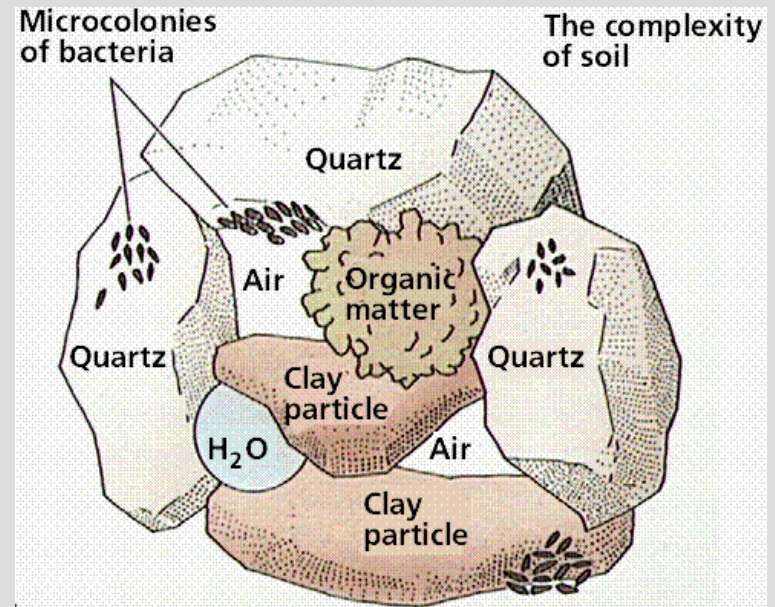


# Soils Defined by USDA

Natural body that occurs on the land surface, occupies space, and is characterized by one or both of the following:

- Horizons formed by pedogenesis (additions, losses, translocations, transformations).
- The ability to support rooted plants in a natural environment.



Dirt is soil removed from it's natural environment!



# Why Soils are Important

**Great integrator:  
all parts of ecosystem**

*Snapshot of  
geologic, climatic,  
biological, and  
human history*

**Waste decomposer**

**Carbon Sink!**

**Source material for  
construction,  
medicine, art, etc.**

**Filter of water  
and wastes**

**Essential natural resource**



**Medium of crop  
production**

**Producer and  
absorber of  
gases**

**Medium for  
plant  
growth**

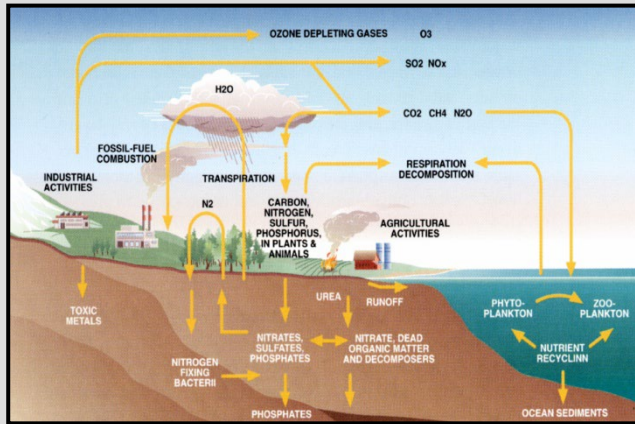
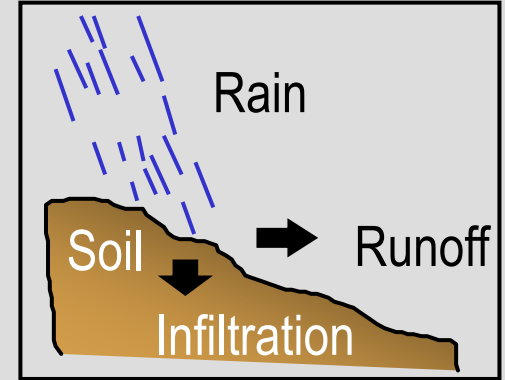
**Home to organisms  
(plants, animals and  
others)**

# Soils Perform Vital Functions



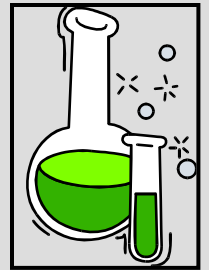
**Sustaining plant and animal life below and above the surface**

**Regulating and partitioning water and solute flow**

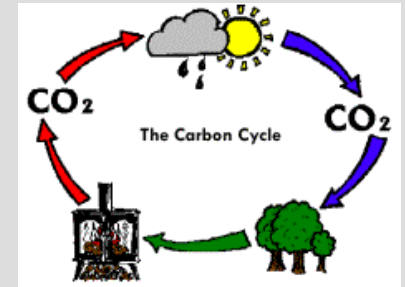


**Filtering, buffering, degrading, immobilizing, and detoxifying**

**Storing and cycling nutrients**



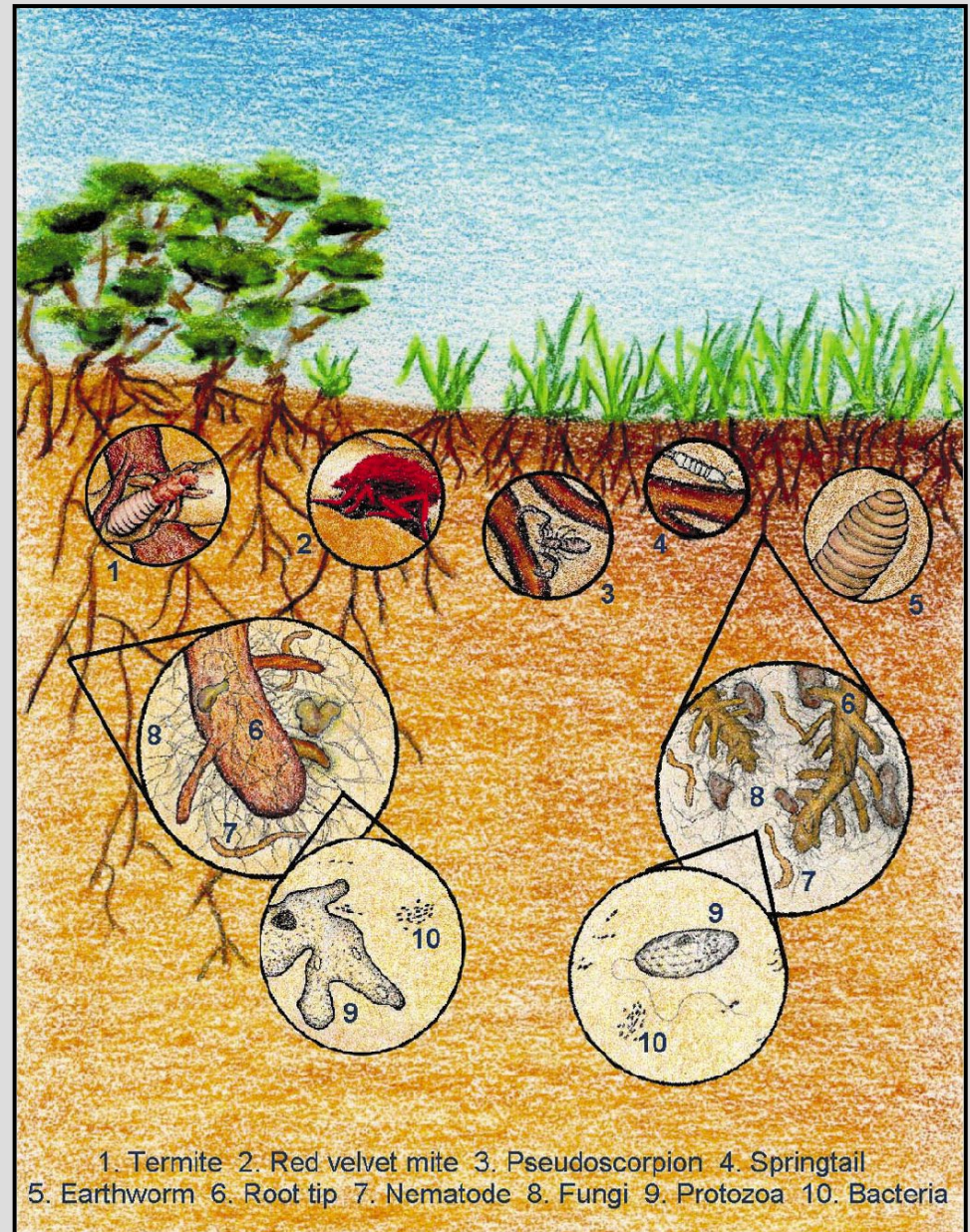
**Providing support to structures**



**Store Carbon ~ 2,700 Gigatons!**

# Soil is the Basis of the Ecosystem

The living systems occurring above and below the ground surface are determined by the properties of the soil. We often ignore the soil because it is hard to observe.



1. Termite 2. Red velvet mite 3. Pseudoscorpion 4. Springtail  
5. Earthworm 6. Root tip 7. Nematode 8. Fungi 9. Protozoa 10. Bacteria

# Soils Support Life

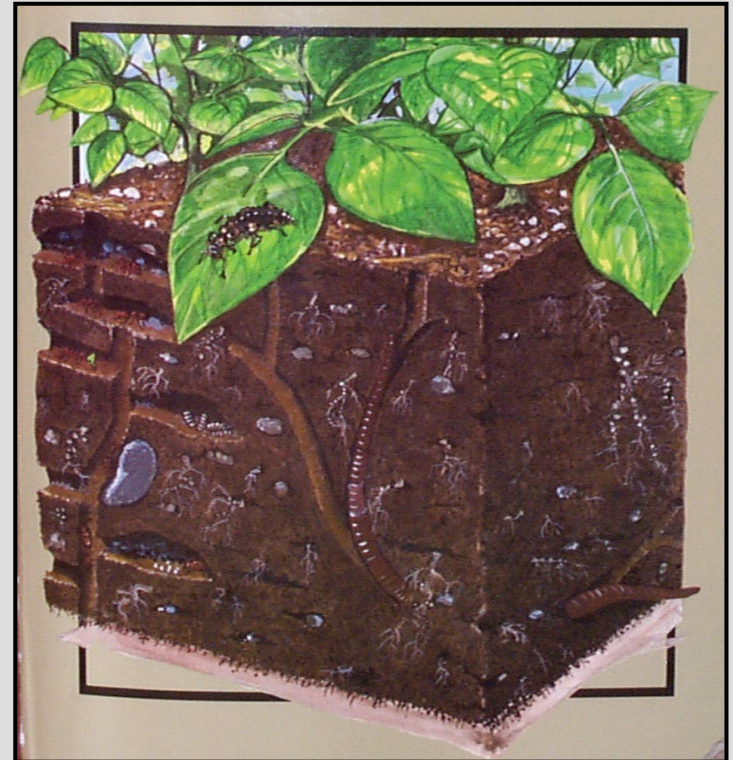


## Organism Types

bacteria  
fungi  
protozoa  
nematodes  
arthropods  
earthworms

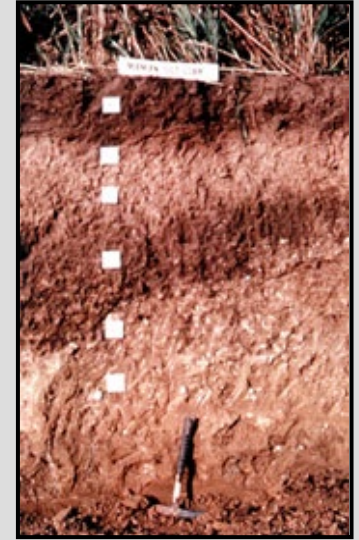
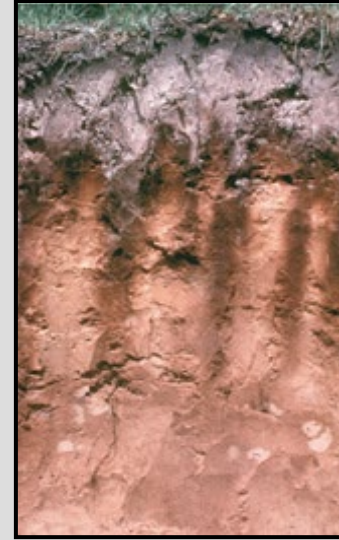
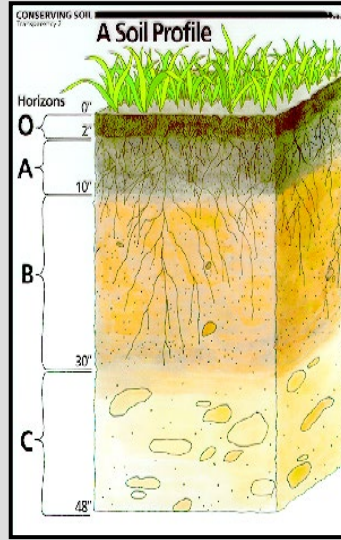
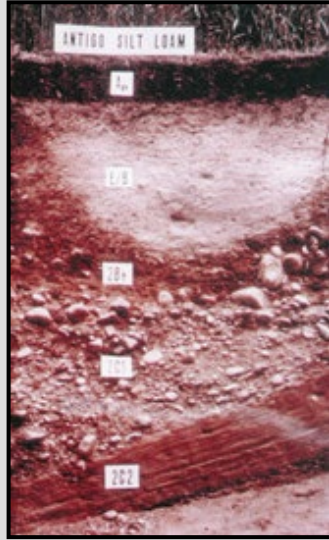
## Roles & Benefits

decomposition  
release nutrients  
create pores  
stabilize soils



# Soils Have Unique Physical, Chemical, and Biological Properties Important to Their Use

color  
texture  
structure  
consistence  
roots  
pores  
other features



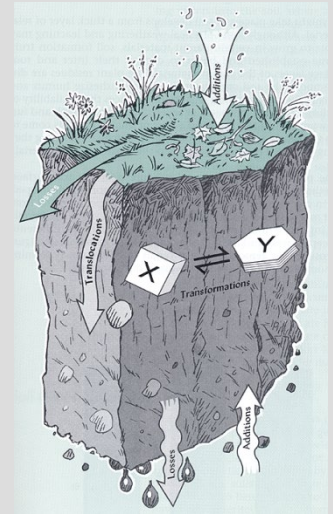
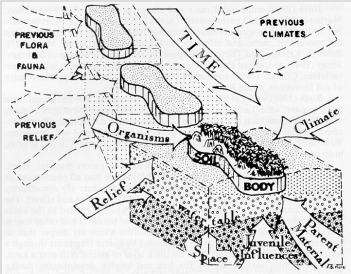
**Soil** is a natural body of solids, liquid, and gases, with either horizons, or layers or the ability to support rooted plants.

**Pedology**, the study of soil, is a unique discipline.

# How do Soils Form?

Biota

Climate



Parent Material

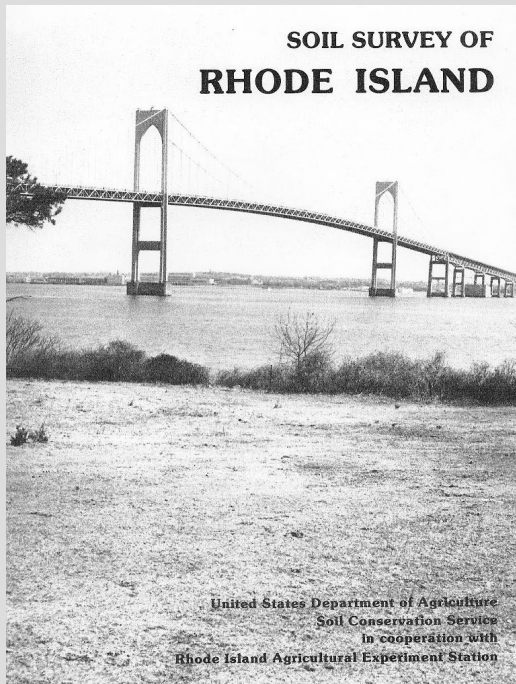
Topography

**Soil**

(The first four factors over) Time

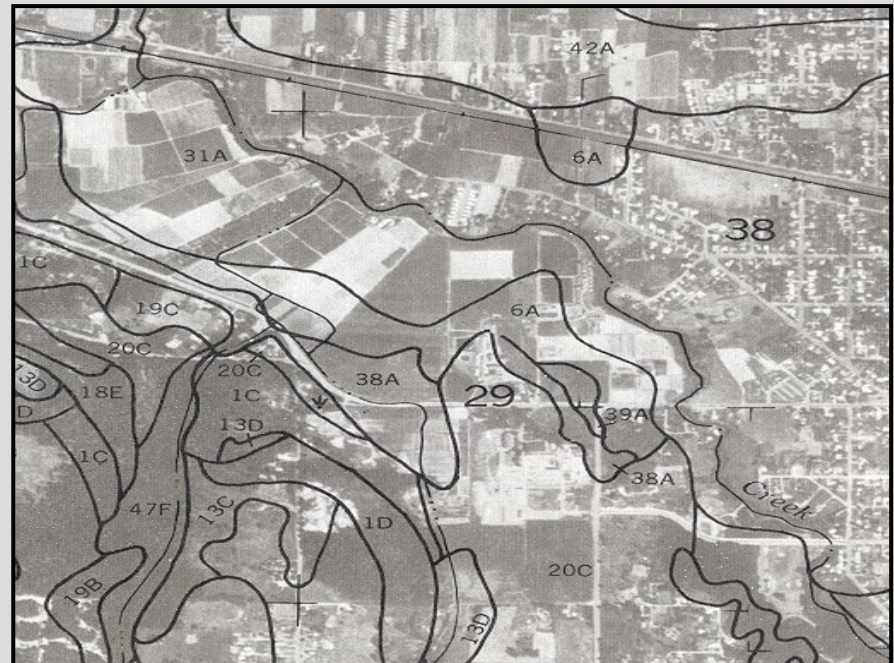
These five factors work together to create a unique soil profile made of layers called horizons.

# Soil Survey is a Scientifically-Based Inventory



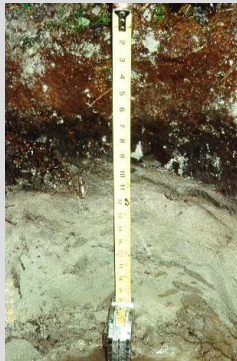
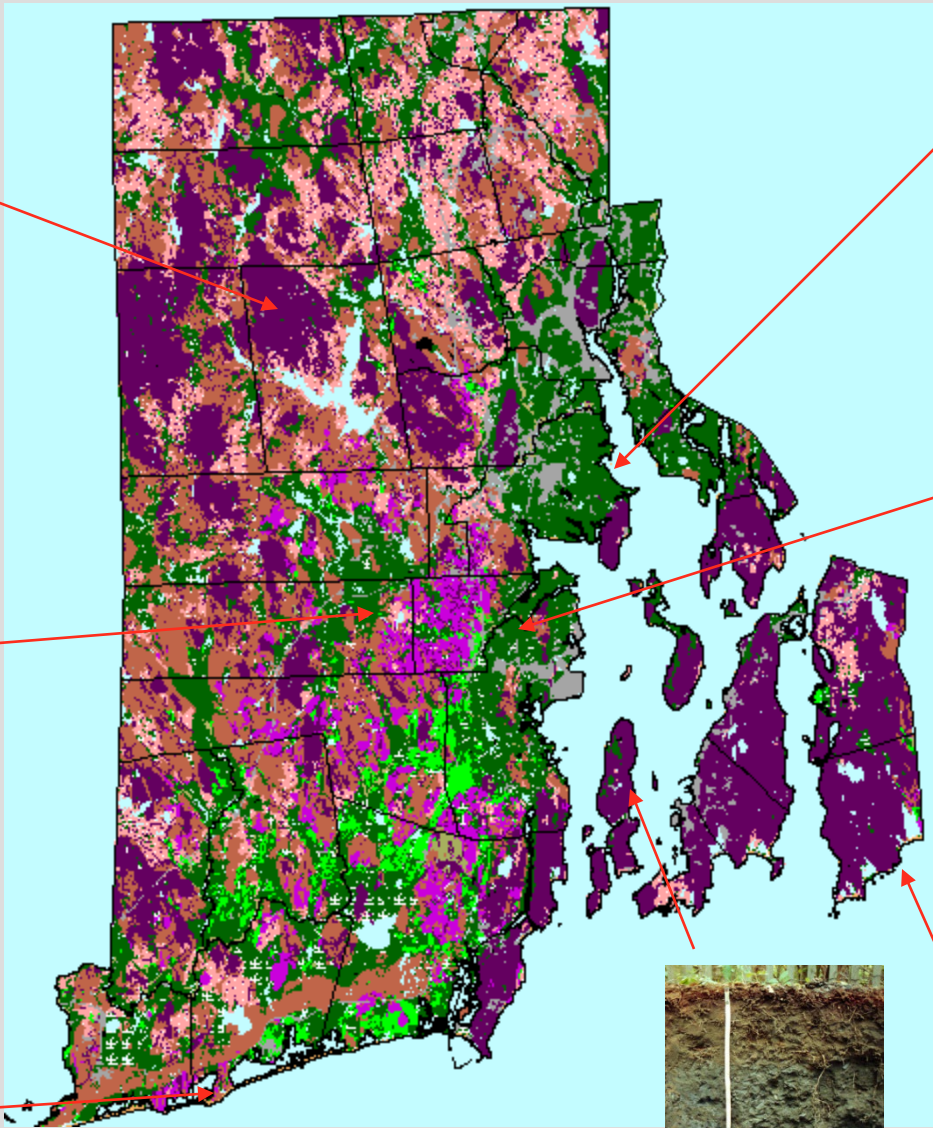
**A soil survey includes maps, descriptions, properties, climate, and interpretations. These are excellent sources of information.**

**95% of the United States have a soil survey completed.**





# Rhode Island Soils



150 different soil map units!