



# *What is Geomorphology?*



The word “geomorphology” comes from the Greek roots “geo,” “morph,” and “logos,” meaning “earth,” “form,” and “study,” respectively. Therefore, geomorphology is literally “the study of earth forms.”

Geomorphologists are concerned primarily with earth’s surficial features, including their origin, history, composition, and impact on human activity.

Geomorphology concentrates primarily on Quaternary (Pleistocene and Holocene) features.

Earth’s landforms reflect the local and regional balance between hydrologic and tectonic processes.





# *Controlling Factors for Geomorphology*



*Geomorphology reflects the local and regional balance between tectonic and hydrologic forces.*

## **Tectonic Factors**

- Structural style (normal faulting, thrust faulting, folding, vertical uplift)
- Plate position (active margin, passive margin, somewhere in between)

## **Hydrologic Factors**

- Climate (temperature, humidity, atmospheric and oceanic circulation patterns)
- Transporting medium (flowing water, ice, wind, waves, tides)

## **Prior Geologic History**

- Nature of surficial materials
- Inherited structures

# *Why Geomorphology?*

- To understand **geomorphological processes** of various environment.
- To detect **natural and environmental hazards** efficiently, e.g. earthquake, flooding, landslide, tsunami, volcanism etc.
- To identify **various landform features and landscapes**
- To identify various landform features **from satellite images**
- Coastal and river research
- Vulnerability studies

## Meaning and Scope of Geomorphology

- What is *Geomorphology*?
- Derived from a Greek word “geo” which is *earth* and “Morpho” which is *form*. Therefore geomorphology is a discourse on Earths Form.
- It is science that treats the **general configuration of the earth's surface in terms of the classification and description of the nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes** .
- By examining the above definition we can classify geomorphology in to
  - ❖ *Processes or functional Geomorphology*
  - ❖ *Historical Geomorphology*
- Therefore geomorphology studies form, processes and history about earth.



## Scope of Geomorphology



- ❖ The scope of geomorphology is in dilemma that many of the earth scientists of the world have different perspective.
- ❖ some scientist says “ *it must study about physical configuration, process and history of the earth only*” some others says “ *it studies about the forms and shape of the earth as well as other earth like planets like Mars, and Venus*”
- ❖ Traditionally the scope of geomorphology is delimited to “*terrestrial environment*” due to its strong man - terrestrial environment relationship.
- ❖ However due to advancement in technology in mans recent life history the discipline has begun to study the “*aquatic environments*”.

# *Importance of Geomorphology*

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- To detect **natural and environmental hazards** efficiently, e.g. earthquake, flooding, landslide, tsunami, volcanism etc.
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