Photoquadrats

Photoquadrats are photographs from the intertidal sized to fit the 12x12” square OPIHI quadrat frame. Photoquadrats allow students to practice taking data looking at pictures that contain similar organisms to what they will find on their field trips.

Using the photoquadrats, students can compare the two quadrat methods (point-intercept and percent cover). By trying out each method within the classroom setting, they have a chance to practice and ask questions about how to employ each technique. We have created data sheets to utilize during this comparison exercise similar to the ones your students will use on their field trips that list most of the species found in the pictures. This also allows the students to practice identifying the organisms they will find at the study site using ID cards or reference books in the classroom.

*Note that not all of the species pictured on the photoquads are in the Hoover identification books. For instance, the species of blennies and gobies (two types of fish) depicted on the photoquads are not identified in Hoover’s fish book. However, students can look in the book to get a general idea of the morphology of each of these types of fish. Blennies and gobies are the two most common types of intertidal fish and thus it is important that your students be able to identify the differences between each. Blennies have narrow bodies and are often seen peering from holes in the reef. They have a characteristic alert, curious expression. Intertidal gobies are small and very well-camouflaged. Gobies have compressed bodies and are blunt-headed.

What are the pros and cons of each quadrat method?

- **Percent cover within quadrats is a little slower, but you get more information. It allows you to account for every species present in a quadrat, but there is some uncertainty and a larger degree of error because you are estimating.**
- **Point-intercept quadrat gathers more information than point-intercept along a transect line, but it can miss species that aren’t very abundant if they are not under a point. However, it is very accurate, easy to replicate, and there is not much room for error as you only count what is under the point.**

Depending on time, groups of students can look at multiple photoquadrats. If one photoquad has been analyzed by multiple groups, each group’s data can be written on the board so the class can compare and discuss how similar data taken from the same picture is from different students groups. Slight differences are common and expected due to identification differences and different groups seeing things different ways. The same group, if they take data on the same photoquad tomorrow, will probably have slightly different data than the first day! This is the nature of sampling. However, if the data is very different on the same photoquad from different groups, the class should try and come up with ways to standardize their methods to narrow the difference gap between groups.

Photoquadrat Files
- How to Construct OPIHI Photoquadrats
- Photoquadrat Data Sheet (Point Intercept and Percent Cover)
- Photoquadrat Data Sheet (Point Intercept and Percent Cover – Squares)