

Land Cover Walk

Activity Guide



Overview

Participants walk across and record differences in the types of land cover.

Purpose

- To gain experiential awareness of different kinds of land cover and how those change across the surface of the land.
- To gain experience in identifying land cover types before recording observations with the GLOBE Observer app on a mobile device.

Time

20-30 minutes (depending on the length of the walk selected by the educator)

Materials

- Record Sheets: One copy for each group of two or three participants (or each family), multiplied by the number of five-minute stops in the walk – whose length is determined by the educator. For example, if the walk is 20 minutes long, each group should have four copies of the worksheet. If the walk is 30 minutes long, each group should have six copies of the worksheet.
- Stopwatches (if participants do not have their own watches or other time keepers)
- Portable writing surfaces such as clipboards: one for each group of two or three participants
- Pens or pencils
- Printed maps of the walking route
- [Printable Land Cover Guide](#) (optional)

Background

Considering different kinds of land cover may be a new way of thinking for many people. Yet we transform the landscapes of our homes, neighborhoods, cities, and wild lands in ways that affect our quality of life and the well-being of the natural systems on which we depend. We grow food, log forests, build houses and driveways, grow grass, manage vegetation in recreational open spaces, and so on. Changes in land cover and land use have effects on water quality, the spread of invasive species, the nature of natural habitats and biodiversity, climate variability, and other environmental

factors. Seemingly small actions by individuals and families are taken on small scales such as yards, parks, and communities. When put together they constitute large changes on regional, continental, and global scales.

Instruments on satellites orbiting the Earth such as on NASA's Landsat and Terra satellites are enabling us to see these changes on a planetary scale and are alerting us to the importance of land cover change.

Preparation

- Consider the area available around the location of interest and identify the route of a 20 to 30-minute walk across different types of land cover.

Important: Always follow the laws of the area in which you will be walking. Before you begin, familiarize yourself with your environment and always collect data in a safe location and in a safe manner. Do not collect data on private land without permission where it is unlawful to do so, and do not trespass.

- Make copies of the record sheet provided

Steps

1. Gather the group of participants at a starting point for the walk. Ask them to consider and share what kind of land cover they are standing on and what kinds they see around them. Is it pavement? Grass? Bare soil or rock?
2. Explain the steps of the activity.
3. Organize participants in clusters of two or three people. Designate someone in each group to keep time (in five-minute increments) and someone to record the group's observations about the types of land cover being crossed (using the record sheet).
4. Hand out the clipboards, worksheets, pens or pencils, and stopwatches (as needed).
5. Have the group take a 20-30-minute walk that will take them across different types of land cover.
6. As participants walk, have the time keeper stop the group every five minutes.
7. Every five minutes of the walk, each group should decide on their answers to questions about characteristics about the land cover according to the record sheet provided, and the group's recorder should indicate their answers on record sheet.
8. Bring all the groups together where the walk ends. Ask participants to discuss their experience of identifying land cover types.

Record Sheet: Land Cover Types

Every five minutes of your walk, stop and record the land cover type. Choose the type indicated by A, B, C, D, E, F, G, or H below and circle the appropriate letter.

With each of those land cover types, indicate the specific type of land cover.

If your group observes more than one type of and cover at any given stopping point, choose the type that appears most dominant.

A. Trees

- Evergreen - Needle leaved
- Evergreen - Broad leaved
- Deciduous - Needle leaved
- Deciduous - Broad leaved
- Extremely dry
- Not sure which

B. Shrubs

- Closely spaced
- Loosely spaced

C. Herbaceous / Grassland

- Tall grass
- Medium grass
- Short grass
- Ferns or Flowers

D. Barren

- Dry salt flats
- Sandy
- Bare rock
- Perennial snowfields
- Glaciers
- Dirt/Other

E. Wetlands

- In freshwater river
- In salt / brackish tidal
- In freshwater lake or pond

F. Open Water

- Freshwater
- Marine

G. Cultivated

- Crops or pastures
- Orchards
- Other agriculture
- Athletic field, golf course, or cemetery

H. Urban

- Residential property
- Commercial property
- Roads and parking
- Other

Share your observations with scientists.

Satellites provide frequent, global observations of land cover, but can't always see the details. You can help by taking observations on the ground.

Download **GLOBE Observer** and share ground observations of land cover using the **Land Cover Tool**.



Extension: Comparing Land Cover Types

Overview

Participants consider differences between two of the kinds of land cover they have walked across, and the effects of those differences. For a hands-on activity comparing different types of land cover, see the Water and the Land Activity.

Purpose

To become more aware of the differences between land cover types and to consider their effects on the rest of the Earth system

Time

20 minutes

Preparation

Identify two types of land cover in the route that participants walked in Part 1. Make sure they are distinctly different in terms of water permeability and vegetation types (bare ground vs. well vegetated).

Discussion

Identify for participants the two types of land cover you have selected for this activity. Ask participants to describe those two and to share what distinguishes them from each other. As needed, prompt them with questions such as the following:

- How did the plant cover differ between the two land cover types? Was it taller in one land cover than another? Was it diverse in species or was it mostly one species of plant?

This is important because generally if there is variation in the height of vegetation, there will be micro-environments each with its own set of light, temperature, and moisture conditions, and so that variation will be conducive to biological diversity.

- As you moved from one land cover type to another, did you notice any changes in air temperature?

Areas with tall shade plants tend to be cooler than those without.

- Were there plants with flowers or fruits that insects and birds might feed on?

This will make a difference in the ability of insects and birds to live there.

- Were there places where wildlife such as mice and rabbits or larger animals might find shelter and hiding places?

This too will make a difference in the ability of animals to live there.

- When rain falls on these two different kinds of land cover, will the surface absorb the water or will the water run off without penetrating the surface?

Land cover type has effects on the cycling of water through a given area, and this is key to how that ecosystem functions. Water may be absorbed by certain kinds of surfaces such as those covered by vegetation quite readily, and it may run off other surfaces such as pavement without going into (permeating) the soil at all. Soil specialists use the terms, “permeable” and “impermeable” to describe that aspect of land surface types.