

From Field to Paper: The Mapping of Barking Dog Creek

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Overview

Barking Dog Creek, a small first-order stream on the forested campus of The Evergreen State College (TESC) in Olympia, WA was mapped using ESRI ArcMap 9.2 geographic information systems (GIS) software. The goal was to locate and document every tree and log within a 10 meter (32 foot) buffer of the stream. The maps will be useful in tracking long-term changes in the stream, and could be useful in studies looking at secondary succession and log decomposition, among other things. The data will also be used by computer scientists at TESC to develop forest-analysis software and create 3-D visualizations of the stream. Finally, it will be compared to maps generated using ground-based LiDAR (a 3-D digital imaging technique) to test digital data-gathering techniques against measuring tape and compass techniques of mapping.

Methods

- In Winter 2009 (Jan-Mar), permanent pivot points were established every 50 meters (164 feet) throughout the length of the stream; GPS coordinates were taken at each point. Each pivot point corresponds to a single sampling plot.*
- Meter tapes and compasses were used to get distances and bearings from the pivot points. Tree diameter at breast height was also measured and tree species was noted.*
- In Spring 2009 (Apr-Jun), data was compiled and, using Microsoft Excel and trigonometric formulas, distances and bearings from the pivot points (with known X- and Y-coordinates) were converted to X- and Y- coordinates for each object.
- This information was imported to ESRI ArcMap 9.2 GIS software. Logs were drawn using the editor toolbar of ArcMap.
- Data and maps were passed on to computer scientists for further analysis.

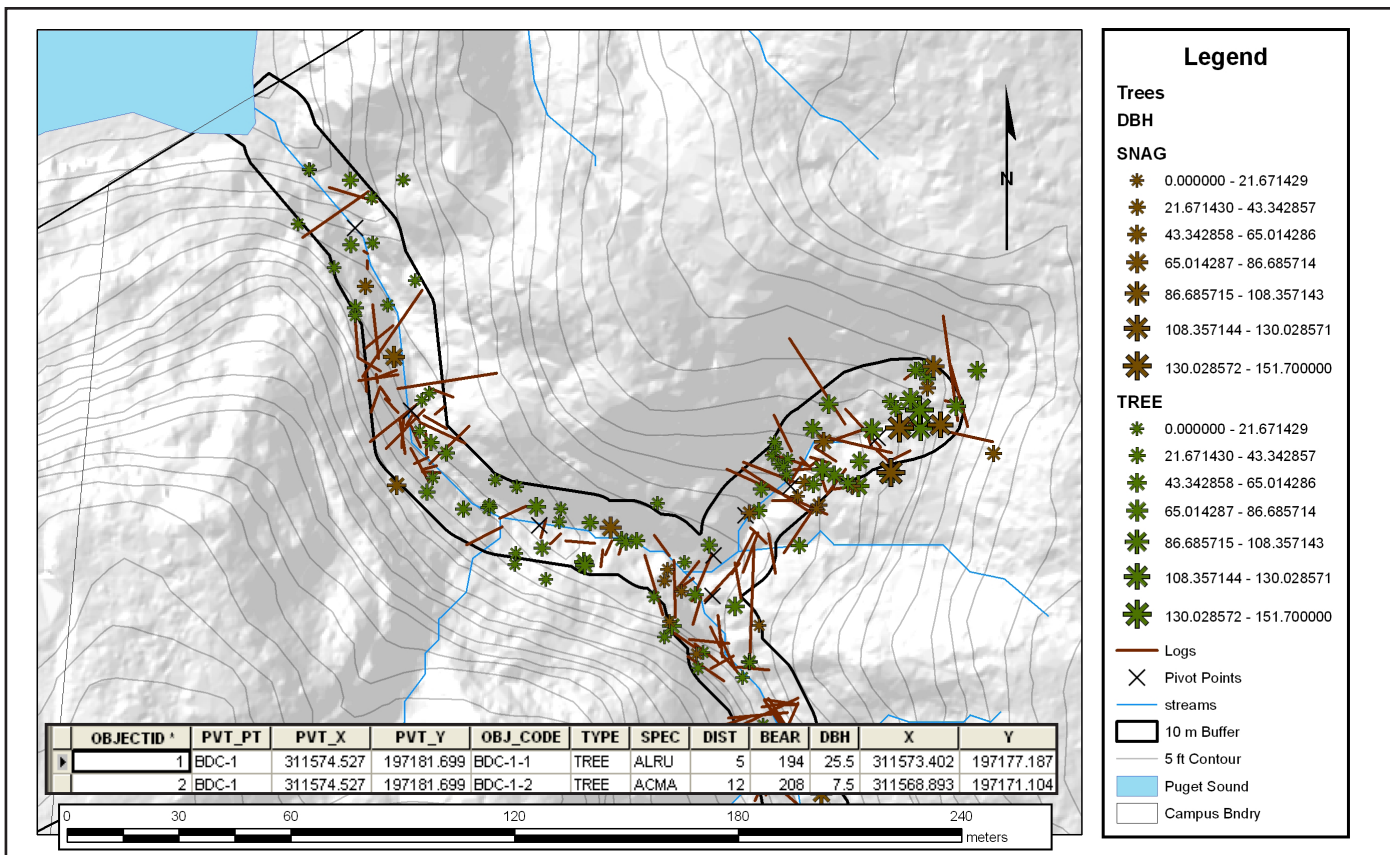


Figure 1: Map of Barking Dog Creek with legend. The map depicts the mouth of the creek where it enters Puget Sound. Brown stars represent dead trees, while green stars represent live trees. An example of the attribute table for the layer "Trees" is inserted along the bottom of the image.

Acknowledgements

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