

Microorganisms are the sole inhabitants of these environments and bacteria and predominant

Most of the bacteria are either attached or transiently suspended in these environments

Aquifers: saturated zones of soil found beneath the dry zones

- Underground aquifers serve as a major source of potable water

Types of Aquifers

1. **Shallow aquifers**: these are closely connected to the earth's surface. Receive water from rainfall
2. **Intermediate aquifers**: within the range of 300m of the soil surface.
 - Have slow rate of flow
 - Major source of drinking water and irrigation
3. **Deep aquifers**: beyond the range of 300m
 - Anaerobic, very slow flow rate
 - Not directly charged with surface rainfall

Microbial status of Groundwater

Bacteria remain more or less same, 10^7 cell/g of sediment

Viruses, protozoa, fungi

Shallow aquifers: aerobic heterotrophic bacteria

Deep aquifers: includes...

- Aerobic and anaerobic chemoautotrophs
- Methanogens
- Sulfate-reducers