

Mangroves: tides, roots and coastal life

Trace how tidal mudflats, specialised roots and detritus sustain deltaic coasts

• Tidal mangrove ecosystem cycle

01 1 · Tides and waterlogged soil

- Mangroves occupy coastal intertidal habitats.
- Tides move water, sediment and nutrients through the habitat.
- Salinity and low-oxygen soils create different challenges from dry land.



02 2 · Roots modify the habitat

- Some species have breathing roots; others have prop or stilt roots.
- Root systems can slow currents and trap sediment.
- Adaptations vary by species; not every mangrove has every root form.



03 3 · Litter supports food webs

- Microbes break down fallen leaves into detrital material.
- Detritus supports invertebrates and wider coastal food webs.
- Sheltered roots provide feeding and nursery habitat for many aquatic species.



04 4 · Regeneration and protection

- Propagules or seedlings establish where water, sediment and other conditions suit them.
- New growth renews the habitat; healthy belts can reduce erosion and wave energy.
- The Sundarbans lies in the Ganga–Brahmaputra–Meghna delta across India and Bangladesh.



REMEMBER Mangrove conservation needs suitable tidal flow and habitat conditions, not planting alone.