

ENVS 2000: Urban Field School – Lab 2: Sampling and Data Collection

----- EXERPT – NOT THE FULL ASSIGNMENT -----

Value: 10% of final grade

Date Assigned: April 30

Due Date: May 01 at **9:00 AM**

Submission: Dropbox on Brightspace

General Instructions

As an urban environmental researcher, you are interested in the extent of impervious surface cover on the North Common (a.k.a. the Commons). You use three methods to investigate the matter and compare the results. The first method is based on random sampling of path widths with the *a priori* assumption that asphalt paths are the only impervious surfaces in the Commons.

When conducting field research, it is important to keep your eyes and mind open. It is very likely that the complexities of real-world environments and realities of sampling and data collection will necessitate altering your research plan. Upon collecting the first dataset in the field, you have realized that there are likely other impervious surfaces beyond the paths. Moreover, you suspect that impervious surface cover is greater in some sections of the Commons than others. To address these concerns, you use a stratified, systematic sampling of impervious cover.

Lastly, you want to take advantage of computer-based tools and remote sensing imagery to look at impervious surface cover and compare with your empirical field data. You use the i-Tree Canopy tool and its point-based assessment of land cover to assess impervious surface cover in the North Common.

All questions must be answered as complete sentences and show all of your work where a question requires a calculation

Field Data Collection

Random sample of path widths:

- Small groups will each be assigned to path segments (e.g., path segment 1 on the attached vector map)
- As a group, measure the width of the asphalt path in centimetres and record it on your datasheet

- Record the orientation of your width measurement using the attached orientation map of the Halifax Peninsula
 - Randomly select a number between 1 and 1000 and use that number as the distance in centimetres between each measurement
 - There are many online random number generators you can access on your phone. For example, if you Google search 'random number generator', the Google web-based app will become available
 - Repeat this process until you have completed the entire path
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Stratified systematic sample of impervious cover:

- Small groups will each be assigned to a Commons strata (e.g., stratum A on the attached vector map)
 - As a group, lay a transect across your stratum and record its orientation in your datasheet using the attached orientation map of the Halifax Peninsula
 - Do a point measurement every 10 metres along the transect, recording whether the land cover is impervious or not impervious
 - When you have crossed your stratum, lay a new transect parallel and 10 metres away from the previous one
 - Repeat this process until you have completed the entire stratum
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