



# **SNS COLLEGE OF TECHNOLOGY**

**An Autonomous Institution Coimbatore – 35**

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and Affiliated to Anna University , Chennai.

## **DEPARTMENT OF AGRICULTURAL ENGINEERING**

**19AGE308**

**WATERSHED PLANNING AND MANAGEMENT**

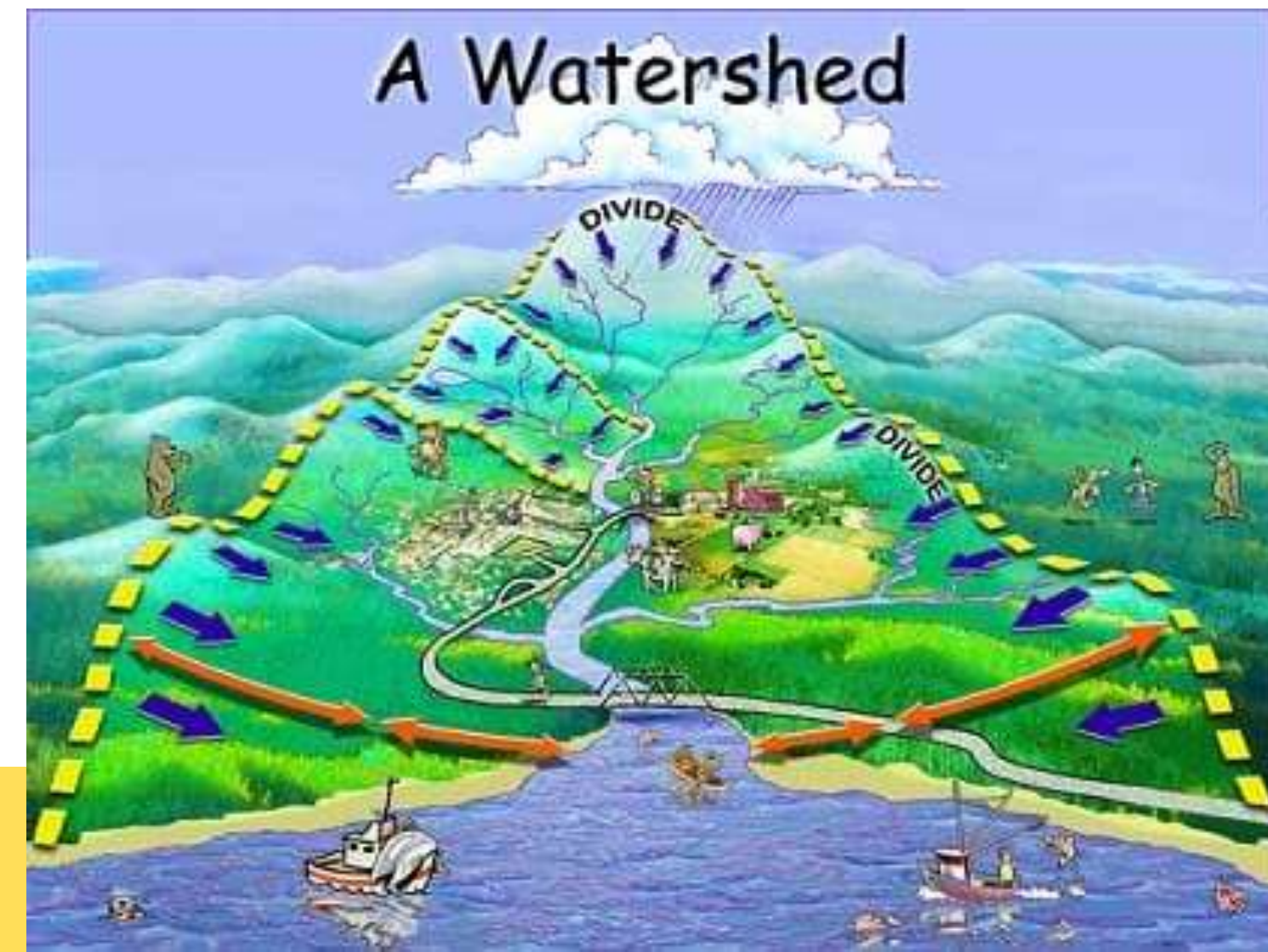
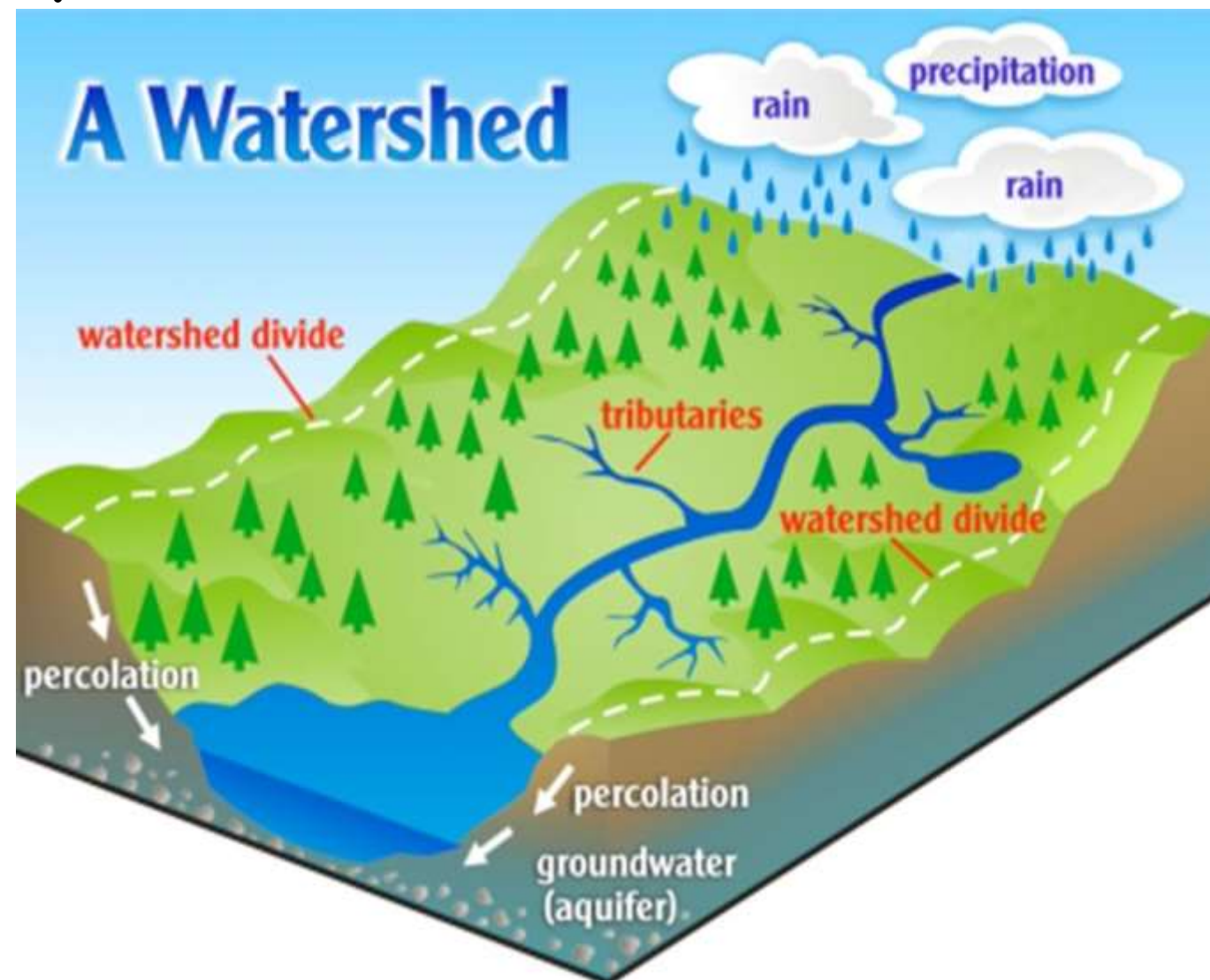




# INTRODUCTION



- A **watershed** is simply the geographic area through which water flows across the land and drains into a common body of water, whether a stream, river, lake, or ocean.
- The watershed boundary will more or less follow the highest ridgeline around the stream channels and meet at the bottom or lowest point of the land where water flows out of the watershed, the mouth of the waterway.

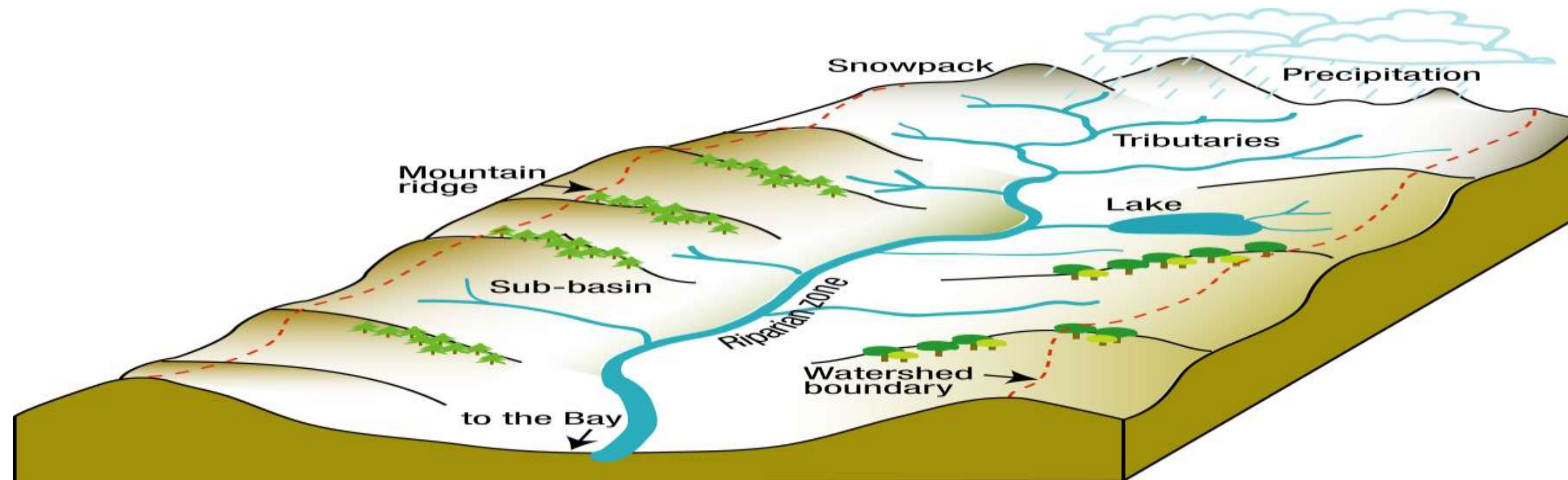






# Introduction

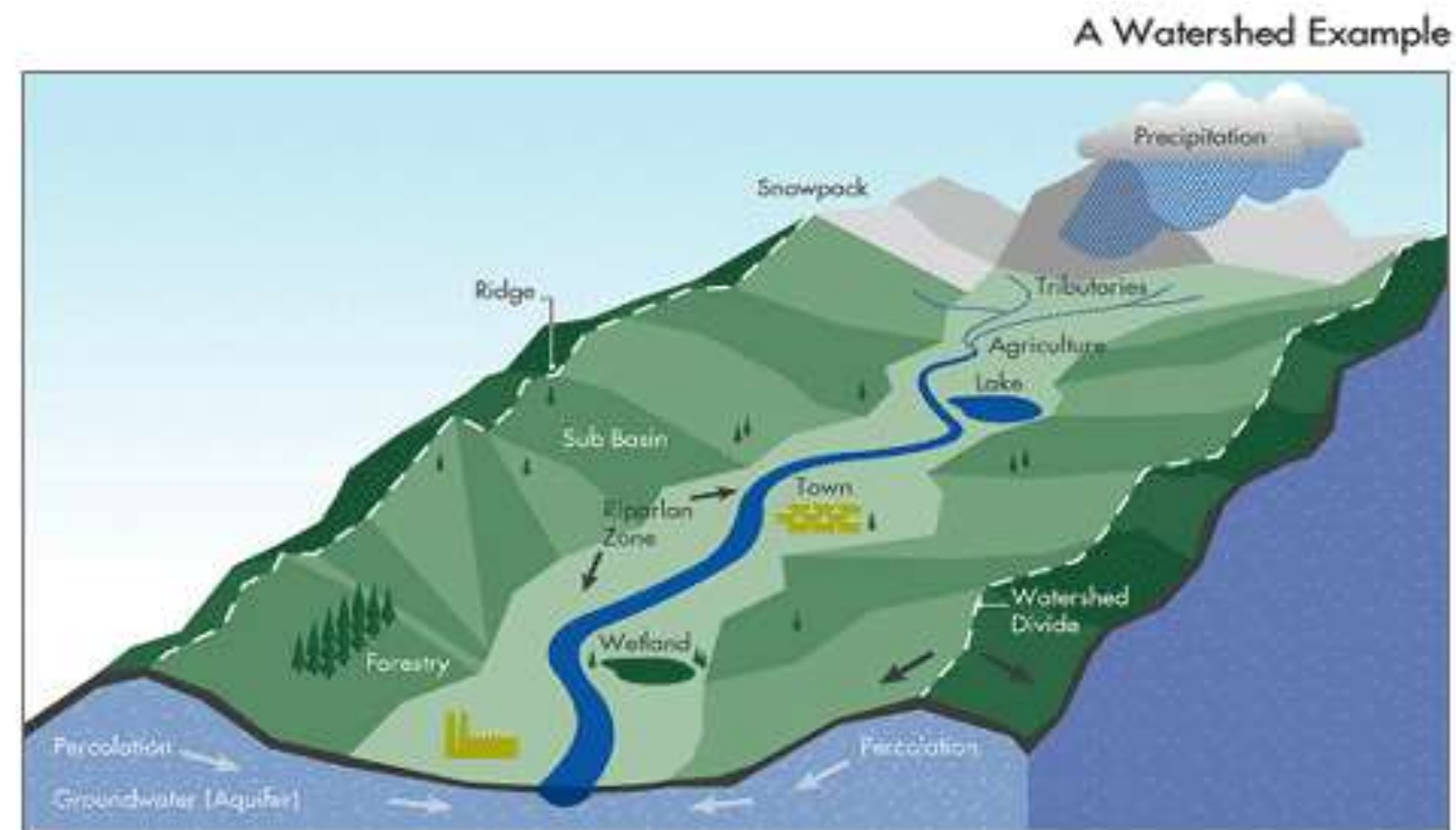
- Much of the water comes from rainfall and stormwater runoff.
- The quality and quantity of stormwater is affected by all the alterations to the land-- mining, Agriculture, roadways, urban development, and the activities of people within a watershed.
- Watersheds are usually separated from other watersheds by naturally elevated areas.





# Introduction

- The word ‘watershed’ has different meanings. In British English it means a ridge line or a line which shows slopes in two different directions on its either sides.
- A ridge line is also a line connecting the points of highest elevation in a terrain. Therefore, ridge line is also known as ‘watershed line’ or a ‘surface water divide’.
- In colloquial language the word ‘watershed’ is used to describe a path breaking event.





# IMPORTANCE OF WATERSHED



- Watersheds are important because the surface water features and stormwater runoff within a watershed ultimately drain to other bodies of water.
- It is essential to consider these downstream impacts when developing and implementing water quality protection and restoration actions.
- Everything upstream ends up downstream.
- We need to remember that we all live downstream and that our everyday activities can affect downstream water





# IMPORTANCE OF WATERSHED



- The Watershed Development Programme (WDP) initially envisaged as a measure for poverty alleviation and improved livelihoods has gained even greater importance in light of the worldwide recognition of its effectiveness in combating climatic change.
- In India several Ministries namely, Ministry of Agriculture, Ministry of Rural Development and Ministry of Environment and Forests have been involved in Watershed Development Programs with substantial variation in their approaches.
- The Ministry of Rural Development had been coordinating sector-wise flagship schemes such as IWDP, DPAP under Watershed Development Programmes.
- The main objective of the WDP was to improve water conservation, irrigation facility, and land use pattern leading to increased agricultural productivity in drought prone and desert prone areas.
- Poverty reduction, better livelihoods and improved bio-physical and socioeconomic environment would bring about sustainable development.



# CATCHMENT AREA

- In geography, a catchment area is an area of land that collects water after rainfall, typically bounded by hills. Water flows down into these areas and collects into rivers and streams.
- A catchment is an area of land where water collects when it rains, often bounded by hills. As the water flows over the landscape it finds its way into streams and down into the soil, eventually feeding the river. Some of this water stays underground and continues to slowly feed the river in times of low rainfall. Every inch of land on the earth forms part of a catchment.



## Size of Catchment Area

It can be small or big

It can be of 10 to 20 hectares or size of river basin







# COMMAND AREA



- **The area over which irrigation water flows by gravity is known as the command area in irrigation.**



**River Basin**



**Command Area**