

Course Contents

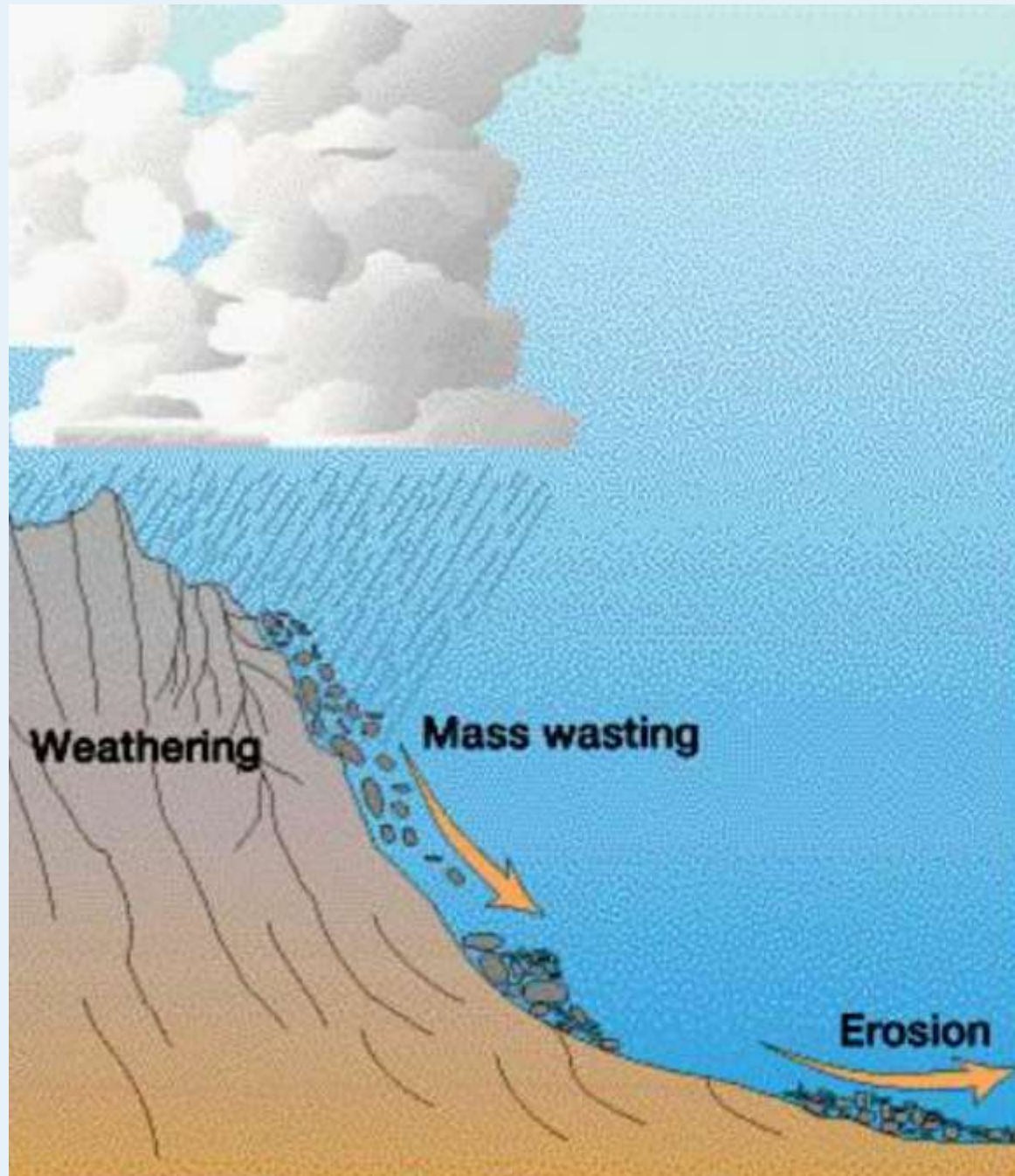
1. Fluvial System
2. Flow mechanics
3. Longitudinal Profile
- 4. Erosion processes**
5. Sediment transportation
6. Channel morphology
7. Floodplains
8. Terraces

Erosion processes

Denudation

1. Weathering
2. Mass Wasting
3. Erosion

Denudation includes all processes that remove the relief at the surface of the Earth.



Relationship: Weathering Mass Wasting Erosion and Transportation

Together,
these processes are
responsible for
Denudation
of Earth's surface

Erosion processes

Weathering

Breaking down or dissolving of rocks and minerals on the surface of the Earth.

- Physical breakdown (weathering)
- Chemical decomposition (weathering)
- (Biological processes)



- Weathering processes prepare Earth materials for subsequent transportation by agents of erosion.
- Weathering is an essential component of soil formation at the Earth's surface.
- Weathering processes are directly responsible for land form and landscape evolution.

Erosion processes

Weathering

➤ Physical breakdown

Physical weathering is in-situ disintegration of rocks and comminution of their constituent minerals without major chemical change.

Physical weathering involves stresses generated in the rock by growth of ice crystals, by heating and cooling, wetting and drying, and by organic activity. Because forces from several of these sources may act more or less simultaneously, their individual importance and degree of interaction are not easily evaluated.



<https://education.nationalgeographic.org/resource/weathering>

Erosion processes

Weathering

- Physical breakdown



Erosion processes

Weathering

➤ Chemical decomposition

Chemical Weathering processes involve the chemical and or mineralogical transformation of rocks and minerals at the Earth's surface.

- Solution (dissolution)
- Hydrolysis
- Hydration
- Carbonation
- Chelation
- Redox reactions



Erosion processes

Weathering

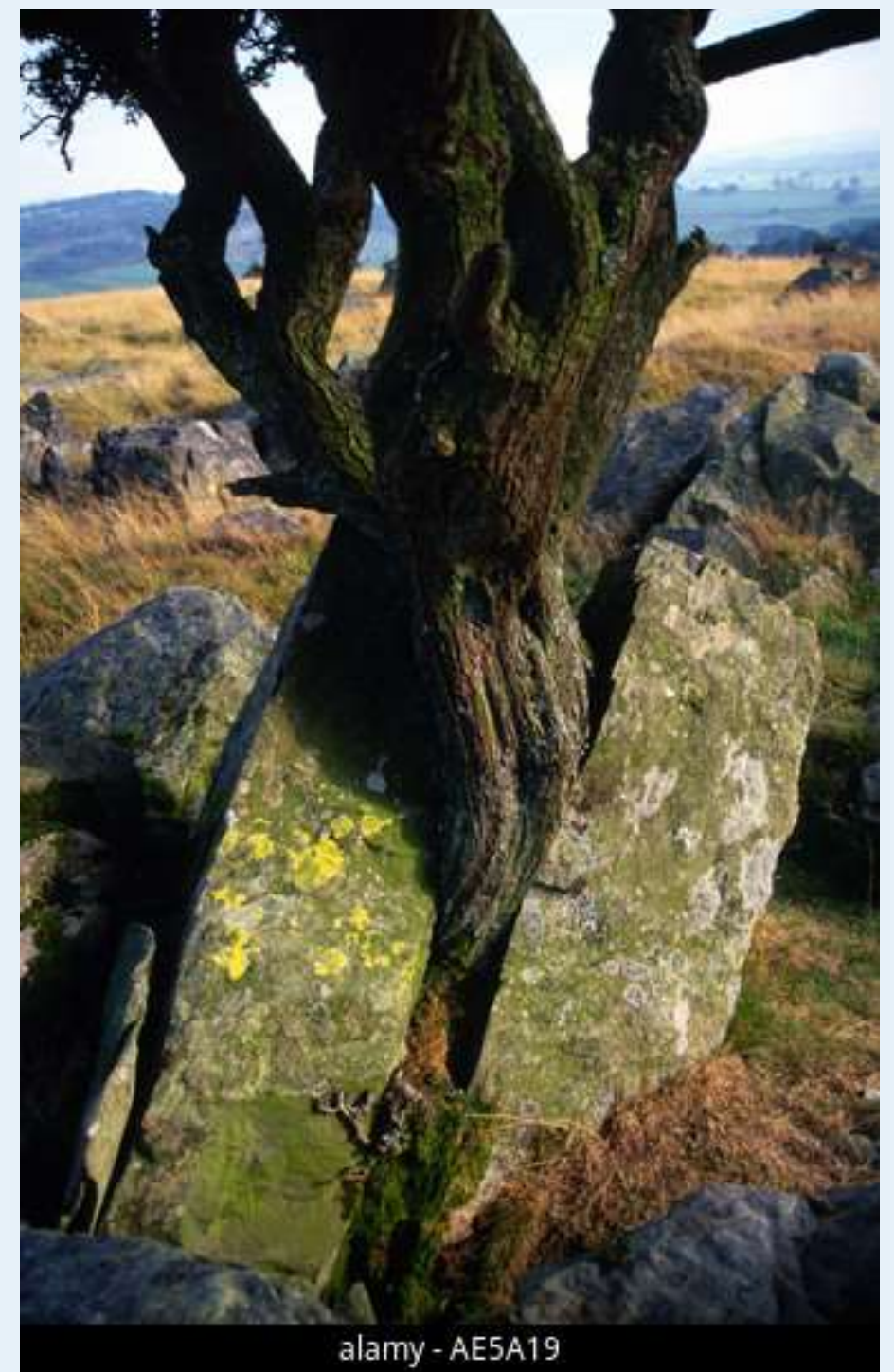
- Chemical decomposition



Erosion processes

Weathering

➤ Biological Weathering



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<https://www.alamy.com/stock-photo/biological-weathering.html?page=2&sortBy=relevant>

Erosion processes

Weathering

- Chemical and
Physical Weathering

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Erosion processes

Weathering

- Chemical and Physical Weathering

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Erosion processes

Weathering

EROSION VS. WEATHERING



EROSION

- Erosion refers to the displacement of solids such as water, wind and ice

WEATHERING

- Weathering refers to the decomposition of soils and their minerals and rocks through direct contact with the earth's atmosphere

<https://byjus.com/biology/difference-between-erosion-and-weathering/>