

Schoolyard Ecology: Using Track Plates to Identify Schoolyard Mammal Populations

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Track Plate Stations

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Questions Where are mammal populations higher, in the forest interior, forest edge, or in the riparian zone along the stream?

Which are more common visitors to the track plates, insects or mammals?

Overview Small mammals - mice, voles, chipmunks, squirrels - are one of the most abundant but least visible groups of organisms in schoolyard habitats. Since trapping and handling these animals requires special care, their populations can best be studied in a school setting indirectly, i.e., by measuring their activity. One way to do this is to set out graphite covered track plates in areas where you think there could be high mammal densities.

In this study, you will use track plates made from dark-painted aluminum flashing coated with graphite powder. Ideally, animals that are moving around and foraging on the forest floor will leave footprints in the graphite powder. By placing similar track plates in different areas you can ask questions about habitat preferences and population sizes.

- Materials**
- 4" x 6" pieces of dark-painted aluminum flashing
 - mineral oil
 - stakes and flagging to mark locations of track plates
 - permanent marker to number locations
 - graphite powder
 - field guides for identifying tracks of organisms
 - paper towel for applying mineral oil
 - measuring spoons (at least 1/8 and 1/4 tsp)
 - camera for recording results

Procedure → **Decide on what comparison you want to make and select site(s).**

1. Write down the population ecology question you want to address, along with your hypotheses.
2. After exploring the schoolyard, devise a scheme to address your question.
3. Select the site or sites you will need, trying to make sure conditions within the site(s) are as uniform as possible.

→ **Prepare the Track plates**

1. Put some mineral oil on a piece of paper towel.
2. Holding the edges, coat the top of each piece of flashing with a very thin layer of mineral oil.
3. Coat the entire surface of the flashing with a uniform layer of powder and carefully shake off excess.

→ **Place the track plates at the site(s).**

1. Place each track plate so that it sits flat on the ground. Take extreme care not to disturb the powder surface.
2. Each replicate should be in as similar a setting as possible.
3. Mark the location of each station with a stake and flagging, number the station and record the number and treatment.

→ **Collecting data.**

1. Examine each track plate.
2. Record your observations about the tracks at each site. Can you identify the animal(s) that visited? Can you quantify the number or amount of activity or tracks?
3. If possible, photograph each plate to identify tracks at a later time, keeping careful records of which station is which.