Database and Interface Creative Project
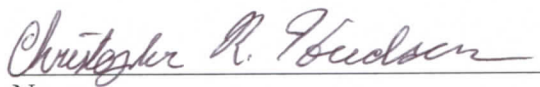
Honors Project

In fulfillment of the Requirements for

The Esther G. Maynor Honors College

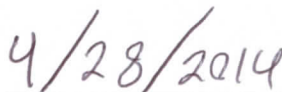University of North Carolina at Pembroke

By

Christopher R. Hudson

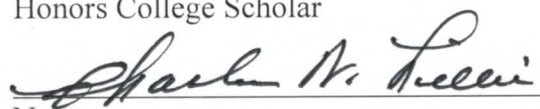Department of Mathematics and Computer Science

April 27, 2014
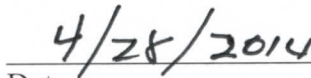
Christopher R. Hudson   4/28/2014
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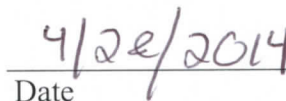
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Acknowledgments

TABLE OF CONTENTS

Summary of Project

This database provides a means for ongoing research investigating several factors impacting the Eastern Box Turtle, *Terrapene carolina*. These factors include the effects of prescribed forest fire on the habitat selection of *T. carolina*, overwintering behavior, and physical health conditions. The goal of this database will be to help identify commonalities between turtle populations between study sites at the Weymouth Woods Nature Preserve and the Lumber River State Park. Additional goals of this database are to organize several types of data surrounding the marked recapture study. The database will be able to store an array of information, which includes an abundance of environmental attributes allowing the user to process several environmental factors at once in order to analyze data. The use of this database will aid research in drawing conclusions about this declining species *T. carolina* and provide park management staff with valuable information about the habitat usage of areas being exposed to prescribed fire. The database was implemented using SQL.

A user interface for this database was implemented and hosted online using GODADDY hosting service. The directory for access to the database is password protected in order to provide a secure location for viewing and entering information. The interface utilizes a combination of HTML, CSS, PHP, and JavaScript. HTML was used for the basic implementation of the web page. CSS was used for improving the viewing pleasure of the user. PHP was used for connecting with the database being hosted by GODADDY, as well as parsing and running queries. JavaScript was used for handling checkboxes in the simple check box form which was implemented.

The user was provided with three means of interacting with the data kept in the database. A free write query box allows the user to run any SQL statement, a simple checkbox form allows the user to click the boxes for the data they wish to view, and a turtle tracker allows the user to track a specific turtle's location history.

1