**Ground Spider Abundance and Diversity Sampling**

**Summer 2023**

**Field Methods**

Data Collection

To meet the goal of collecting species richness and abundance data, students will utilize three 10m long, 2m wide transects. To establish a transect students will use a measuring tape to run through the sampling area and systematically collect data within the established area.

1. Locate habitat of interest, based on class discussion. These can be areas along habitat gradients such as ecological or anthropogenically induced.
2. Choose area in which to establish the first transect, then record data on weather and habitat conditions. Utilize an anemometer or weather application to gather data on weather conditions. Habitat conditions can be recorded using best judgement and percentage for cloud and canopy cover. Proximity can be included by utilizing the measuring tape. Areas that extend the reach of the measuring tape can be noted as non-influential for the interests of this exercise. Other habitat observations may pertain to habitat of interest determined by class discussion, light pollution, proximity to nearest sampling group, experimental interruptions, etc.
3. In a group use the measuring tape to run a 10 m transect. One group member will be responsible for holding the tape and another will walk with the opposite end until the desired length has been established. Next place one flag at both ends of the transect. Ensure that there is at least 20 m between your group and the nearest group. The step can be initiated prior to weather and habitat data collection by establishing the beginning of the transect by placing a flag from more exact proximity measurements if so desired. See Figure 1 for a visual representation.

At least 20 m

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Group B

Group A

Figure 1.

1. Place headlamps, in beam mode, on the forehead, as close between the eyes as possible. Have one group member walk along the transect near the tape with arms outstretched to approximate a 2 m width. Have this student call out the number of eye shines present within the transect along this direction, record noting the cardinal direction in which the student is walking. Repeat the process in the opposite direction, recording the cardinal direction.

Eye shine occurs as the light from the headlamp’s beam is reflected in the spider’s eyes. The number of eye shines is indicative of the number of spiders present within the transect. For an example of the results of this method view Figure 2.



Figure 2. A dark fishing spider with visible eyeshine.

https://spiderid.com/picture/56744/

1. On the tables in Module Data Collection Sheetrecord the abundance of all spiders found within the transect.
2. Students will then locate three specimens within the transect with at least 1 m distance between organisms. This can be done by capturing them within specimen collection jars. iNaturalist, field guide, or dichotomous keys will be utilized to identify these organisms. Take pictures of all specimens with a mobile device, trying to capture the dorsal and ventral sides of the animal. Upload these photos to iNaturalist to capture geographical data. This can be uploaded while in the field; however, if there is not reliable internet connection this can be upload once the class has returned from the field.
3. Record the species data of the three specimens in Module Data Collection Sheet.Assign a number to the specimen, starting with one at transect 1 and ending with nine at transect 3. Record the measure along the tape at which you collected the specimen. Make a species guess and note the name of the group member who is responsible for uploading the information. The links to these observations will be required for data analysis.
4. Release specimens, collect all material aside from flags and repeat the process in two different locations. Be sure that the locations you choose have not been sampled by another group by identifying areas with flags. Once all locations have been sampled for the class remove the flagging.