**University of the Philippines Manila**

**College of Arts and Sciences**

**Department of Biology**

**BS Biology**

**Biology 160**

**Ecology**

**STUDY GUIDE: WEEK 2**

**Learning Objectives**

At the end of this week, you should be able to:

1. Describe the effect of wind and pressure on living organisms
2. Discuss how climate affects the distribution of organisms on earth
3. Differentiate macroclimates from microclimates
4. Discuss the importance of air, water and soil in the biotic component of the ecosystem
5. Discuss problems affecting water and soil that can be crucial to the survival of organisms
6. Explain how soil conservation methods work

**Activity 1**

Begin by reading and understanding the powerpoint presentation on Lecture 4. Organisms and the Abiotic Environment : Wind, Pressure and Climate. The link is provided in the VLE. The outline of the lecture is shown below.

**Lecture 4 Organisms and the Abiotic Environment: Wind, Pressure and Climate**

1. Wind as an Abiotic Factor
2. Effect of wind
3. Prevailing wind patterns that affect ocean currents
4. Importance of the Gulf Stream
5. Atmospheric circulation
6. Windward vs leeward sides of islands and mountains
7. Sea breeze vs land breeze
8. Pressure as an Abiotic Factor
9. Effect of pressure on organisms as reflected in altitudinal variations
10. Adiabatic cooling explaining the decrease in temperature with altitude
11. Climate as an Abiotic Factor
12. Differences between climate and weather
13. Main climatic regions
14. Temperature and seasons of the year
15. Physiognomic method to analyze climate and elevation
16. Microclimates
17. Why microclimates occur
18. Examples of microclimates

**Activity 2** After reading the powerpoint presentation of Lecture 4. Organisms and the Abiotic Environment: Wind, Pressure and Climate, try to answer the questions below.

1. How do ocean currents affect life in the marine environment?
2. Why is climate a significant determinant in the distribution of life in this planet?
3. Give other examples of microclimates aside from what are given in the presentation.

**Activity 3.** Read and understand the powerpoint presentation on Lecture 5. Organisms and the Abiotic Environment – Air, Water and Soil. The link is provided in the VLE. The outline of the lecture is shown below:

**Lecture 5: Organisms and the Abiotic Environment: Air, Water and Soil**

1. Air as an Abiotic Factor
2. Composition of air
3. Dependence of organisms on air
4. The atmosphere and its layers
5. Water as an Abiotic Factor
6. The three states of water
7. Distribution of the earth’s water
8. Importance of water for plants and animals
9. The water cycle
10. Problems on water such as shortage and consequences of desalination
11. Effect of Water on Plants
12. Importance of precipitation
13. Effects of drought
14. Adaptations of plants
15. Soil as an Abiotic Factor
16. Composition of soil
17. Color and texture affecting soil types
18. Layers of the soil
19. Uses of soil
20. Soil conservation methods

**Activity 4** After reading and understanding the powerpoint presentation for Lecture 5. Organisms and the Abiotic Environment – Air, Water and Soil, try to answer the following questions.

1. How important is air to living organisms?
2. In what ways would plant suffer from climate change?
3. How important is soil to living organisms and why should its integrity be conserved?

**END OF WEEK 2**