

Workshop “Scientist for one day”

Activity: Linear Transects

I. Introduction

Scientists around the world are strongly interested on the tropical rainforest. Many of them are looking for answers to complex questions. However, most of the time, even basic issues are unsolved, as for example regarding researchers’ workplace: the classification and amount of living species. Therefore, part of the scientific research related to the tropical rainforest focus on its flora and fauna’s composition, usually through samplings of plants and animals that are inventoried subsequently. Afterwards, researchers come up with information to classify species. The methodology to be applied depends upon the characteristics of the organisms under study and the purpose of the research. The present workshop will develop one of these methods.

II. Objectives

Main Objective

To develop specific scientific activities throughout a basic analysis of vegetation from the tropical rainforest to experience the researcher’s daily work.

Specific Objectives

1. To select the location of the linear transects, practicing the scientists’ considerations to develop a sampling activity.
2. To determine the vegetal composition of a specific study area at the Biological Station La Selva to quantify the species.
3. To compare the results from different linear transects in order to identify the most abundant species found within the studied area.

III. Materials and Methodology

Materials:

1. Field note pads
2. Pencils
3. Big sized plastic bags
4. Masking Tape
5. Flagging Tape to mark plants
6. Permanent markers and markers for whiteboard
7. Compass
8. Nylon cords of 164 ft long
9. Digital camera
10. Laptop with Internet connection

Fieldwork:

The field work applies the sampling methodology known as linear transects which consists on enclosing a perimeter 164 ft long and 6.5 ft wide. Participants classify, collect, and count the different morphospecies inside the transect perimeter.

A. Transects:

After numbering the transects, there is a random selection. The amount of selected transects will depend upon the number of work groups and time available to perform the activity.

Transects should be 164 ft long and 6.5 ft wide within a distance of 164 ft from each other, guided by the trail's sticks, which will become the starting point from the trail through the forest (Figure 1).

The working area will be marked with flagging tape, respecting the length and width of each transect.

B. Morphospecies:

The members of each work group will identify the different morphospecies taking into consideration its morphology: leaf's shape and color, bark's texture, kind of flowers, and fruits, etc.

C. Gathering:

A sample of every morphospecies must be picked up, labeled, and numbered with masking tape and permanent marker before being stored in a plastic bag. The material gathered will be taken to the laboratory for a further identification and classification of the most common morphospecies. If the sample cannot be picked up, the guide will help to record its description. Digital photographs can help to identify plants.

Laboratory work:

The identification of the different morphospecies within the specific taxonomy category will be done with the help of the guides and the information of the project Digital Flora of La Selva (<http://sura.ots.ac.cr/local/florula3/index.htm>). Afterwards, every work group will analyze and present the results of their transect. Once the presentations concluded, the group will discuss the data and come to a conclusion about the activity.

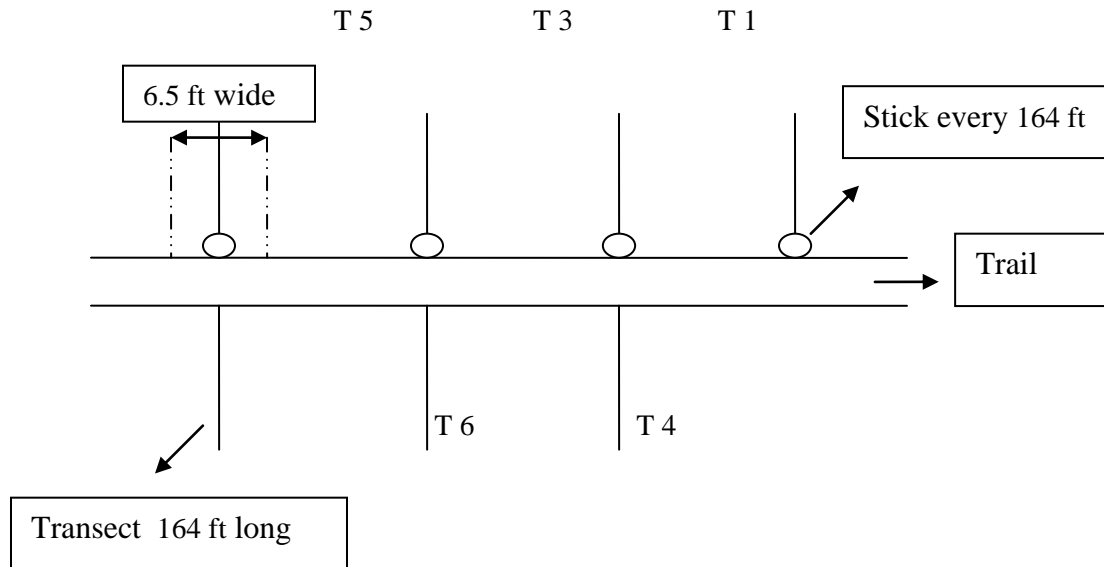


Figure 1. Description of the linear transects.

Amount or participants:

At least 6 participants, to form 2 work groups composed of 3 members each one.
No more than 20 participants, to form 5 work groups, with 4 members each one.

Public:

- Professors
- High school students
- Undergraduate students
- Tourists eager to learn

Recommendations:

- Ability to walk in the forest
- Disposition to wear rubber boots or hiking shoes
- Do not wear sandals
- Wear long pants

Schedule:

The activity lasts one day.

Schedule:

08: 00 am	Introduction
08: 30 am	Departure to the field
09: 00 am	Mark of the first transect with all the group for instructions
09: 20 am	Creation of work groups (3 participants)
10: 00 am	The guide will walk around the transects to answer questions and help
11: 30 am	Return to the biological station
12: 00 m	Lunch
01: 00 pm	Verify data and material gathered
01: 45 pm	Analysis of data and presentation of results
03: 00 pm	Discussion and conclusions
03: 30 pm	End of the activity