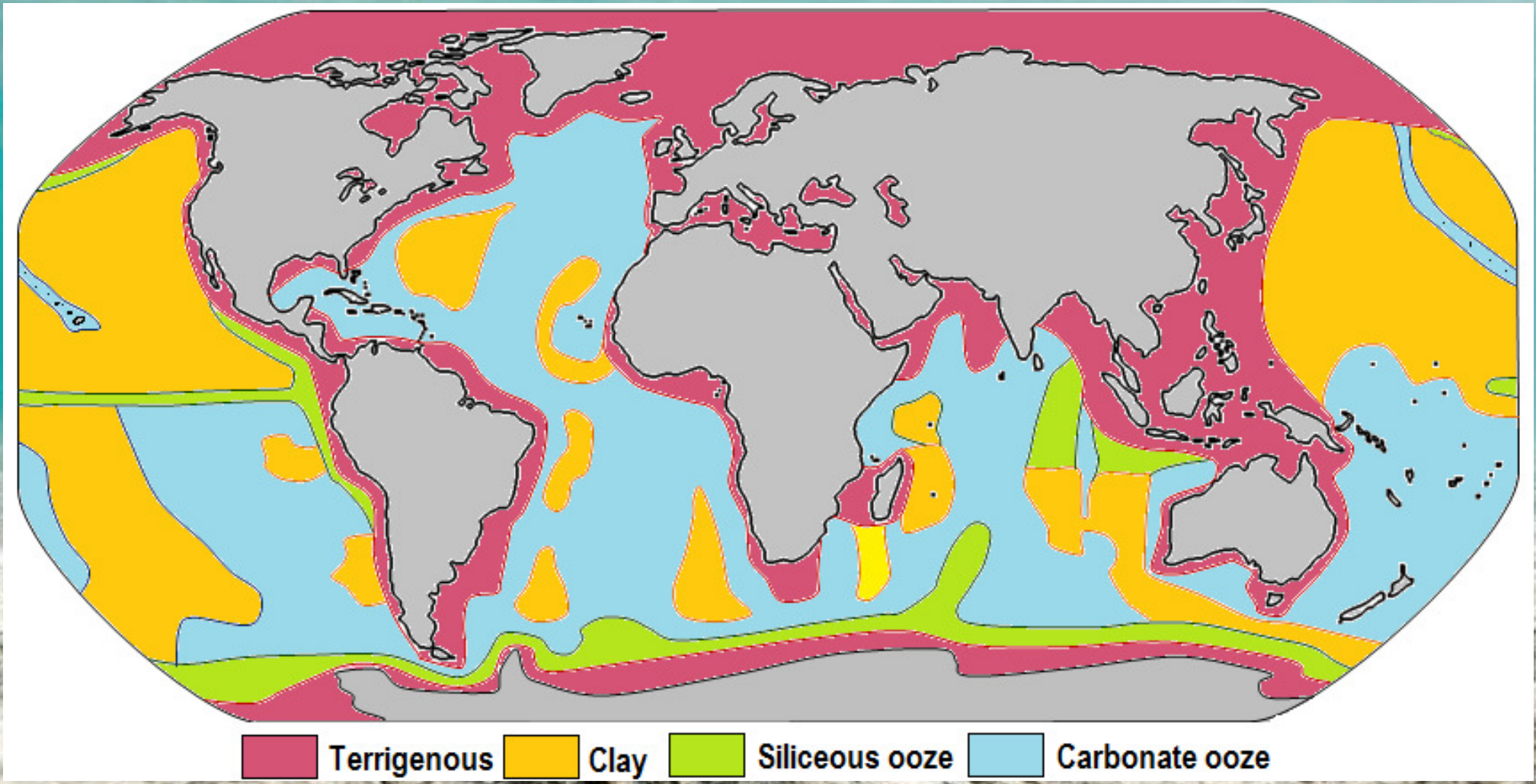
- Obrađeno u terestričkoj navigaciji

Sedimenti morskog dna

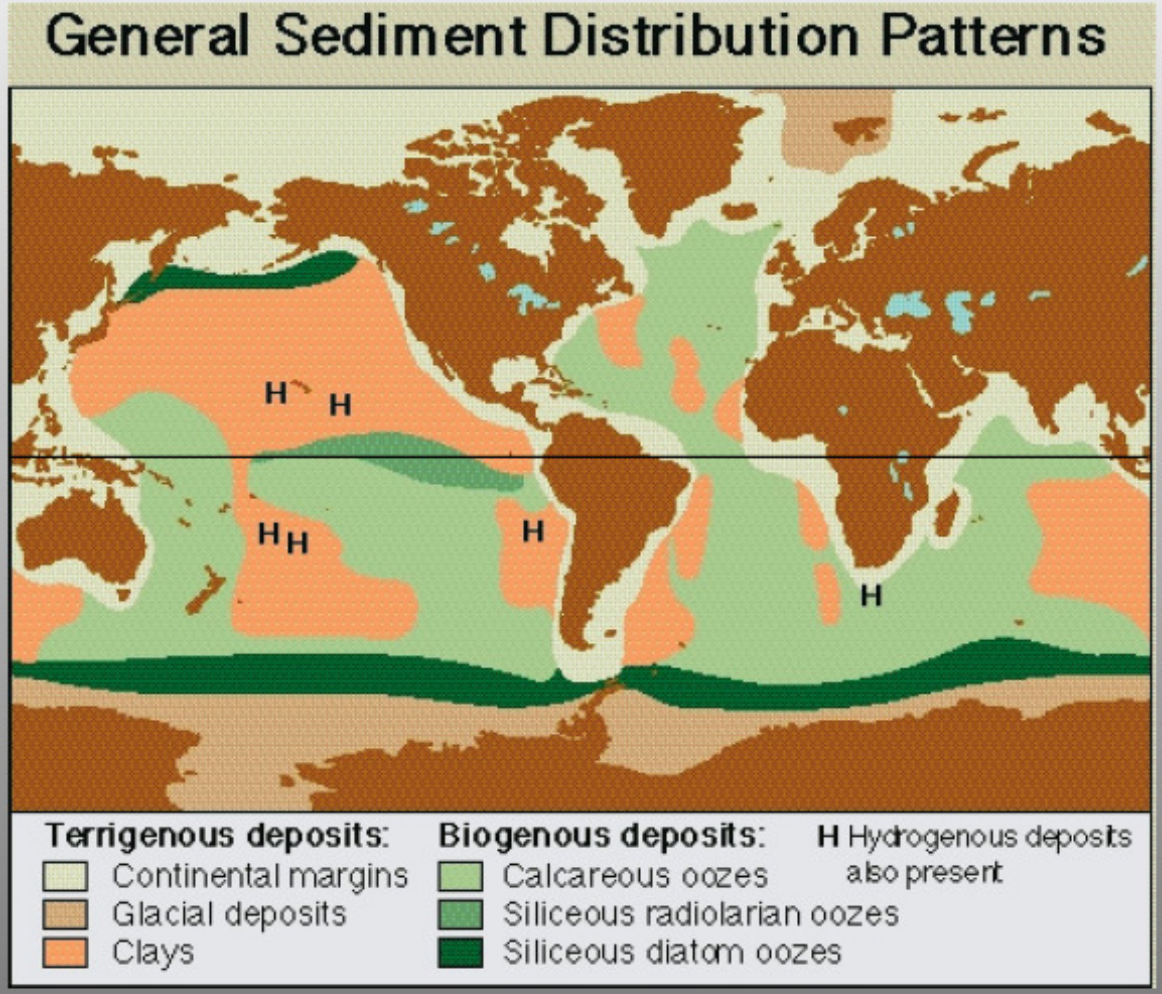
- terigeni
- biogeni
- halmirogeni
- kozmički
- vulkanski

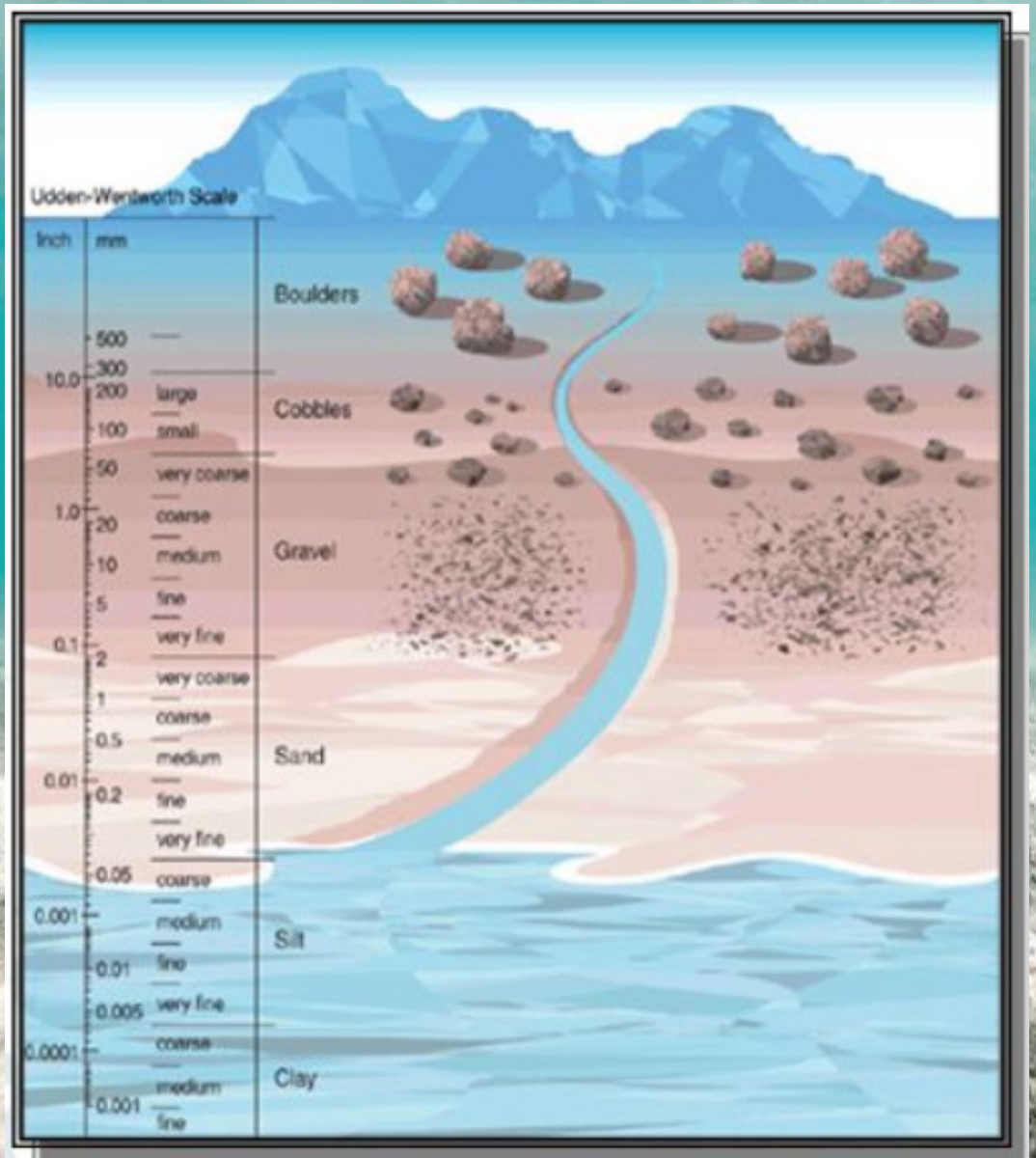


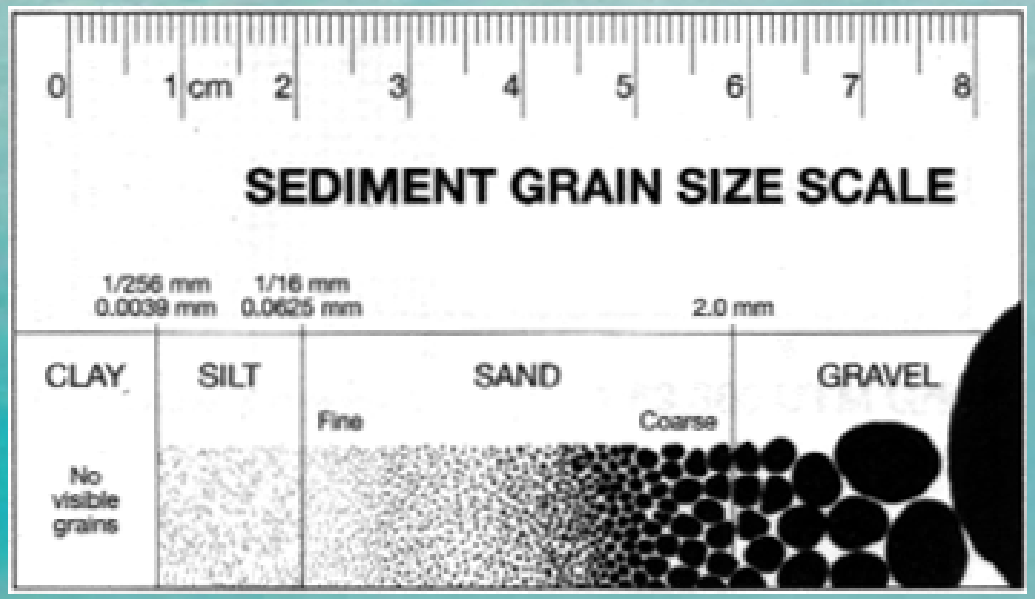

Atmosphere
Volcanic products, terrigenous particles (aerosol)
Magnetic field
N
S
Input from river
Gas exchange
Sea ice
Ice sheet
Land
Ocean
Nutrient
Phytoplankton
CO_2
Zoo plankton
Organic matter
Subsidence burial
Magnetic particle
CO_2
Nutrients
Formation of deep water
Subsidence
Sediments
aligned to the magnetic field
oxidation, decomposition
Remanent magnetization
Microfossils
Molecular fossils
Microfossils


Terrigenous
Clay
Siliceous ooze
Carbonate ooze

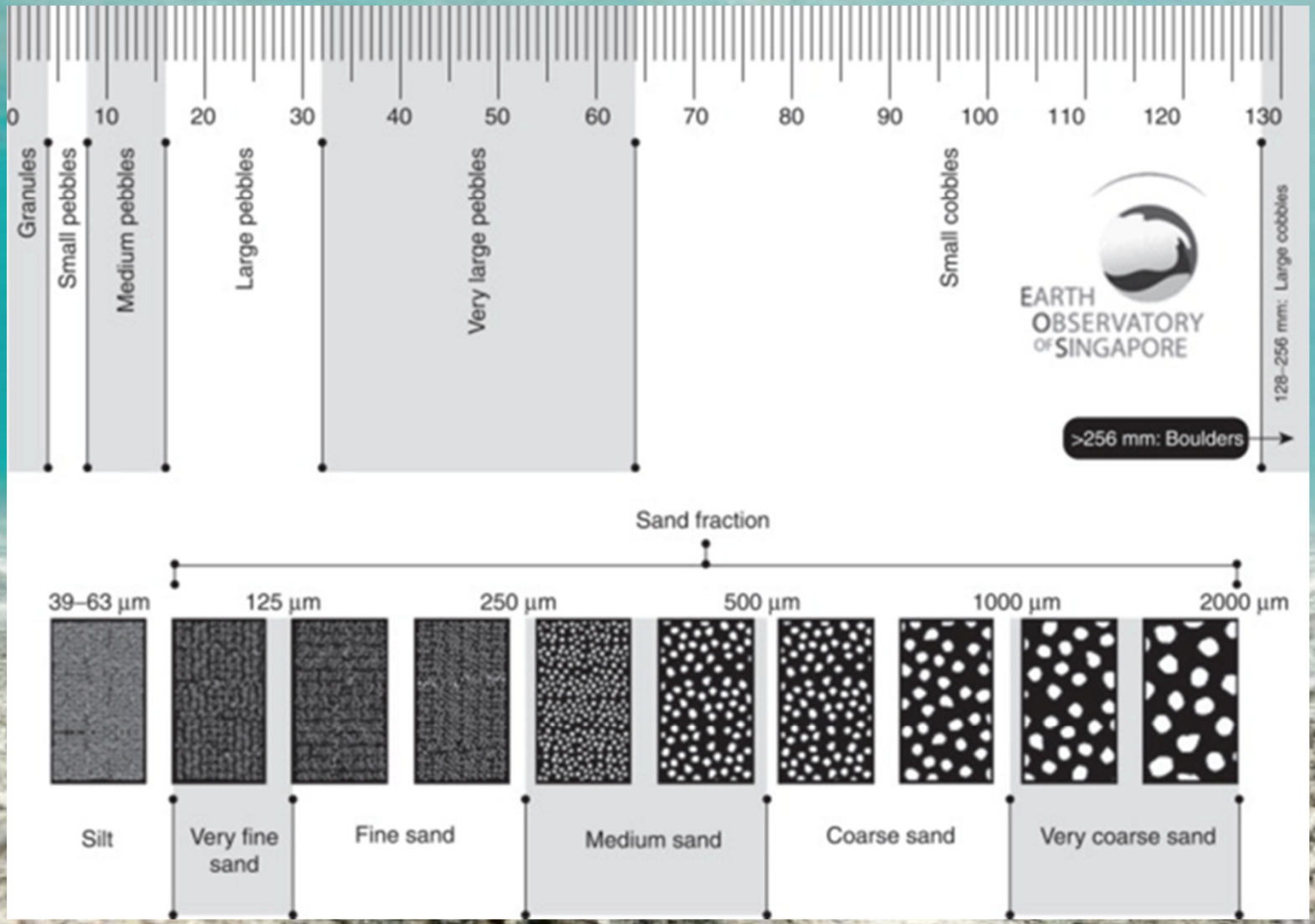
Raspodjela tipova sedimenata u svjetskim morima





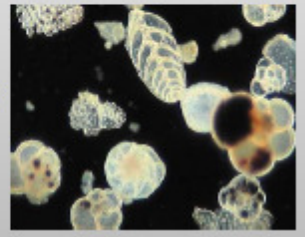


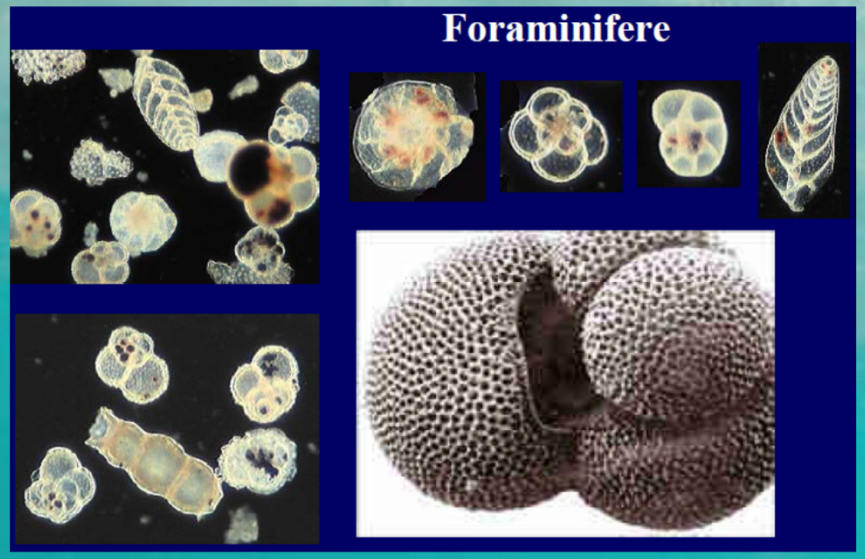
- **Podjela sedimenata prema teksturi (veličini čestica)**
  - **Wentworthova skala uključuje:**
    - **STIJENA: > 2 mm**
    - **PIJESAK: 62μm – 1 mm**
    - **MULJ: 4 – 31 μm**
    - **GLINA: < 1.5 μm**

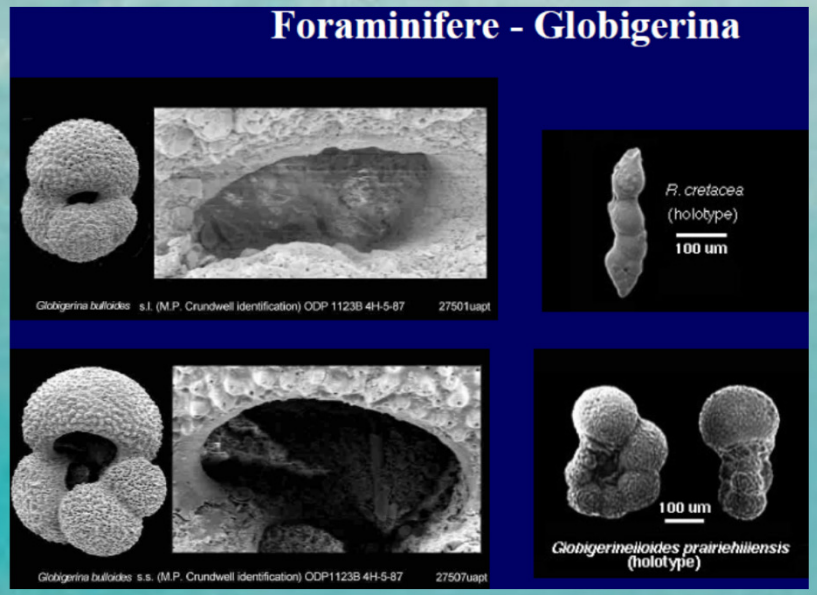

0
10
20
30
40
50
60
70
80
90
100
110
120
130
Granules
Small pebbles
Medium pebbles
Large pebbles
Very large pebbles
Small cobbles
128–256 mm: Large cobbles
>256 mm: Boulders
EARTH OBSERVATORY OF SINGAPORE
Sand fraction
39–63 µm
125 µm
250 µm
500 µm
1000 µm
2000 µm
Silt
Very fine sand
Fine sand
Medium sand
Coarse sand
Very coarse sand

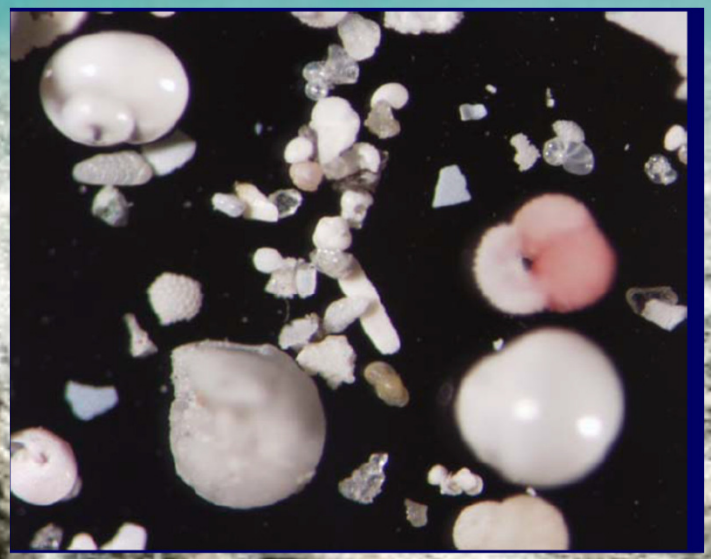
MULJEVITA DNA

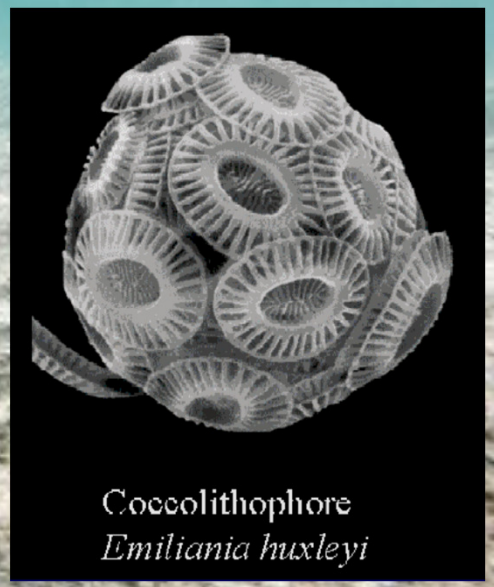
- 62% Pelagičkog porijekla (Biogeni sediment)
  - 1.Vapnenački mulj 48%
    - Do 4-5 km dubine
    - Foraminiferski mulj (Globigerinski mulj)
    - Kokolitoforidni mulj
    - Pteropodni mulj
  - 2. Kremeni mulj 14%
    - Dijatomejski mulj
    - Radiolarijski mulj
- 38% Terigenog porijekla




Foraminifere


Foraminifere - Globigerina
Globigerina bulloides s.l. (M.P. Crundwell identification) ODP 1123B 4H-5-87 27501uapt
R. cretacea
(holotype)
100 um
Globigerina bulloides s.s. (M.P. Crundwell identification) ODP1123B 4H-5-87 27507uapt
100 um
Globigerineloides prairiehillensis
(holotype)

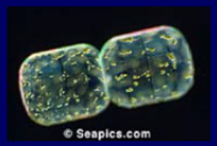


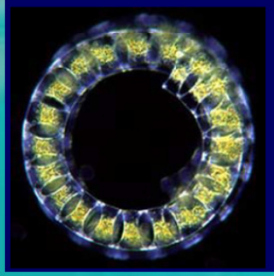

Coccolithophore
Emiliania huxleyi

Pteropodni puž

Dijatomeje

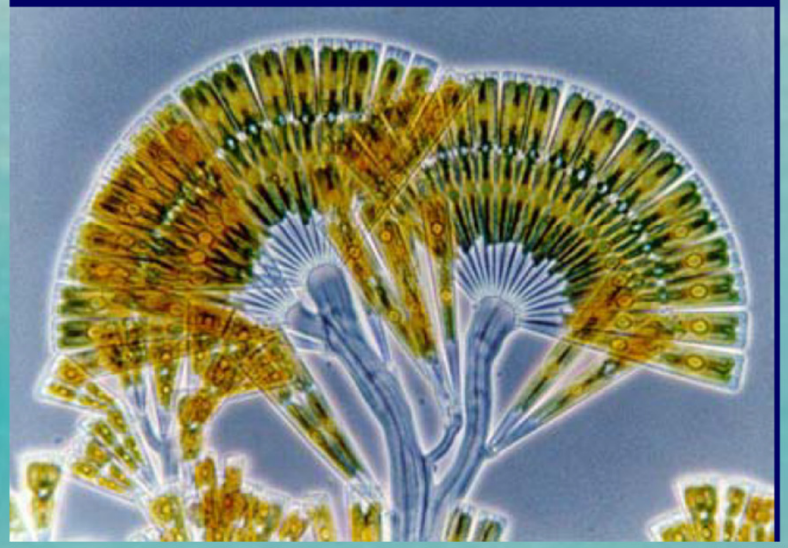
Cerataulina sp.



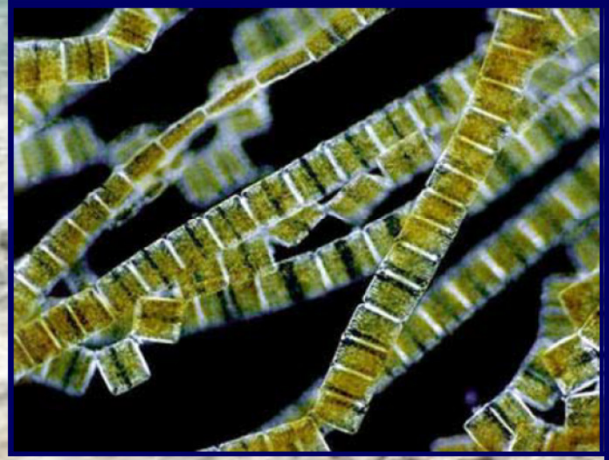


Licmophora sp.

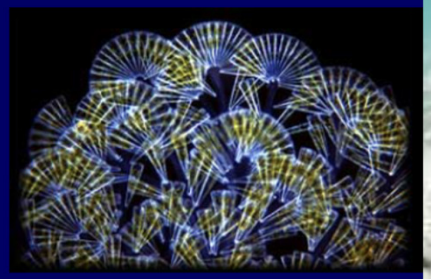
Dijatomeje

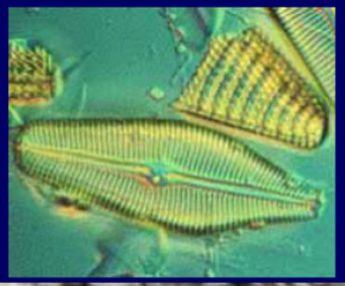


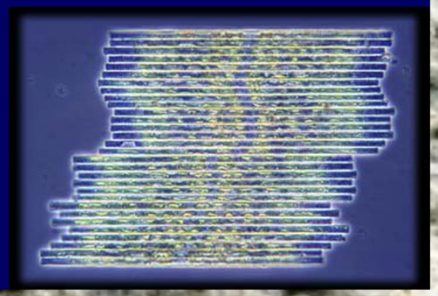
Epifitska dijatomeja *Rhabdonema sp.*



Dijatomeje

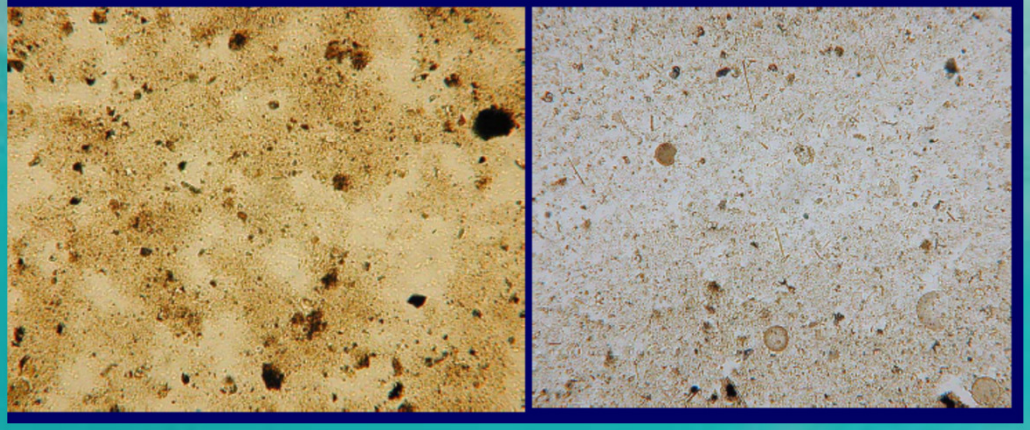






Radiolaria (zrakaši)

Dubokomorska crvena ilovača



Foraminifere i spikule spužava

Pteropodi i radiolarija