

## Chapter 6: Sustainable Management of Tropical Rainforests and Mangroves

### ONE What are the environmental functions of Tropical Rainforests ?

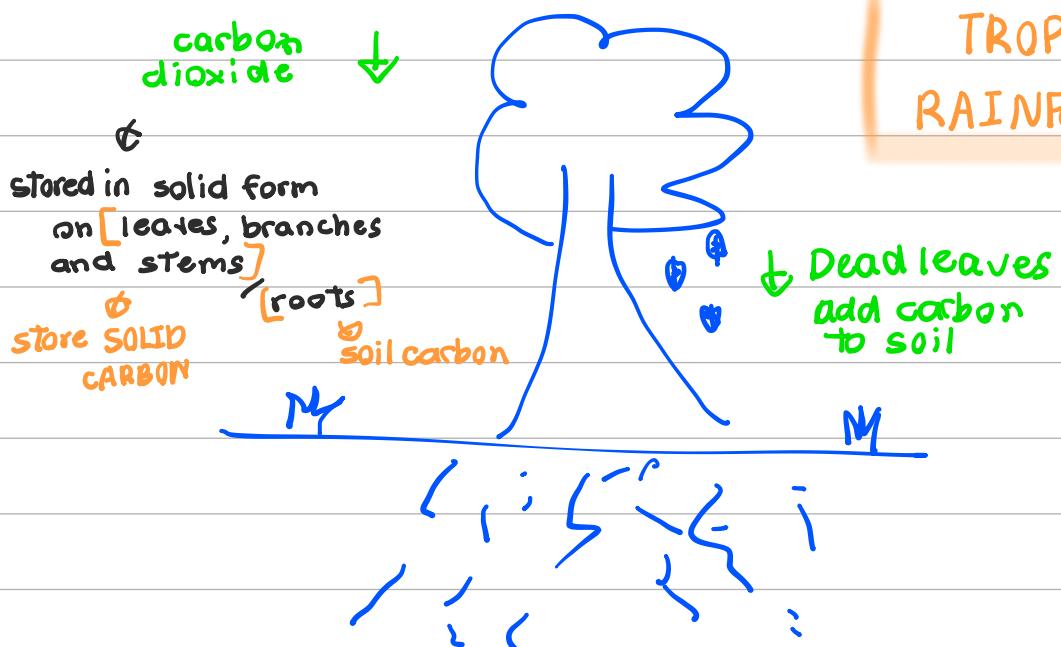
- ↳ generate oxygen
- ↳ contribute to carbon storage
- ↳ provide habitats for diverse animal life
- ↳ provide protection from soil erosion
- ↳ provide protection from coastal erosion

How do tropical forests generate oxygen ?



How do tropical forests contribute to carbon storage ?

\* → through respiration & decomposition



## MANGROVES

\* → soil is WATERLOGGED

↓  
poor in oxygen

→ few bacteria ✓  
break down  
carbon stored

\* MANGROVES : 60-80 kg of carbon ← more effective

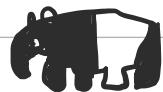
RAINFORESTS : 20-59 kg of carbon

How do tropical forests provide habitat for animals ?

### TROPICAL

### RAINFORESTS

\* warm climate + abundance of rainfall +  
food sources



Examples of species : - Malayan Tapir

- Yacare caiman → crocodile
- Poison dart frog
- Piranha
- Blue-throated toucanet

## MANGROVES

(broken down by bacteria)

食 物 链 : Dead leaves & Branches

eaten by

otters, crocodiles,  
tigers

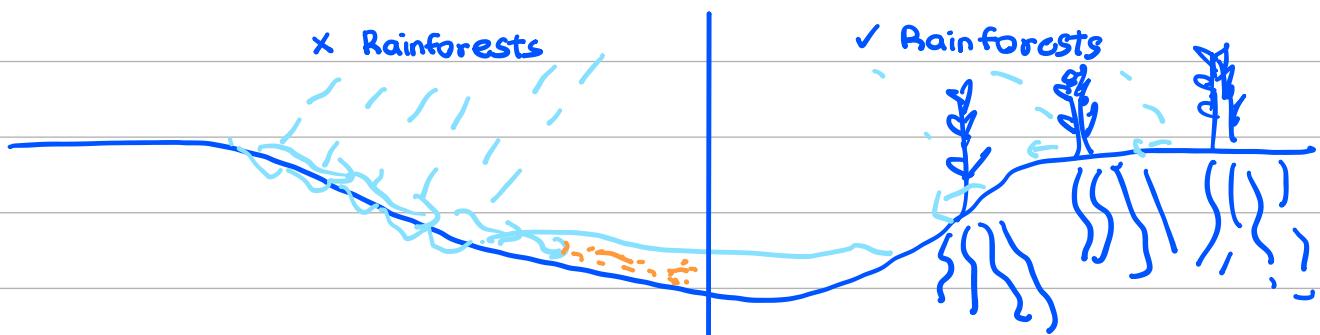
fishes, crabs, shrimps eaten by

\* Breeding grounds for young fish

↳ dense roots

↳ provides shelter for them

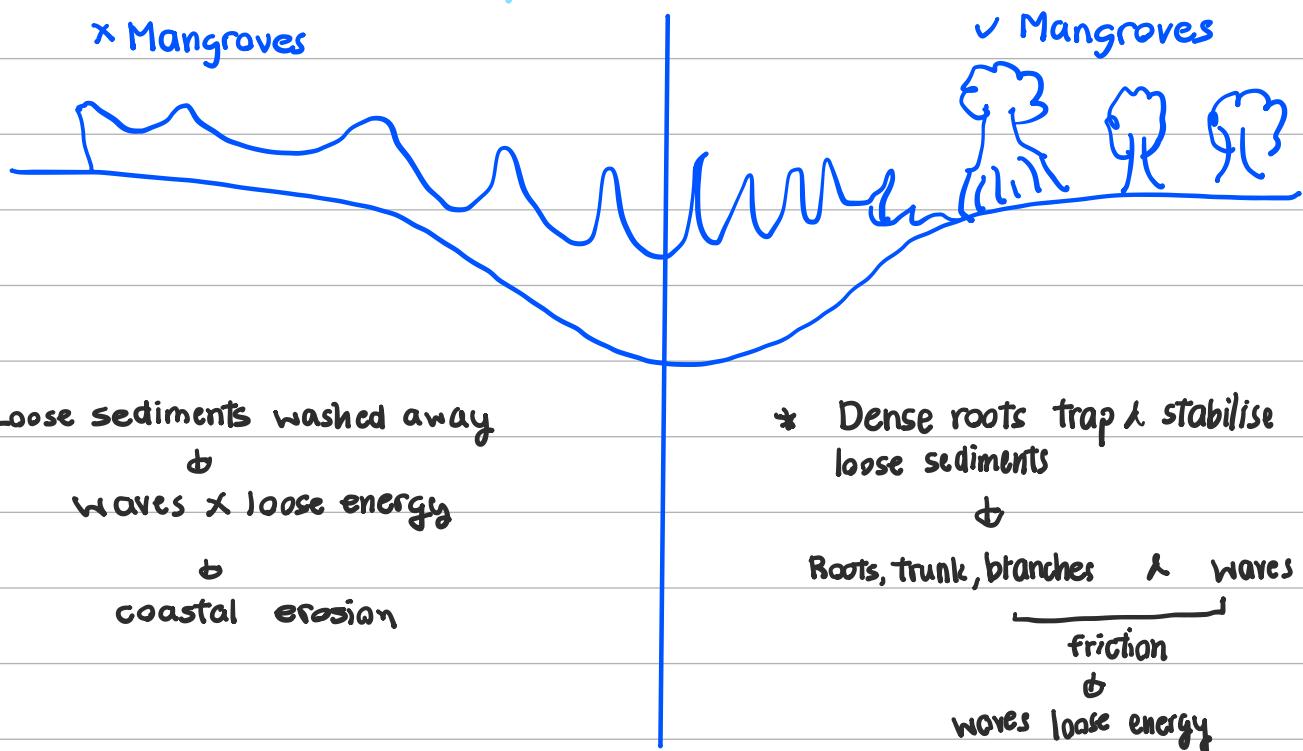
## How do Tropical rainforests help prevent soil erosion?



- \* Raindrops → force
  - ↳ soil detached
  - ↳ little infiltration
  - ↖
  - high surface runoff
  - ↳
  - !! soil erosion!!**

- \* Plants slow down rain
  - ↳ roots bind soil
  - ↳ harder to erode
  - ↳ hit soil with less force
  - ↳ higher infiltration
  - ↳ reduce surface runoff

## How do mangroves help prevent coastal erosion?



- \* Loose sediments washed away
  - ↳ waves × loose energy
  - ↳ coastal erosion

- \* Dense roots trap & stabilise loose sediments
  - ↳ Roots, trunk, branches & waves
  - ↳ friction
  - ↳ waves loose energy

## TWO: How are tropical rainforests used by people?

- \* 4 benefits :
  - habitation
  - recreation
  - source of food
  - source of raw materials

### HABITATION

- ↳ many people live in tropical rainforests

### RECREATION

- ↳ get close to nature
- ↳ activities :
  - trekking
  - camping
  - birdwatching

### SOURCE OF FOOD

- ↳ many fruits grow
  - nuts
  - fruits
  - leaves / seed

### SOURCE OF RAW MATERIALS

- ↳ teak / mahogany / rosewood
- ↳ metals / minerals