Monitoring baseline biodiversity during restoration along Ancaster Creek, an important ecological corridor.

This project was successful at establishing baseline data sets against which to compare future data sets. The students worked very well and learned a great deal in the process. We actually had more help than originally expected as two volunteers put in regular hours helping with the field work.

This project involved collaborating with staff from the Royal Botanical Gardens and the Hamilton Conservation Authority and was linked with the McMaster Community-Based Teaching Portal project. We will be making data sets available through that portal.

The intent of the project was to collect baseline ecological data that would allow assessment of ecological projects intended to improve the ecological community associated with Ancaster Creek. The imposing parking lots that abut the creek have provided petrochemical and salt run-off that likely had significant impact on the inhabitants of the creek. This data set will bolster our plans to establish a restored marsh, known as MacMarsh at the southernmost end of parking lot M. Additionally, a 30 meter buffer along the east side of the creek (formerly asphalt) has been put in place and will be planted as a riparian zone. It is anticipated that future classes in various faculties will be able to access those baseline data for comparative studies following completion of the restoration projects.

The project provided invaluable training for the two field workers and for the two volunteers (one first year biology student and one graduate of the biology department). In addition, if MacMarsh is established, it will create on-campus opportunities to train students in ecological restoration, ecological succession, sustainability and other topics. We hope and anticipate that this effort will bolster our efforts to establish MacMarsh as an outdoor classroom for instruction of students in various departments.

The students were trained by a number of professors and field professionals. I trained them to do bird surveys and to run small mammal live trapping lines. As well, they learned about sampling snakes by reading papers that I provided and by doing on-line searches about sampling reptiles. Dr. Joanna Wilson and her graduate students trained them to collect and interpret water quality data. Dr. Jurek Kolasa taught them how to sample and store benthic organisms. Staff at RBG taught them how to collect and preserve botanical samples as future reference materials. Finally, the Hamilton Conservation Authority stream sampling team worked with the students to electro-fish for sampling fish species at 5 stations in the creek.

The project resulted in a number of data sets, botanical samples, and digital photos of various fish, bird, and mammal species that were seen or sampled during the project. Additionally there are collections of insects and benthic organisms that will provide material for future fourth-year biology theses. Water Quality data sets will provide a baseline against which to quantify water quality improvements with the ongoing restoration projects and as the new communities progress through ecological succession. Success of the project will be seen following the restoration projects, when students and classes will make use of the
baseline data for various comparative studies in the creek. In a sense, the project provides the backdrop against which to measure success of the planned restoration projects.

The impact of this project will be sustained by follow-through of the MacMarsh project and completion of the 30 meter riparian buffer (including reconstruction of Parking Lot M so that surface water from the lot does not get piped directly into the creek as it does currently). Once these restoration/ecological improvement projects are completed, the real impact of our work will be seen as class projects make use of the baseline data.

This FWI award was supplemented with a Royal Bank Blue Water Fund award. The FWI funds have been spent for supplies and equipment and there is no remaining funding to spend.