

Biosphere Study Sheet

Study content from Chapters 29 – 37 in your text, but especially:

The Biosphere as a System

Ecosystems

***Structures of Ecosystems**

Biotic components of ecosystems

Producers

Consumers

Herbivores, Carnivores, Omnivores

Decomposers

Abiotic components of ecosystems

Water, sunlight, oxygen, soil, climate

Food chains, food webs, food pyramids

Carbon cycle

*******Biomes**

Be familiar with the eight biomes and their characteristics. Note adaptations flora and fauna have made to survive in these biomes.

Coniferous Forest

Temperate Rainforest

Tropical Rainforest

Desert

Grassland

Tundra

Temperate Deciduous Forest

Mediterranean Chaparral

Humans – A Damaging Influence

Wetlands

Mangroves

Coral Reefs

Wildlife Corridors

Pesticides and Herbicides

Acid Rain and Global Warming

****Forests of the World**

Importance of Forests in the Ecosystem

Loss of the world's forests

Deforestation in the Amazon

Reasons for loss of tropical rainforest

Consequences for loss of tropical rainforest

Temperate Rainforest
Boreal Forest

Climate Changes Trigger Biome Changes

Effects of Global Warming

****Soil**

Soil forming Processes
Formation of a soil profile
Main soil types

***Soil Degradation**

Human actions
 Over-cultivation
 Over-grazing
 Poor irrigation practices
 Deforestation
Desertification
Soil erosion by wind
Soil erosion by water
***Ways to combat wind erosion and water erosion

Erosional Hotspots

Read page v-vii in your textbook. Pay particular attention to #2 and #3

Terms you should know:

Biotic
Abiotic
Bioaccumulation
Ecosystem
Translocation
Leaching
Capillary Action
Infiltration
Transpiration
Food Web
Chernozem
Laterite
Sierozem
Podzol
Xerophyte
Megatherm
Hydrophyte
Microtherm
Stubble Mulching

Terracing
Shelterbelts
Fallow Fields
Horizon
Humus
Leaf Litter
Contour Ploughing
Parent Material
Desertification
Tundra
Hydrophyte
Organics
Soil Degradation

Other concepts:

Carbon Cycle
Desertification
Soil Types
Soil Erosion
Soil and Processes

~~Choice questions~~

1. Define leaching.

2. Name the soil found throughout the coniferous forest area of North America.

3. The laterite soils of the rainforest are among the most infertile soils in the world, yet they support the most luxuriant vegetation on the planet. Why does this soil quickly become infertile when the natural vegetation is removed and grass is planted by cattle ranchers?

4. At which location on the diagram below would one find the humus layer? (circle the right answer)

A B C D

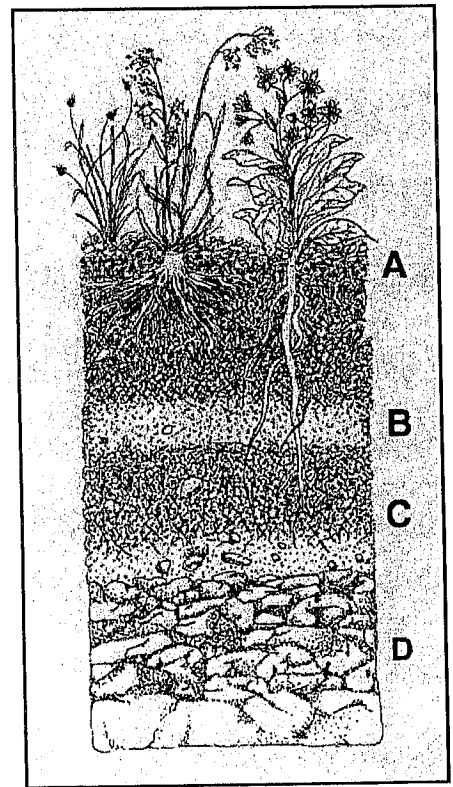
5. Define humus.

6. In which area of the soil in the diagram on the right do nutrients accumulate in if a soil is subjected to capillary action?

A B C D

7. Name one soil which is affected by capillary action.

8. Why do tundra soils have such poor soil profiles?

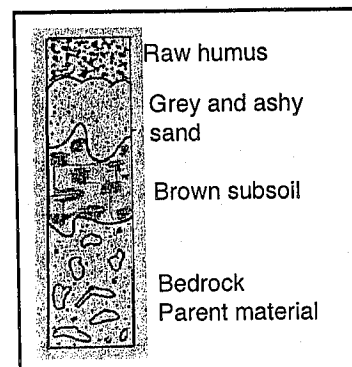


1. Define capillary action.

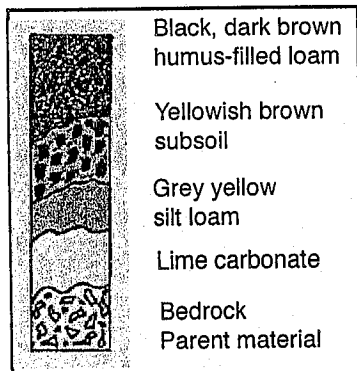
2. Name one soil which is greatly affected by capillary action.

3. Name the soil type shown by the profile on the right.

4. Why do desert soils have such poorly defined profiles?



5. The chernozem soil profile below has a thick dark humus layer on top.



Give 1 reason why this upper layer in chernozem soil is so thick.

6. Define humus.

7. Define leaching. _____

8. Which of the following has the greatest effect on the soil forming process of laterite soil ?
a. capillary action OR b. leaching

Topic: Soil degradation and erosional hotspots (A)

Name _____

1. Poor irrigation practises is one human action that can accelerate soil degradation. List 2 other human actions that can cause severe soil degradation.

2. The Canadian Prairies and the Great Plains of the U.S. suffer from both wind and water erosion. List 1 reason why these areas are so susceptible to wind and water erosion.

3. List 2 popular ways to combat wind erosion.

4. List 1 method used to combat water erosion.

5. Explain why the Himalayan foothills rank as one of the major erosional hotspots in the world.

6. Explain how poor irrigation can severely damage soil.

Unit 4: Biosphere Quiz

Topic: Soil degradation and erosional hotspots (B)

Name _____

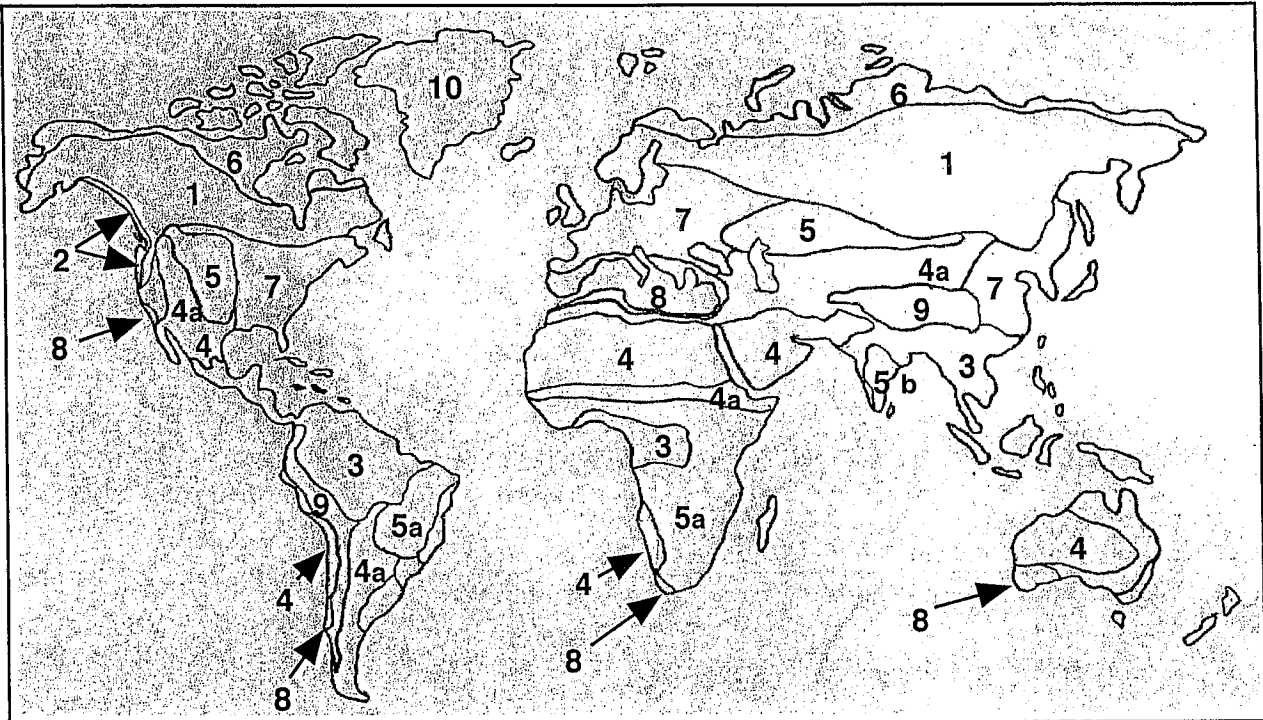
1. Give 1 reason why the prairie region of Canada is so prone to wind and water erosion.

2. Explain how terracing combats water erosion.

3. Human actions have greatly accelerated the soil degradation problems in the Sahel, the southern fringes of the Sahara Desert. List 3 human actions which have contributed to the soil degradation problems in this region.

4. If you were a farmer in the Great Plains region of North America, how would you slow the wind in order to minimize damage to your crops? List 2 ways.

5. Organic matter in soil plays a key role in combating wind and water erosion. Explain why.



Refer to the biome map above when answering the questions below. For each map location listed below:
1. Name the biome 2. Name the climate type 3. Name the soil and sketch the soil profile, label each layer in your diagram 4. Describe how the vegetation has adapted to the climate

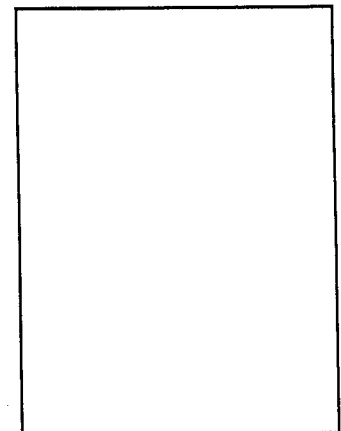
1. Map location 1

Biome: _____

Climate: _____

Soil type: _____

Plant adaptations:



Soil profile

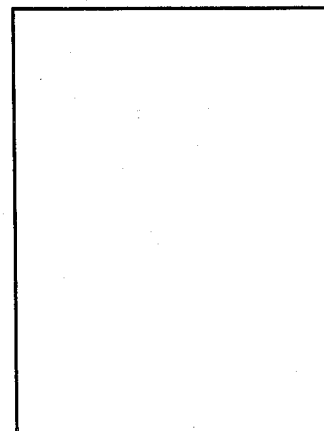
2. Map location 2

Biome: _____

Climate: _____

Soil type: _____

Plant adaptations:



Soil profile

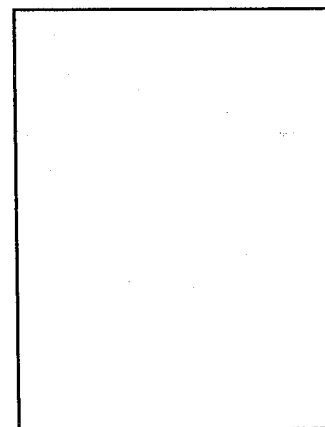
3. Map location 3

Biome: _____

Climate: _____

Soil type: _____

Plant adaptations:



Soil profile

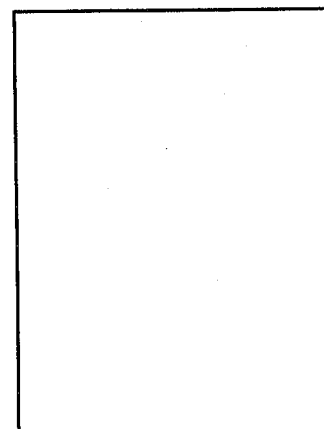
4. Map location 4

Biome: _____

Climate: _____

Soil type: _____

Plant adaptations:



Soil profile