


Density of Coverage

 <p>Field Based Investigations</p>	<p>Use this tool if you are interested in asking investigation questions like:</p> <ol style="list-style-type: none"> 1. How does the density of species vary in different places? 2. How does the physical environment (soil, leaf coverage, weather) affect the density of species? 	<p>We will gather data about:</p> <ol style="list-style-type: none"> 1. Which species are present at my observation location? 2. How does the density of species differ across three different places? 3. What relationships do I notice about density of species at each site?
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Why is density of coverage important to socio-ecological systems?: Use this protocol to explore density of coverage in three different places. In this investigation, *density of coverage* means how much of whatever you are investigating you observe in a specific area. In other words, how populated is the area with whatever it is you are investigating? This type of observation is useful for comparing how sites differ based on the physical environment or level of human impacts on species such as grass, weeds, insects, or soil structures. For example, you can compare a playground, to vegetation along a sidewalk, to a ball field.

Why does the density of coverage matter to my neighborhood--connecting to our “Should We” questions: Studying the density of organisms across different sites can help us understand the relationship between the natural and human-made physical environment with the diversity, abundance, and density of our observations. You can use this protocol to answer “Should we” questions such as “Should we line a walkway with gravel or grass” or “Should we stay on the sidewalk or take the shortcut across the field?”.



The investigation question we are asking is:

The “Should We” question we are exploring is:



Materials needed:	Directions:
<ul style="list-style-type: none"> <input type="checkbox"/> 4 popsicle sticks or straws <input type="checkbox"/> 4 pieces of string <input type="checkbox"/> pencil <input type="checkbox"/> The next page or blank paper <input type="checkbox"/> <i>Optional:</i> thermometer <input type="checkbox"/> <i>Optional:</i> magnifying lens 	<p>Choose something that you would like to focus on across three places. Such as a mix of grass and weeds, insects, rocks in soil, etc.</p> <p>Create a sampling grid.</p> <ul style="list-style-type: none"> ❖ Use the popsicle sticks or straws to create a square. ❖ Position two pieces of string vertically to create four even columns ❖ Position two pieces of string horizontally to form a grid with 16 even squares (see images on the next page). <p>Choose 3 different places to do your observations.</p> <ul style="list-style-type: none"> ❖ If you have a thermometer, record the temperature of the soil ❖ Repeat your observations across three sites. Use the charts below to record what you see. <p>All scientists repeat their observations so that they can say whether what they're seeing is unique to one place or time or not.</p>



Density of Coverage in Places

Location 1 _____ Temperature _____	Location 2 _____ Temperature _____	Location 3 _____ Temperature _____																																																
In the grid below, shade in the amount of coverage you see in your data collection frame. <table border="1" data-bbox="220 688 753 1230"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																	In the grid below, shade in the amount of coverage you see in your data collection frame. <table border="1" data-bbox="837 688 1371 1230"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																	In the grid below, shade in the amount of coverage you see in your data collection frame. <table border="1" data-bbox="1451 688 1984 1230"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																





<p>Turn your density into a percentage. (Number of squares covered / Total number of squares) x 100</p> $\frac{\quad}{16} = \quad \times 100 =$	<p>Turn your density into a percentage. Numerator: The actual coverage Demonator: Number of total squares in the grid.</p> $\frac{\quad}{16} = \quad \times 100 =$	<p>Turn your density into a percentage. Numerator: The actual coverage Demonator: Number of total squares in the grid.</p> $\frac{\quad}{16} = \quad \times 100 =$
<p>Circle the percentage of coverage in this location.</p> <p>Open = 10-39% Moderately Covered = 40-69% Closed= 70-100%</p>	<p>Circle the percentage of coverage in this location.</p> <p>Open = 10-39% Moderately Covered = 40-69% Closed= 70-100%</p>	<p>Circle the percentage of coverage in this location.</p> <p>Open = 10-39% Moderately Covered = 40-69% Closed= 70-100%</p>

