Courtney Lynn Zambory

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EDUCATION

M.S. Fisheries Biology & GIS Certificate   **2018**
    Iowa State University, Ames, Iowa
    Thesis: *Geospatial methods for aquatic conservation: Topeka Shiner restoration site selection and the development of an Iowa watershed health assessment*

B.A. Biology with specialization in Ecology and Conservation & Minor in Earth Science   **2013**
    Boston University, Boston, Massachusetts

WORK EXPERIENCE

Spatial Information Analyst   **2018 - present**
Oregon Department of Fish and Wildlife, Corvallis Research Lab, Corvallis, OR.

- Provide GIS and spatial data support to the Fish Research, Evaluation, Data and Decision Support (REDD) group
- Implement and evaluate the spatially distributed, ecohydrological model, Visualization Ecosystems for Land Management Assessments (VELMA), in Oregon coastal watersheds to predict the effects of future climate and habitat conditions on aquatic resources
- Develop spatial tools for the REDD group and the ODFW science program, especially to support Coastal Coho habitat assessment and species distribution modelling in Oregon
- Coordinate access and exchange of interagency spatial data files necessary for REDD modeling efforts
- Write technical reports and prepare presentations to communicate progress and results to a variety of audiences

Graduate Research Assistant   **2016 - 2018**
Department of Natural Resource Ecology and Management, Iowa State University, IA.

- Collaborated with governmental and non-governmental agencies to support conservation planning
- Worked collaboratively with federal and state government agencies and non-profit organizations to support conservation planning for a federally-listed endangered fish species to ensure preservation, protection, and enhancement of its habitat
- Conducted landscape scale spatial analysis of aquatic systems with ArcGIS to characterize hydrological processes
- Processed and hydro-corrected LiDAR derived Digital Elevation Models (DEMS) to generate 6,000km of accurate stream flow
- Integrated species distribution models, potential restoration locations, satellite imagery, and public land data to prioritize ecologically effective and economically efficient sites
- Compiled and analyzed large spatial datasets from various sources to create a Watershed Health Assessment for Iowa to map 27 indices of watershed health for 389 HUC 10 watersheds across the state
- Developed an innovative ArcGIS toolbox using Python coding language to automate location of historical stream meanders
- Created a Microsoft Access relational database to store complex biological, habitat, and GIS data
- Trained and supervised technicians in ArcGIS data creation, editing, and analysis
- Provided GIS technical and analytical best practice expertise to departmental staff and faculty
- Presented research findings at diverse venues to academic, governmental, and public audiences
- Authored numerous technical and non-technical reports for federal, state, and public review

Biologist I/II   **2013 - 2016**
Louisiana Department of Wildlife and Fisheries (LDWF), Grand Isle, LA.

- Chief Scientist for LDWF's portion of the Southeast Area Monitoring and Assessment Program (SEAMAP) Plankton Survey Project
- Responsible for planning, budgeting, organizing, and executing multiday offshore fisheries data collection
- Coordinated sample transfers to the National Marine Fisheries Service (NMFS)
- Supported the Environmental Protection Agency's (EPA) 2015 National Coastal Conditions Assessment
- Responded to federally protected marine mammal and federally endangered sea turtle stranding events
- Published maps for both research cruise planning and reporting using ESRI ArcGIS 10.x software
- Supervised biologists and volunteers during field fisheries data collection, sometimes during adverse conditions
- Authored reports for state, federal, and public review
- Conducted entry and QA/QC of fisheries data in state and federal databases
- Operated CTDs, YSIs, and sondes to collect water quality data
- Processed and analyzed chlorophyll samples in laboratory setting

- Conducted dockside CREEL surveys
- Implemented diverse fisheries survey methods to support both state and federal assessment and monitoring projects including:
  - **SEAMAP Plankton Survey**
  - **SEAMAP Groundfish Survey**
  - **SEAMAP Vertical Line Survey**
  - **SEAMAP Bottom Longline Survey**
  - **Red Drum Project**
  - **Artificial Reef Dive Survey**

Boston University GIS Student   2012 - 2013
Boston University Earth and Environment Department, Boston University, Boston, MA.
- Developed land cover change maps of Broadmoor Wildlife Sanctuary, MA using ESRI ArcGIS software
- Added maps to digital archives to support the "Audubon Project" at Boston University
- Presented work at the Massachusetts Audubon Society Natural History Conference

Marine Biogeochemistry Research Intern   2010 - 2013
Fulweiler Marine Biogeochemistry Laboratory, Boston University, Boston, MA.
- Responsible for the organization and processing of numerous sediment cores and vegetation samples from New England wetlands to be analyzed for nutrient concentration

Fish and Invertebrate Zoological Operations Intern   2012
Georgia Aquarium, Inc., Atlanta, GA.
- Performed general animal care and habitat maintenance of aquatic and marine fish and invertebrates
- Observed behaviors and made decisions for care based on observations
- Maintained health records and water quality
- Answered guests' questions about exhibits and species on display

Environmental Camp Counselor/Educator   2009, 2010, 2012
Camp Kingfisher, Chattahoochee Nature Center, Roswell, GA.
- Developed unique and engaging educational programs for campers aged 7-11 about Southeastern, USA natural ecology and environmental issues focusing on Georgia's diverse ecosystems
- Supervised groups of 10-20 children Monday-Friday from 8am-4pm
- Led and organized overnight camping events for older, 5th grade campers

SELECTED ORAL PRESENTATIONS AND POSTERS (7 OF 14)

2018 – "Geospatial methods for aquatic conservation: Topeka Shiner restoration site selection and the development of an Iowa watershed health assessment. *M.S Oral Thesis Defense.* Iowa State University, Ames, IA.

2018 – "Integrating LiDAR Landscape Analysis and Species Distribution Models to Prioritize Areas for Oxbow Restoration." *Oral Presentation.* Iowa Water Conference. Ames, IA.

2017 – "Off-Channel Mapping for Identifying and Prioritizing Topeka Shiner Restoration Sites." *Oral Presentation.* Society for Conservation GIS Meeting, Monterey, CA.

2017 – "Use of Geospatial Technology in Restoration Ecology." *Oral Presentation.* IA Coop Unit Annual Meeting, Ames, IA.

2017 – "Exploratory Use of Side Scan Sonar to Map a Small Iowa River." *Oral Presentation.* Ames Anglers Meeting, Ames, IA.

2017 – "The Creation of Iowa's own Watershed Health Assessment Framework to Guide Oxbow Restoration in Iowa for the Conservation of the Topeka Shiner." *Poster Presentation.* Iowa AFS Chapter Meeting, Ames, IA.

2013 – "Land Use in Broadmoor." *Oral Presentation.* Massachusetts Audubon Society Natural History Conference, Natick, MA.

PEER-REVIEWED PUBLICATIONS

Zambory, C.L., Ellis, H., Pierce, C.L., Roe, K.J., Weber, M.J., Schilling, K.E., and Young, N.C. 2019. The Development of a GIS Methodology to Identify Oxbows and Former Stream Meanders from LIDAR-Derived Digital Elevation Models. *Remote Sensing 11, 12.* doi:10.3390/rs11010012

PUBLISHED REPORTS AND GRAY LITERATURE

Zambory, C.L. 2018. Geospatial methods for aquatic conservation: Topeka Shiner restoration site selection and the development of an Iowa watershed health assessment. *M.S Thesis.*

Bybel, A., **Zambory, C.L.**, and Simpson, N.A. 2017.Three-pronged approach to Topeka Shiner Research. *Iowa AFS Newsletter*, 36, 18-19.

Zambory, C.L., Bybel, A.P, Pierce, C.L., Roe, K.J., and Weber, M.J. 2017. Habitat Improvement Projects for Stream and Oxbow Fish of Greatest Conservation Need. *Annual Progress Report*.

Simpson, N., Bybel, A., and **Zambory, C.L**. Topeka Shiner Research in Iowa. 2017. *Article in Getting into Soil and Water*.

Bybel, A.P., **Zambory, C.L.**, Pierce, C.L., Roe, K.J., and Weber, M.J. 2016. Habitat Improvement Projects for Stream and Oxbow Fish of Greatest Conservation Need. *Annual Progress Report*.

Zambory, C.L. Louisiana Spring 2015 SEAMAP Plankton Survey Cruise Report. *Annual Progress Report*.

Zambory, C.L. Louisiana Fall 2014 SEAMAP Plankton Survey Cruise Report. *Annual Progress Report*.

RELEVANT WORKSHOPS

2017 – An Introduction to Mobile Field Data Collection in ArcGIS, *Monterey, CA*.

2017 – An Introduction to Species Distribution Modelling in the Marine Environment, *Monterey, CA*.

2016 – Database Concepts, Design, and Application in Fisheries Management, *Iowa State University, Ames, IA*.

2016 – GIS Applications in Aquatic Ecology and Evolutionary Biology Workshop, *St. Louis University, St. Louis, MO*.

2016 – USDA Agricultural Conservation Planning Framework (ACPF) Training Workshop, *Iowa State University, IA*.

CERTIFICATIONS

- Basic CPR
- Basic First Aid
- NAUI Master Scuba Diver
- National Marine Fisheries Service HMS Atlantic Shark Identification Workshop Participant
- Protected Species Safe Handling, Release, and Identification
- Boat U.S Foundation Online Boating Safety Course: Louisiana

TEACHING

Fisheries Management Lab (2017) *Iowa State University, IA*.

Basic Map Making in ArcGIS (2016) *Iowa State Graduate Student Organization Brown Bag Seminar, Iowa State University, IA*.

GRANTS AND AWARDS RECEIVED

2017 – Best Student Poster, Iowa Chapter of the American Fisheries Society, Iowa

2017 – Graduate and Professional Student Senate Professional Advancement Grant, Iowa State University

2017 – Iowa Natural Heritage Foundation J.N. "Ding" Darling Scholarship

2017 – Dr. Keith McNurlen Award

2017 – Elaine Boge Scholarship

2016 – Graduate and Professional Student Senate Professional Advancement Grant, Iowa State University

2013 – Undergraduate Research Opportunities Program Grant, Boston University
   "*Mapping Biogenic silica in above-ground woody biomass in the Northeast Region of the United States*"

2012 – Undergraduate Research Opportunities Program Grant, Boston University
   "*Marine Sediment Biogenic Silica as a Tool for Understanding Climate Change in a New England Estuary*"

OUTREACH AND VOLUNTEER ACTIVITIES

Editor in Chief of *Field Notes Volume 8* (2016-2017) *Department of Natural Resource Ecology and Management, Iowa State University, IA*.

- Lead a committee of graduate students in the collection, editing, organizing, and publishing an annual publication for the Department of Natural Resource Ecology and Management at Iowa State University

Seminar Fisheries Committee Chair (2016-2017) *Department of Natural Resource Ecology and Management, Iowa State University, IA*.

- Invited, organized, and hosted fisheries seminar speakers to attend the Department of Natural Resource Ecology and Management Seminar Series

Prairie Restoration Volunteer (2016) *Iowa Natural Heritage Foundation (INHF), Pilot Mound, IA*.

- Applied herbicide and manually removed invasive and non-native vegetation from hillside prairies

Dog Care Volunteer (2014-2015) *Animal Rescue New Orleans (ARNO), New Orleans, LA*.

- Walked and fed dogs, disinfected cages, and occasionally took dogs to off-site day training trips and foster events

PROFESSIONAL MEMBERSHIPS

- Society for Conservation GIS
- American Fisheries Society
- Oregon Chapter of the American Fisheries Society