

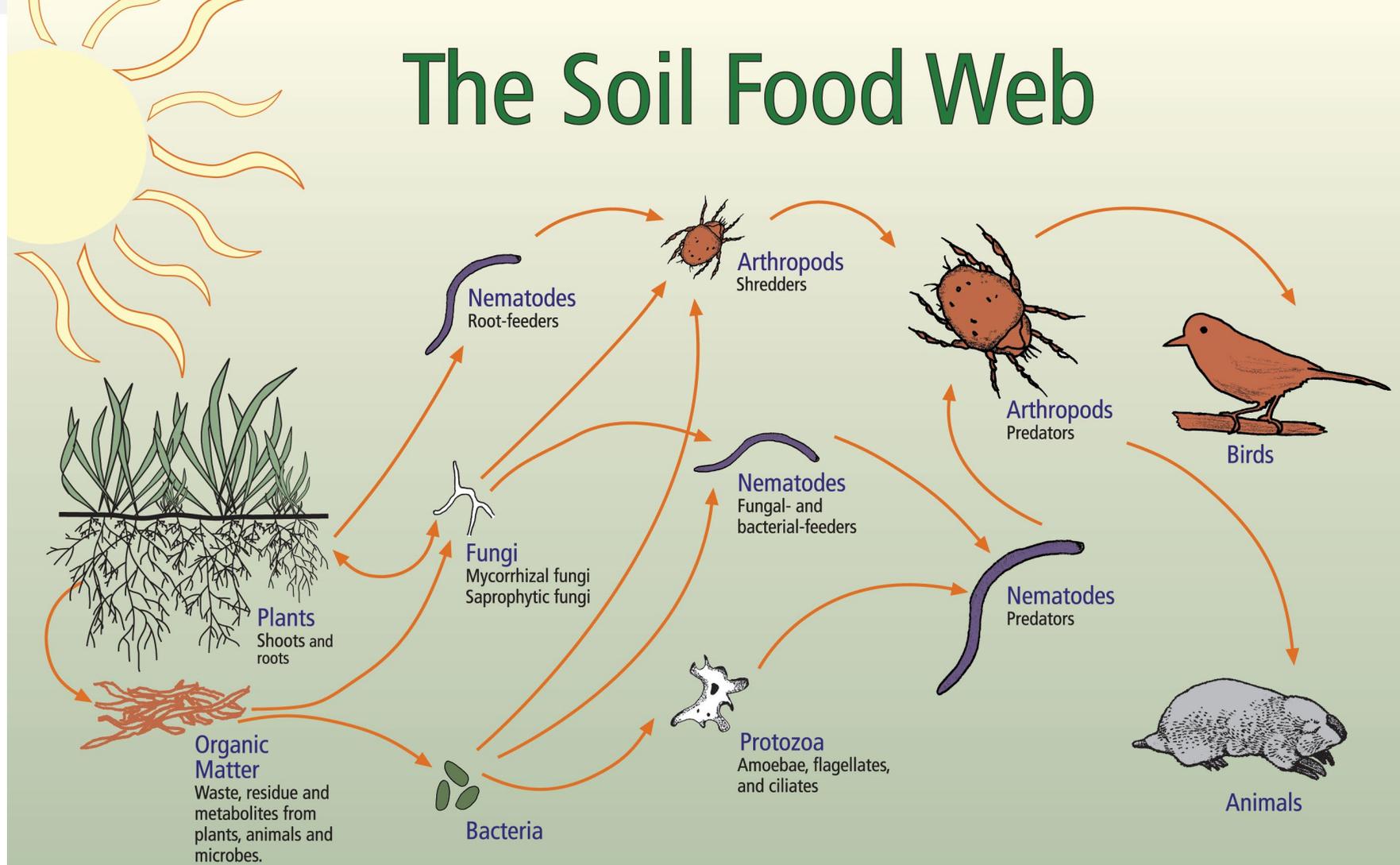


Soil Biology Introduction

How to foster optimal soil health

Introduction to the Soil Food Web

The Soil Food Web



First trophic level:
Photosynthesizers

Second trophic level:
Decomposers
Mutualists
Pathogens, Parasites
Root-feeders

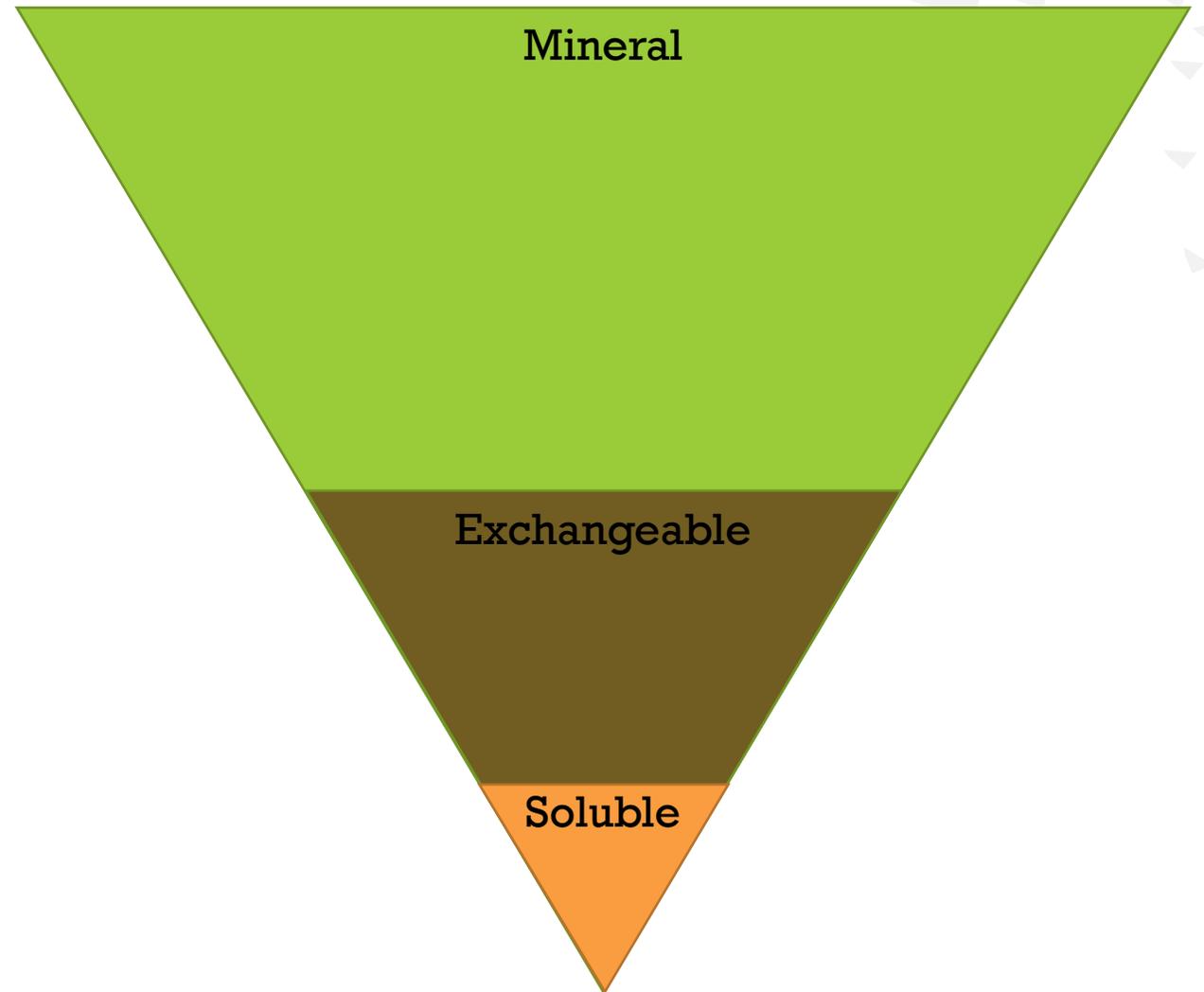
Third trophic level:
Shredders
Predators
Grazers

Fourth trophic level:
Higher level predators

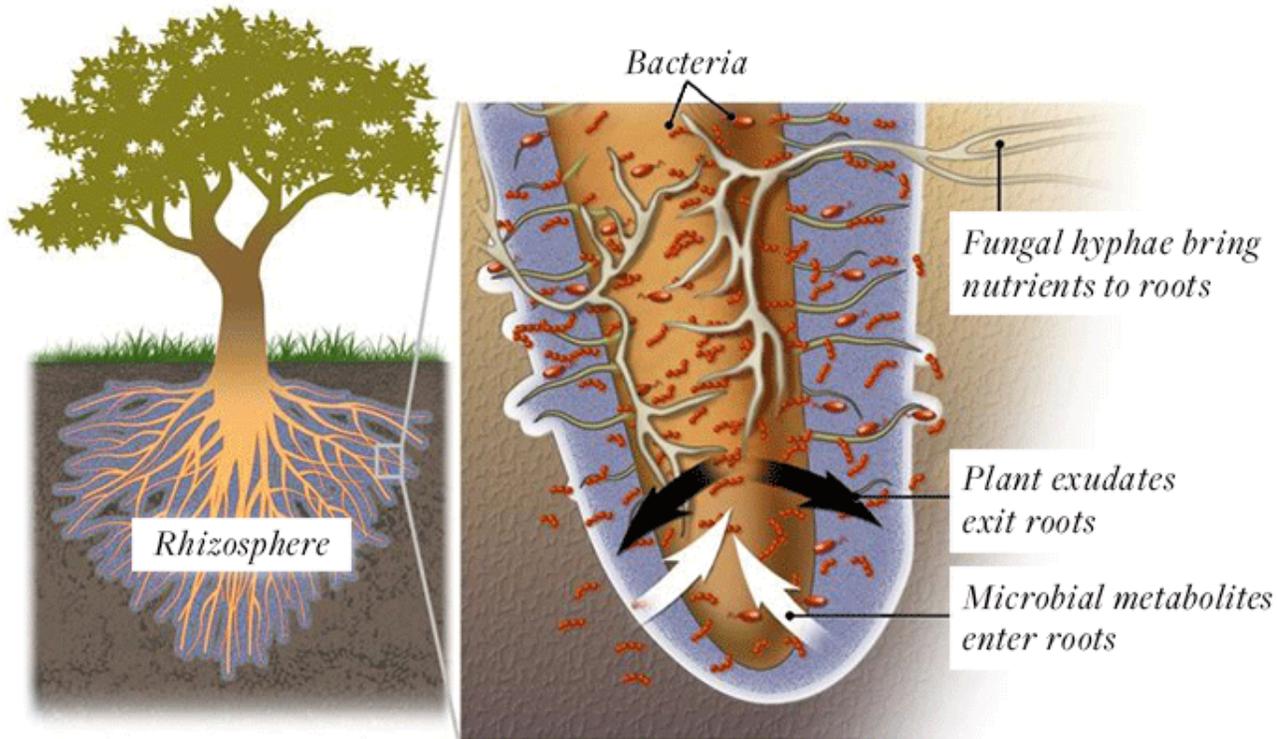
Fifth and higher trophic levels:
Higher level predators

Nutrient Pools

- Mineral
 - Total Extractable
 - Not available to the plants
- Exchangeable
 - Weakly attached to the soil
 - Easy to make soluble
- Soluble
 - Dissolved in solution
 - Plant available



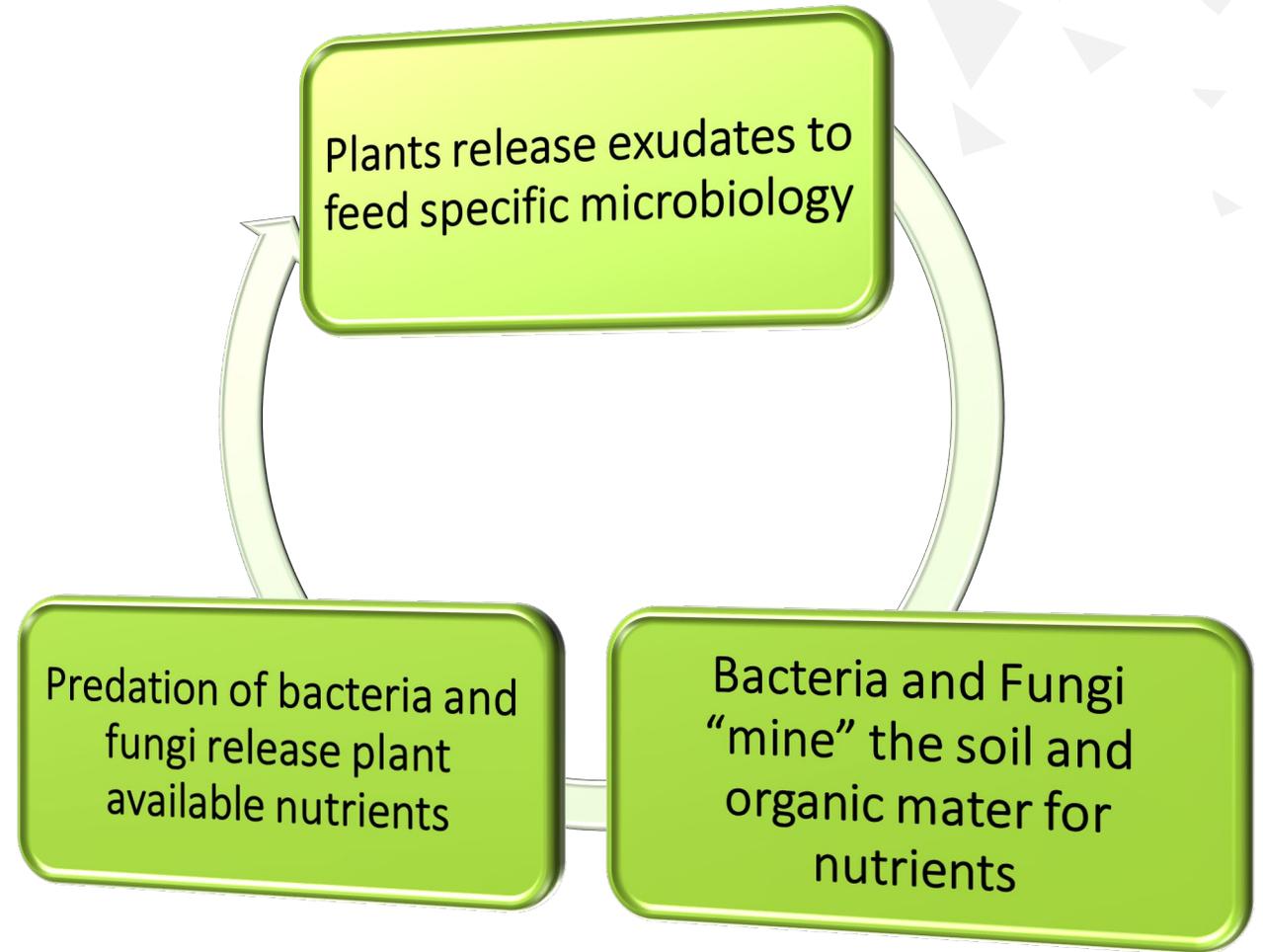
Plants Drive the Biology



- Plants have a controlling effect on the types and quantity of the soil biology
- Plants “feed” the biology
 - Exudates are made up of sugars, carbohydrates, and proteins
- A significant amount of energy is exerted to provide exudates to the soil

Nutrient Cycling

- Soil biology plays an essential role in nutrient cycling
 - Enzymatic functions of bacteria and fungi strip nutrients from the Mineral and Exchangeable pools
- Nutrients are held up in the biology – they must be cycled to make available to the plant
- All of the soils in the world contain the necessary nutrients for plant life



Why Compost and Compost Amendments?

- Purpose: Increase the quantity and diversity of microbiology to the soil and the plant
- Benefits
 - Optimize nutrient cycling
 - Build Soil Structure – increases water retention
 - Helps prevent disease and pest pressure
- Can be applied in physical (compost) or liquid (extract / tea) form
- Essential tools in converting from conventional to biological methods
- Compost comes in a wide variety of biological quality



Thank You



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