

CURRICULUM VITAE

Judlyn Telesford-Checkley

PERSONAL INFORMATION

Professional Address: Department of Wildlife and Fisheries Sciences, Laboratory of Wildlife Ecotoxicology,
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EDUCATION

Texas A&M University College Station, Texas
Doctor of Philosophy in Wildlife and Fisheries Sciences August 2009 ~ December 2014

- Dissertation: "Assessing avian contributions to *Escherichia coli* and nutrient loads in impaired watersheds" Advisor: Dr. Miguel Mora
 - Dissertation was successfully defended October 6, 2014.

West Texas A&M University Canyon, Texas
Master of Science in Environmental Science August 2008

- Thesis: "Characterizing Lake Tanglewood water and evaluating the effectiveness of phosphorus removal in high pH water;" Advisor: Dr. Jim Rogers

Midwestern State University Wichita Falls, Texas
Bachelor of Science in Chemistry and Biology December 2005

- Research: "Evaluation of the electrochemical properties of Cobalt 3, 4-Pyridine Dicarboxylic acid Phthalocyanine, Cobalt 2, 3-Pyridine and a newly synthesized Pyridine-based Cobalt Phthalocyanine analog;" Advisor: Dr. Phillip Voegel

PROFESSIONAL EXPERIENCE

Texas Commission on Environmental Quality, Region 1 Amarillo, Texas
Environmental Investigator, Field Operations Division December 2008 ~ May 2009

- Inspected construction sites to ensure compliance with storm water regulations
- Monitored mechanical integrity testing of underground injection wells
- Inspected waste sites to ensure compliance with waste regulations
- Prepared compliance reports

Tyson Foods Amarillo, Texas
Biologist/Chemist July 2008 ~ December 2008

- Prepared samples for E. coli, Listeria and Salmonella analyses
- Analyzed samples for E. coli, Listeria and Salmonella
- Prepared reports

RESEARCH EXPERIENCE

Texas A&M University, Dept. of Wildlife and Fisheries Sciences
Graduate Research Assistant

Doctoral Dissertation: "Assessing avian contributions of *Escherichia coli* and nutrient loads to watersheds"
Advisor: Dr. Miguel Mora

- Collected fecal and water samples from and around four heronries composed of colonial waterbirds (2011 to 2013). Two heronries were located on islands and the other two heronries contained nests located in trees or shrubs with roots and trunks in water. *Escherichia coli* were enumerated and samples were analyzed for fecal sterols and nutrients.
- Created a simulation model that provided estimates of fecal nitrogen and phosphorus loads generated from heronries

- *E. coli* and nutrients deposited through feces from birds at heronries were influenced by the size and location of the heronry. The highest *E. coli* counts in water samples were collected at the two larger heronries, which were both located directly over water. The highest estimated *E. coli* loads generated by adult birds ranged between 2×10^{14} and 4×10^{14} Colony Forming Units (CFU) breeding season⁻¹. In addition, there were positive correlations between *E. coli* counts and the sum of bird fecal sterols from water directly under a heronry.
- Nitrogen and phosphorous concentrations in water samples were as high as 62.4 mg/L and 4.69 mg/L, respectively. Potassium, calcium, Magnesium, and iron were most abundant in water samples when birds nested directly over water.
- The results obtained in this study contribute to furthering the understanding of the potential contributions of bacteria and nutrients from large heronries located on the edge of or near waterbodies.
- This study provides useful insight into the potential impact that large heronries of colonial waterbirds can have on surface water quality and creates the framework for further studies of bacteria and nutrient-impaired watersheds, especially those influenced by large heronries. This study also provides important data that will be beneficial to water quality managers and stakeholders.

West Texas A&M University, Dept. of Life, Earth and Environmental Sciences

Canyon, Texas

Graduate Research Assistant

January 2007 ~ August 2008

- Thesis: *“Characterizing Lake Tanglewood water and evaluating the effectiveness of phosphorus removal in high pH water;”* Advisor: Dr. Jim Rogers
- Found that the high phosphorus (P) levels (0.14 – 8 mg/L) originated from the effluent from a waste water treatment plant, the main source of water for the lake
- Samples collected from the inflow to the lake were treated separately with aluminum sulfate (alum) and iron (III) sulfate to determine which will be better at reducing the P to the EPA recommended level of 0.05 mg/L
 - Alum reduced the P level by 98% while maintaining the pH of the water above 6; iron (III) sulfate was not as effective
- This research can be beneficial in reducing nutrient pollution and thus the degradation of lakes
- This is one of the few studies done on high pH lakes, therefore the findings can provide insight on the treatment of such lakes affected by high P levels

Midwestern State University

Wichita Falls, Texas

Undergraduate Research Assistant

August 2002 ~ December 2005

- Research: *“Evaluation of the electrochemical properties of Cobalt 3, 4-Pyridine Dicarboxylic acid Phthalocyanine, Cobalt 2, 3-Pyridine and a newly synthesized Pyridine-based Cobalt Phthalocyanine analog;”* Advisor: Dr. Phillip Voegel
- Research involved chemically modifying electrodes using metal phthalocyanine complexes to better detect sulfur-containing (thiol) compounds
 - Modified electrodes detected thiol compounds at very low levels compared to the unmodified carbon electrodes
- Study can be beneficial in developing electrodes able to detect very low levels of pollutants or chemicals that may also be toxic or lethal at low concentrations

TEACHING EXPERIENCE

Texas A&M University, Dept. of Wildlife and Fisheries Sciences

Graduate Teaching Assistant:

Courses: Animal Ecology lab (fall 2011, 2012, 2013, 2014)

- Developed course syllabus, lab lectures, quizzes and other assignments
- Graded assignments and exams

Wildlife and Fisheries Conservation (spring 2010 and 2011)

- Graded assignments and assisted in the preparation of course-related activities

Graduate Research Assistant (spring 2014)
Course: Ecological Risk Assessment
– Developed course curriculum

West Texas A&M University, Dept. of Life, Earth and Environmental Sciences

Graduate Teaching Assistant,
Course: Biology lab (fall 2007, spring 2008, summer 2008)
– Developed course syllabus, lab lectures, quizzes and other assignments
– Graded assignments and exams

Midwestern State University, Dept. of Chemistry

Student Teaching Assistant:
Courses: General, organic and analytical chemistry labs (fall 2002-2005, spring 2003-2005, summer 2003-2004)
– Prepared solutions and operated instruments such as GC-MS and UV-VIS
– Graded exams and quizzes
– Tutored Chemistry weekly

PRESENTATIONS

Title: Assessing Avian Contribution of *Escherichia coli* (*E. coli*) and Nutrient Loads to Watersheds

- Oral presentation at the 2013 SACNAS National Conference, San Antonio, Texas, October 2013

Title: Large Heronries Contribute *E. coli* and Nutrient Loads to Waterbodies

- Poster presentation at the 2012 SACNAS National Conference, Seattle, Washington, October 2012
- Poster presentation at the 2012 Bacterial Source Tracking State of the Science Conference, New Braunfels, Texas, February 2012

Title: Using Stable isotope and fecal sterol analyses to assess avian contributions to *Escherichia coli* (*E. coli*) in Texas watersheds

- Poster presentation at the 9th Annual Pathways Student research Symposium, College Station, TX, November 2011

PUBLICATIONS

Peer-Reviewed Journal articles:

Submitted Manuscripts:

Telesford, J.M., Mora, M.A., Grant W.E., Boellstorff, D.E., and Provin, T.L. Quantifying the nitrogen and phosphorus loads deposited by Cattle Egrets (*Bubulcus ibis*) in heronries in Texas.

Manuscripts in Preparation:

Telesford, J.M., Mora, M.A., Gentry, T.J., Mc. Donald, T.J., Boellstorff, D.E. An Evaluation of the Contribution of *Escherichia coli* (*E. coli*) to Texas Watersheds from Avian heronries using fecal sterol analysis.

Telesford, J.M., Mora, M.A., Boellstorff, D.E., and Provin, T.L. An Evaluation of the Contribution of macro and micro minerals from feces of colonial nesting waterbirds to water in Texas.

LEADERSHIP AND ACTIVITIES

- Member: Society for Advancement of Chicanos/Latinos and Native Americans in Science
 - National Liaison: 2012 - 2013
- Member: Association of Graduate Wildlife and Fisheries Scientists
 - Vice President: 2012-2013
- Member: Society of Environmental Toxicology and Chemistry

SKILLS

Scientific Skills and Abilities

- Education and training in a full range of environmental topics including sampling and interpretation, standard operating procedures, agricultural waste management, environmental regulations, and applied hydrogeology
- Experience with stormwater, water quality and waste regulations
- Experience with ecological risk assessment and ecotoxicological studies
- Ability to analyze and interpret large amounts of data

Communication Skills

- Make effective written and oral presentations
- Communicate effectively with a diverse audience

Other Traits

- Work independently or part of a team, in diverse and changing environments
- Coordinate and implement projects
- Set and meet realistic goals

REFERENCES

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