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# A study on Different Approaches of Geomorphology

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## *Abstract:*

*Geomorphology is defined as the physical features of the earth surface and their relation to its geological structures. The present paper deals with the different approaches of geomorphology in the field of earth science and its related geographical records. The river and landforms which are produced by the action of the flowing water gave the random approach the study of landforms and the hydrologic geometry of the rivers. The paper covers the review of the various tools and techniques used for the geomorphological studies as well as the learning of these concepts with the involvement of technique of aerial photography, geomorphological mapping etc. The analysis of the geomorphological studies is useful in various flood hazard assessment as well. It also contain the information of the different types of the geomorphology. The future endeavors which implement for the study of earth surfaces and its role in the ecological balance.*

***Keywords:*** *Geomorphology, Landforms, Aerial photography, Geomorphological mapping*

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**Introduction**

Geomorphology is defined as the study of the shape of the Earth. The geomorphology is basically a classification and the study of the natural processes that occur in the river and streams. Hence the geomorphology and hydrology of most of the rivers has fundamentally altered through a long history of human intervention including the modification of rivers channels, wider changes in landscape and floodplains etc. that effect the water and sediment delivery to the river. With the help of the characterization of geomorphological change it seems to be possible to covering back the layers of time so as to investigate that how and why the river has changed.

In the past decades the geomorphology discipline has gone through a very vast paradigm shift from the geographical geomorphology to the geophysical geomorphology. This shows the change of emphasis to the geomorphic concepts as well. These concepts named as process-pattern relationships, diversity, nonlinearity, complexity to understand the evolutionary history of landscapes and landforms.

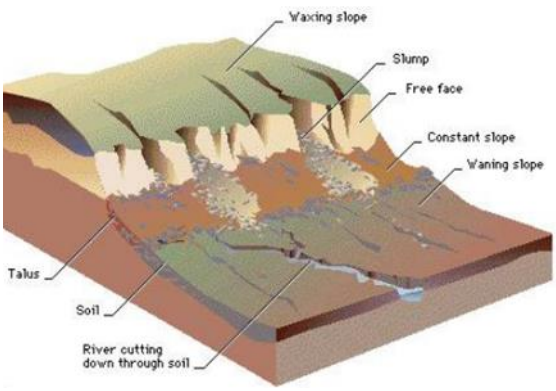


**Figure 1 Geomorphology**

**Process Geomorphology**

The process geomorphology is defined as the study of process which is responsible for the landform development. In the modern time, the first process of geomorphologist started by Leonardo da Vinci. The geomorphologist have completed their subject comprises of three great services.

- They made up a database of process rates in various parts of globe.
- They made up an increased refined models for the prediction of short term changes in the landforms.
- They produced some immensely great ideas about the stability and instability in the geomorphic system.

**Fields of Applied Geomorphology**

- Environmental studies
- Studies on the basis of human impact on environment. This may relate to diffuse and possibly gentle the impacts or concentrate then usually violent impacts.
- Studies on the numerous disasters and environmental hazards.
- Applicable time scale to decrease in the order of these environmental studies.

**Review of Literature**

**Giusti and Gonzalez-Diez (2000)** proposed the methodological approach for the study of the one of the component of geomorphological asset i.e. intrinsic quality. The paper focus on the two methodologies which are compared on the basis of variables that expresses the same concept. The methodology is based on the classification of geomorphological asset with the involvement of geomorphological maps. The method projected to combine the expert's evaluation and measurable parameters to examine the impacts on intrinsic quality of SGI.

**Karagiozi et al. (2011)** discussed about the development of GIS tool and can be exploited eventually in the manner of WebGIS as a part of decision support tool for flood hazard and risk assessment. The present research was conducted in Laconia Prefecture in Peloponnesus where the flood hazard assessment was done with the help of hydrological models into a GIS environment. The development based on the applications discloses that the GIS application can be utilized from non-GIS specialist and hence the stakeholders can easily interact with the collaborated more efficiently with the other relevant one. Conclusively the in terms of additional data integration with that of the static flood hazard maps gives the capability to experts, a potential tool is introduced so as to reassess the flood

hazard with the real time or approx. real time rainfall data. Hence they focusses with the fact that this is considered as one of the next step towards upgrade of methodology by research team.

**Jain, Tandon and Sinha (2012)** discussed about the significant advances that are made for understanding the dynamics of geomorphic system with the help of development of some new concepts. It basically guided by the change in the scale of geomorphic analysis local landform and to regional scale i.e. landscape and some because of the emergence of new scientific tools and the quantitative models. The present paper review about the geomorphic concepts like scale, equilibrium, sensitivity, connectivity etc. and their application for the knowledge of geomorphology of large river system i.e. the Ganga River System. The paper focus on the large river system, importance of scale, diversity, multi causality and the coupled natural and human system earth.

**Otto and Smith (2013)** stated about the geomorphological mapping which is regarded as the technique of discipline which give the valuable base data for the geomorphological research and the environment research as well as practice. These maps are used for the graphical inventories of the landscape depicting landforms and the surface with the involvement of subsurface material. They covers the history, introductory information as well as most important the digital mapping techniques. They conclusively discussed about the reemergence of the geomorphological mapping and the pre-eminent paradigm for the complete result of the proliferation of spatial data i.e. aerial and satellite imagery, DEMs, IT system (for management) etc. It is finalized that the geomorphological mapping is somewhere defined as the underpinning domain as geomorphology moves center stage.

**Park (2012)** declared about the last review paper on geomorphology and physical geography and the aim to summarize in the present article comprises these all papers and discussed their findings to the foreign scholars. Numerous number of paper had been published in the Korean Geomorphological Association as it focus towards the main channel of geomorphological researches. Reflecting the remarkable achievements involving the Korean peninsula demand which help in understanding the geomorphology.

**Palmer (2013)** detailed about the knowledge for the student for general education of freshman level on physical geography and geomorphology at the Arizona State University. This paper cover the learning experience on the topics like volcanic, glacial, tectonic and coastal landforms. Also provide the supplementation with the panoramas, Google Street Views, topographic maps and also enhanced the student learning in numerous ways. The paper focus on the online aerial photo lab covering marine terrace uplift rates complemented with helicopter photography and virtual hikes of Grand Canyon as well as dependence of student selected location. Hence the Google Earth as learning tool which positively cover the majority of students to help with observations and researches**.**

## Conclusion

The river is one of the fundamental resource for the survival of human societies. In the present paper, there discussed review of various approaches of geomorphology and its role in the development of various aspects of earth science. The review is done on the basis of sensitivity, hierarchy, process-pattern relationship etc. for both the natural and human system of the earth. The use of various tools and techniques like GIS tools etc. for the intrinsic quality which is one of the component of geomorphology. The present review study is helpful to turn the focus towards the approaches of geomorphology for the various river management and the approaches towards the sustainable river ecosystem management.

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