



Biodiversity Seminar Series

The Biodiversity Seminar Series is pleased to announce

Manuel Elias Gutierrez & Martha Valdez Moreno

from El Colegio de la Frontera Sur, Chetumal Unit

presenting the talk

Applications of DNA Barcoding: Biomonitoring Bacalar Lake, one of the best conserved systems in Mexico

Abstract:

Bacalar Lake is one of the most pristine lakes in Mexico, located in the south of Yucatan Peninsula. The uniqueness of this ecosystem is not only given by its good preservation status but is also one of the few places with well-developed stromatolites. Due to the karstic geology of this region, it receives inflows of groundwater from hundreds of connections, some of them through sinkholes (cenotes). We focused our sabbatical project in two main lines of study: The first one was to establish a COI gene baseline of all the zooplankton in order to support further biomonitoring through next-generation techniques. The second one, to study the ichthyoplankton and a monitoring of the fish fauna using next-generation techniques in samples of water and sediments. To accomplish the study of zooplankton in the early stages of fish development, we deployed light traps and performed horizontal tows with plankton nets. To our surprise, the first method gave an astonishing amount of groups, many of them of marine origins such as mysidacea, zoea larvae and polichaetes, mixed with freshwater species like copepods, cladocerans and mites. The second surprise was that we could get barcodes of all groups with a single set of primers. Currently 48 species of fish are known in Bacalar Lake, 39 of which have already been barcoded. From the larvae we got 18 BINS, seven of them still remain unidentified. From the water, preliminary results from 18 are filtered. In total we have a preliminary list of 57 species, with at least 6 recognized new records.

Brief Bio:

Manuel Elias Gutierrez is currently a researcher at El Colegio de la Frontera Sur, Chetumal Unit. His areas of expertise include freshwater zooplankton, mainly microcrustaceans and rotifers. He has described several species, including a new genus and subfamily. Manuel has been involved with DNA barcodes since 2005 while working in integrative taxonomy.

Martha Valdez Moreno is also a researcher at El Colegio de la Frontera Sur, Chetumal Unit. Her area of expertise is DNA barcoding and its applications for freshwater and marine fish. She has been working with all developmental stages of fish and their DNA barcodes, looking for applications in fisheries and seafood.

When: Thursday March 24th 2016 at 12:00 pm

Where: Visualization Theatre, Room 1009
Biodiversity Institute of Ontario

For scheduling and more information on the seminars, please visit:

<http://biodiversitygenomics.net/resources/seminar-series/>

