Disturbance and Landscape or How to Read the Landscape

You can learn how to “read” the landscape during 6 field trips to forests of the NCC Greenbelt. We will discuss unique geological features and soils, and analyze traces of fires, hurricanes, tornadoes, insect infestation, and past anthropogenic disturbances—logging and farming,—along our way through the woods and meadows. Though traces of many disturbances will be observed during all field trips, their visibility and importance for local ecosystems will be different at each site. After our Eco-forensics series you will be able to recognize traces of past disturbances along your hiking routes, in your own woodlot or backyard, and even on some landscape paintings!

Outings:

1. Sarsaparilla trail, Nepean: how to read the human signature in the forest dynamics. Is the forest older than the oldest trees? What are signs of past clear cuts and selective logging? How to determine whether a site was always forested or cleared for agriculture in the past and then abandoned? Is the anthropogenic impact on the forest reversible?
2. Stony Swamp conservation area, Nepean: how to read traces of fires. Vestiges of fires above and below the ground; in the forest cover and in the soil. What trees are fire-prone and fire-tolerant? What sites are susceptible to fires? And what kinds of fires can be expected in different ecosystems? If we know how to determine past fire frequency in a site, can we predict a probability of future ignitions?
3. Mud Lake: how to read traces of windstorms. Hurricanes, outbursts, and tornadoes: were they common in the Ottawa area in the past? How did windstorms transform the forest cover? Do windstorms leave any long-lasting imprints in the landscape? Learn how to chase paleo-windstorms using a simple I phone app.
4. Green’s Creek conservation area: how to read traces of landslides and earthquakes. Champlain Sea in the Ottawa River valley and its legacy in soils and sediments. Why, when, and where to expect landslides? What do fires and land clearance have to do with the landslide hazard? Disturbed terrains as refugia: remnants of hemlock-Canada yew forest on ancient landslides.
5. Britannia park and Pinecrest Creek: how to read traces of flooding. What are the markers of past flooding events in the landscape? How frequent were major changes in flooding regimes in the area? How does flooding affect plants and biota? What trees are adapted to flooding?
6. Gatineau Park: synthesis of the observations that were made during the first 5 outings. Traces of all major landscape disturbances will be discussed, and each of participants will have an opportunity to hypothesize on possible causes of forest successions along the route.

Course instructor: Dr. Elena Ponomarenko

Requirements: comfortable footwear, long sleeves, long pants (to prevent tick bites)