Bringing Forest Floor & Humus Form Classification to Life Using Multimedia & Mobile-Based Learning

Maja Krzic¹, Darrell Hoffman¹, Julie Wilson¹, Margaret Schmidt² and Les Lavkulich¹
¹Faculty of Land and Food Systems, The University of British Columbia, Vancouver, Canada; ²Faculty of Environment, Simon Fraser University, Burnaby, Canada

Better Education on Soil Classification is Needed!

Soil description and classification are important skills for most natural resource professionals. Those who work in regions with extensive forest ecosystems, such as British Columbia, need to have an understanding of forest floor description, humus form classification, and the processes involved in forest floor development.

Challenges of Forest Humus Form Classification:

• Requires extensive field practice for learning and retention
• Incorporates visual, tactile and memory recall learning
• Relatively few learning resources are available; those that do exist are static and often require interpretation or guidance from an expert

Project Objectives

To improve post-secondary education of forest humus form classification by developing:

• The Forest Floor Tool - an online, multimedia supported educational resource
• The Forest Humus Forms Quest - a mobile, game-based educational quest
• A learning unit that integrates these two tools in Introductory Soil Science courses at UBC & SFU, Canada.

All these are scheduled to be piloted in early 2015.

Technology-Enhanced Learning In and Out of the Classroom

The Forest Floor Tool is a multimedia website providing students the information to complete a humus form description and classification, while gaining an understanding of the important ecological functions of the forest floor.

Implement and Evaluation

• With the aid of the Forest Floor Tool, students will be asked to complete a basic description of a humus form sample and a follow-up assignment requiring them to delve deeper into the subject matter.
• Students will be surveyed and interviewed to determine their level of satisfaction with the tool, the effectiveness of individual elements and receive suggestions for further improvements.

Why Use Mobile-Based Learning?

• Competitive games stimulate student motivation and performance.
• Quests can be effective self-study tools, and a useful means to engage in course content.

Forest Humus Forms Quest at UBC Farm, Vancouver

The Forest Humus Forms Quest is an interactive game, similar to a scavenger hunt, where users navigate an area and answer questions or decipher clues about particular points of interest.

• Based on the Questogo™ platform, a FREE mobile app (developed by 14Oranges Software Inc.).
• It utilizes a smartphone’s GPS to identify when the user has reached a desired location and then is prompted to answer a question.
• Students work in small teams to complete the Quest by following directions and answering questions.
• They walk to different forest stands on the UBC Farm and observe the forest floor.
• Points are awarded for correct answers and are posted to a connected scoreboard in real-time.

Aerial overview of the Forest Humus Forms Quest flow path (Source: Google Earth).

Please contact Maja Krzic with any questions maja.krzic@ubc.ca

¹Faculty of Land and Food Systems, The University of British Columbia, Vancouver, Canada
²Faculty of Environment, Simon Fraser University, Burnaby, Canada