

GIS and GPS in the Ganaraska Forest: A Spring Conference Report

Gary Birchall, Editor

The weather was its usually overcast and rainy self, just as it has been for most of the season, a season I hesitate to call spring, that followed the winter of 2010-11. But the weather did not dampen the spirits of the 27 geographers who assembled at the Ganaraska Forest Centre (GFC) in the rolling hills of the Oak Ridges Moraine, south of Peterborough. A large portion of the conference participants were from the Kawartha-Pine Ridge DSB but there was also a goodly number representing many other regions of Ontario.

The Forest Centre has recently had a substantial makeover, with the completion of a very large, environmentally-friendly, and impressive building devoted to outreach programs on the unique environment of the Ganaraska Forest for students, teachers, such as our group, and the general public.



The new Ganaraska Forest Centre Facility

Our hosts were Linda Givelas, Manager of the GFC, Mark Peacock, Director of Watershed Services, Jeff Moxley, GIS Head, and Ian Jeffrey, GIS Assistant.



Linda and Mark give the group of tour of the GFC



Shawn Hughes gets almost everyone's attention to start the day in his usual amusing and original way



**Our Hosts -
Jeff Moxley
(top left), Ian
Jeffrey (top
right) and
Mark Peacock
(left)**

In Mark's opening presentation, we learned that the forested hills and valleys of the Oak Ridges were once cleared for farming in the 19th and early 20th centuries. The sandy soils of this part of the moraine doomed that effort because of the rapid depletion of soil nutrients. In fact, many cases of starvation resulted from crop failures or the low nourishment levels of foods grown on the sandy soils. It was clear that people could not make a go of farming.

In the 1944, a Report on the Ganaraska Watershed was published, recommending the establishment of a conservation authority and the reforestation of 8 000 hectares of former farmlands on the sandy soils of the Oak Ridges Moraine. In 1947, the first trees were planted on 640 hectares and the Ganaraska forest was born. As the reforestation effort continued, the result was one of the largest reforestation projects in Ontario. Today, the forest is under the complete management of the Ganaraska Region Conservation Authority.

Jeff and Ian followed Mark's introduction, by giving us an extensive overview of GIS technology in general and how the GFC has successfully implemented the gathering, processing, and analysing powers of GIS to develop an extensive and detailed database on the watersheds that make up the Ganaraska Region Conservation Authority. Their main mandate has been to develop a hydrological model to predict the flood hazards of the various streams in the region and to be able to map floodplain and adjacent areas that could be inundated in storms of various intensities. The detailed

THE MONOGRAPH



Geographers at work in the GFC Conference Room

work, and innovative techniques that the GFC team has developed, were very impressive. For geographers, it was a clear example of how geographic information systems can be used to understand, and make plans to reduce or prevent, natural hazards from disrupting human systems.

Moving us into an actual activity relating GPS data with georeferenced satellite images, the group was formed into pairs to record the waypoint coordinates of selected and marked sites around the Forest Centre. We were lucky that the rains held off until we had completed the outdoor portion of this activity. Moving indoors, all the computers of the participants were loaded with the necessary software to enable everyone to combine the GPS waypoints collected in the field with the satellite map, using ArcView.



Shawn tries to organize an enthusiastic group of geographers into a set of GPS teams

On a sunny Saturday morning, Ian and Jeff walked us through a presentation on the uses of GIS within the GFC and in business, government, and education. They were very impressive in answering the many challenging questions posed by the group. As the conference came to an end, it was clear that we had had an extremely worthwhile exposure to the application of GIS technology in the field of conservation and for those with little experience integrating GIS and GPS, the Friday activity was a novel and valuable learning experience.

On behalf of O.A.G.E.E., our sincere thanks are extended to the Ganaraska Forest Centre team of Linda, Mark, Jeff, and Ian for being such friendly, informative, and well prepared hosts and to Shawn Hughes, who was the person responsible for doing all of the behind-the-scenes legwork to set up this year's highly successful Spring Conference.



Angela gets the software to plot the GPS waypoints installed on her computer



Doug takes notes during the GIS presentation by Jeff and Ian



Peek-a-boo!! The GIS technician at work!!!

