

Field Ecology Notebook Assignment

“The discipline of the writer is to learn to be still and listen to what his subject has to tell him”

- Rachel Carson

Field Ecology is designed to teach general scientific methods, procedures, and thinking skills, as well as specific methods and procedures used to study plants and animals in their natural setting. In addition, observation of natural processes often helps us gain an appreciation for them.

Objectives:

Demonstrate the ability to apply scientific methods to solving problems.

Demonstrate proper methods of observing and recording scientific data.

Demonstrate the ability to measure in units and graph data correctly.

Assess the interrelationships of living and non-living factors in a specific habitat.

Procedure:

Select a one-meter square area near your home (NOT your backyard!) that is in a natural setting, preferably an area that will not be mowed or walked through.

Make observations at least once a week from October to December 18th.

A weekly checklist of activities to be performed at each site visit is provided on the following pages.

Every entry will be signed by you with the following honor pledge and your signature.

Honor Pledge: On my honor, as a student, I have neither given nor received unauthorized aid on this academic work.

Logistics:

All data will be collected in a standard bound composition notebook. **Pages will be numbered consecutively in ink (front and back of each page).**

Create **data tables in the front of your notebook** for: rainfall, temperature, change of plants in number, change of plants in type, change of animals in number, change of animals in type.

Notebooks will be checked on Tuesdays & Wednesdays and returned on Thursdays.

If you do not bring your notebook to be checked, you will lose 10% percent of the value of that assignment for each day it remains out.

Week 1 (18 points)

Supplies needed: thermometer, rain gauge, compass, ruler, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius. (1)

Setup rainfall gauge and record rainfall in last 24 hours (in centimeters) from this website:

<http://www.anythingweather.com/current.aspx?id=2983> (1)

Detailed description of your site location (nearest buildings, trees in area, any water sources like streams or ponds and their location) (5)

Detailed drawings of your site (include a 'close-up' view as well as a 'bird's eye' view). (5)

Use a compass to indicate the orientation of your site (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Sign your entry with the Honor Pledge.

Week 2 (20 points)

Supplies needed: thermometer, rain gauge, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius (1)

Record rainfall (cm) since last visit and note number of days that have passed. For example, 2 cm in 3 days. (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Identify at least one **invasive species** (plant, animal, fungus, etc.) into genus and species. Justify your identification. Give the common name and species name (in correct format). (2)

Draw a detailed image of the identified organism. Be sure to include the features that helped you identify it. (2)

Sit, watch, and listen for at least 10 minutes. Record your observations and note any changes that have occurred since your last visit. (5)

Sign your entry with the Honor Pledge.

Week 3 (16 points)

Supplies needed: thermometer, rain gauge, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius (1)

Record rainfall (cm) since last visit and note number of days that have passed. For example, 2 cm in 3 days. (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Identify at least one organism (plant, animal, fungus, etc.) into genus and species. Justify your identification. Give the common name and species name (in correct format). (2)

Draw a detailed image of the identified organism. Be sure to include the features that helped you identify it. (2)

Sit, watch, and listen for at least 10 minutes. Record your observations and note any changes that have occurred since your last visit. (5)

Sign your entry with the Honor Pledge.

Week 4 (20 points)

Supplies needed: thermometer, rain gauge, camera, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius (1)

Record rainfall (cm) since last visit and note number of days that have passed - for example, 2 cm in 3 days (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Identify at least one organism (plant, animal, fungus, etc.) into genus and species. Justify your identification. Give the common name and species name (in correct format). (2)

Draw a detailed image of the identified organism. Be sure to include the features that helped you identify it. (2)

Sit, watch, and listen for at least 10 minutes. Record your observations and note any changes that have occurred since your last visit. (5)

Take at least one high quality photograph of your site. Make sure your thermometer and rain gauge are visible. Place this image in your notebook at the end of this week's entry. (5)

Sign your entry with the Honor Pledge.

Week 5 (20 points)

Supplies needed: thermometer, rain gauge, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius (1)

Record rainfall (cm) since last visit and note number of days that have passed - for example, 2 cm in 3 days (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Identify at least one organism (plant, animal, fungus, etc.) into genus and species. Justify your identification. Give the common name and species name (in correct format). (2)

Draw a detailed image of the identified organism. Be sure to include the features that helped you identify it. (2)

Sit, watch, and listen for at least 10 minutes. Record your observations and note any changes that have occurred since your last visit. (5)

Sign your entry with the Honor Pledge.

Week 6 (26 points)

Supplies needed: thermometer, rain gauge, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius (1)

Record rainfall (cm) since last visit and note number of days that have passed - for example, 2 cm in 3 days (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Identify at least one organism (plant, animal, fungus, etc.) into genus and species. Justify your identification. Give the common name and species name (in correct format). (2)

Draw a detailed image of the identified organism. Be sure to include the features that helped you identify it. (2)

Sit, watch, and listen for at least 10 minutes. Record your observations and note any changes that have occurred since your last visit. (5)

Add a food source (unprocessed vegetable material works well, i.e., apples, bananas, carrots, etc.) and note what you've placed in your site, its current state (what kind of shape is it in - recently cut up into 2 inches pieces, etc.), and where you placed it in your site. (2)

Visit your site within 24 hours and record how much of the food source is left and the state it is in. If none is visible, repeat 'experiment' within the week. (2)

Create a total of 6 data tables and graphs for data you've collected so far. You may use MS Excel or graph paper. (6)

Sign your entry with the Honor Pledge.

Week 7 (21 points)

Supplies needed: thermometer, rain gauge, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius (1)

Record rainfall (cm) since last visit and note number of days that have passed - for example, 2 cm in 3 days (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Identify at least one organism (plant, animal, fungus, etc.) into genus and species. Justify your identification. Give the common name and species name (in correct format). (2)

Draw a detailed image of the identified organism. Be sure to include the features that helped you identify it. (2)

If your food source from last week remains, record how much of the food source is left and the state it is in. (1)

Sit, watch, and listen for at least 10 minutes. Record your observations and note any changes that have occurred since your last visit. (5)

Sign your entry with the Honor Pledge.

Week 8 (21 points)

Supplies needed: thermometer, rain gauge, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius (1)

Record rainfall (cm) since last visit and note number of days that have passed - for example, 2 cm in 3 days (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Identify at least one organism (plant, animal, fungus, etc.) into genus and species. Justify your identification. Give the common name and species name (in correct format). (2)

Draw a detailed image of the identified organism. Be sure to include the features that helped you identify it. (2)

Sit, watch, and listen for at least 10 minutes. Record your observations and note any changes that have occurred since your last visit. (5)

Review previous entries and find at least three detailed observations of interactions among organisms. Underline each in pen and record the pages on which they are found. One of these interactions may come from this week's visit. (6)

Sign your entry with the Honor Pledge.

Week 9 (25 points)

Supplies needed: thermometer, rain gauge, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius (1)

Record rainfall (cm) since last visit and note number of days that have passed - for example, 2 cm in 3 days (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Identify at least one organism (plant, animal, fungus, etc.) into genus and species. Justify your identification Give the common name and species name (in correct format). (2)

Draw a detailed image of the identified organism. Be sure to include the features that helped you identify it. (2)

Sit, watch, and listen for at least 10 minutes. Record your observations and note any changes that have occurred since your last visit. (5)

Sign your entry with the Honor Pledge.

Week 10 (25 points)

Supplies needed: thermometer, rain gauge, notebook, pencil

Record date and time of visit. (1)

Record temperature in degrees Celsius (1)

Record rainfall (cm) since last visit and note number of days that have passed - for example, 2 cm in 3 days (1)

Count the number and types of plants at your site - record this information in your notebook (2)

Count the number and types of animals at your site - record this information in your notebook (2)

Identify at least one organism (plant, animal, fungus, etc.) into genus and species and justify your identification. Give the common name and species name (in correct format). (2)

Draw a detailed image of the identified organism. Be sure to include the features that helped you identify it. (2)

Sit, watch, and listen for at least 10 minutes. Record your observations and note any changes that have occurred since your last visit. (5)

Describe the soil at your site, including a description of texture, a moisture rating, a color description and the soil content with clay/silt/sand percentages. (5)

Sign your entry with the Honor Pledge.

Final Entry - Summary of Changes Recorded

Review each of your entries and use the data recorded to create SIX data tables and SIX graphs:

change of plants in number
change of plants in type
change of animals in number
change of animals in type
temperature
rainfall

Graphs should be x-y scatter plots with appropriately labeled axes, units, and titles. Each should be completed on either **graph paper or in MS Excel and printed**. Graphs should be pasted in your notebook - NOT stapled or 'shoved in' as loose-leaf paper. (18)

Write a thorough, detailed entry regarding the changes you saw in each of these factors over time, as well as other observed changes you noted during your visits to give a picture of how your plot changed these last three months. (20)

Optional Extra Credit - ATTACH SCORING GUIDE TO NOTEBOOK

NOTE: Points are given based on quality of these extra credit entries. See scoring guide for detail.

Two or more additional photographs

At least one set of temperature variations from *morning* to *afternoon* to *night* on the same day

At least one set of audio or video recordings from *morning* to *afternoon* to *night* on the same day

At least one set of descriptions subdivided into levels (for example, animals found at ground level, animals 30 cm above ground, animals 5-10 cm below ground).

Personal thoughts and comments with some depth to them recorded at least once a week **for over half the weeks**.

Observations more than once a week **for over half the weeks**