

## Emily Morgan Liljestrand

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### Education

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Michigan State University  
Quantitative Fisheries Center  
**Degree:** PhD in Fisheries Sciences  
**Advisor:** Dr. James Bence  
Aug 2017-Present  
**Current GPA:** 4.0

University of Maryland Center for Environmental Science  
Chesapeake Biological Laboratory  
**Degree:** M.Sc. in Fisheries Sciences  
**Advisor:** Dr. Michael Wilberg  
Jan 2015-Aug 2017  
**GPA:** 4.0

Rice University  
**Degree:** B.S. Biochemistry and Cell Biology  
**Degree:** B.A. Ecology and Evolutionary Biology  
**Degree:** B.A. Asian Studies  
Fall 2009-Spring 2013  
**GPA:** 3.79

### Experience

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**Baylor College of Medicine** Oct 2013-Jan 2015  
Project Intern (paid)  
P.I.: Dr. Jin Wang

- Prepared and maintained stocks of pancreatic cell lines
- Performed cell viability assays
- Trained in murine care and surgery
- Edited grant applications, personal statements, and submissions for publication

**Elite Private Tutors** Oct 2013-Jan 2014  
High School Tutor for Math, Science, and SAT Prep

**Marine Biological Laboratory** Summers 2012, 2013  
Course Assistant for Neural Systems and Behavior Graduate Course  
Director: Dr. Paul Katz (2012)  
Director: Dr. Hans Hofmann (2013)

- Assisted an intensive graduate level laboratory course
- Prepared solutions for use in neuroanatomy and physiology research
- Coordinated with several companies and departments to order, organize, and exchange microscopes, computers, and chemical stocks
- Managed, organized, and edited social media sites

## **Publications**

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Liljestrand EM, Wilberg MJ, Schueller, AM, Estimation of Movement and Mortality of Atlantic Menhaden during 1966-1969 Using a Bayesian Multi-State Mark-Recovery Model. 2018. Fisheries Research, 210:204-213

Liljestrand EM, Wilberg MJ, Schueller, AM, Multi-state Dead Recovery Mark-Recapture Model Performance for Estimating Movement and Mortality Rates. 2018. Fisheries Research, 210:214-223.

## **Presentations**

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Liljestrand, EM, Bence JR, Deroba JJ, How data quality influences model accuracy in state space stock assessment modeling. 2021. Pre-Recorded Oral Presentation. Presented at: World Fisheries Congress, September 20-24, 2021.

Liljestrand, EM, State space stock assessment models: previous applications, future potential. NOAA National Stock Assessment Science Seminar, September 2, 2021.

Liljestrand, EM, Bence JR, Deroba JJ, The Importance of Data Type and Quality in State Space Stock Assessment Modeling of Lake Michigan Lake Whitefish (*Coregonus clupeaformis*) and Gulf of Maine Haddock (*Melanogrammus aeglefinus*). 2020. Pre-Recorded Oral Presentation. Presented at: American Fisheries Society National Meeting, September 14-25, 2020.

Bence, JR, Liljestrand, EM, Lenart, S, Estimation of natural mortality during fitting of stock assessment models. 2020. Pre-Recorded Oral Presentation. Presented at: American Fisheries Society National Meeting, September 14-25, 2020.

Liljestrand, EM, Bence JR, Deroba JJ, Application of State Space Stock Assessment Modeling to Lake Whitefish (*Coregonus clupeaformis*). 2019. Oral Presentation. Presented at: American Fisheries Society National Meeting, September 20, 2019; Reno, NV.

Liljestrand EM, Wilberg MJ, Schueller, AM, Estimating migration and mortality of adult Atlantic menhaden with data from a large-scale mark-recapture study. Oral Presentation. Presented at: ICES/PICES Drivers of Dynamics of Small Pelagic Fish Resources, March 8, 2017; Victoria, BC, Canada.

Liljestrand EM, Wilberg MJ, Schueller, AM, Atlantic Menhaden Migration, Survival, and Exploitation Rates during 1966-1969. Oral Presentation. Presented at: American Fisheries Society National Meeting, August 25, 2016; Kansas City, MO.

Liljestrand EM, Wilberg MJ, Schueller, AM, Menhaden on the Move: A Quantitative Migration Model of Atlantic Menhaden (*Brevoortia tyrannus*) 1966-1969. Oral Presentation. Presented at: American Fisheries Society Tidewater Chapter Meeting, April 8, 2016; Edgewater, MD.

## **Grants and Fellowships**

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Maryland Sea Grant Graduate Fellowship (2015-2016)

Chesapeake Biological Laboratory Graduate Education Committee Travel Grant (\$500)

University of Maryland Jacob K. Goldhaber Travel Grant (\$400)

University of Maryland International Conference Student Support Award (\$213)

PICES Travel Grant (\$370)

William E. Ricker Distinguished Fellowship (\$1,500)  
NMFS-Sea Grant Fellowship in Population and Ecosystem Dynamics (2019-2022)  
Graduate Student Research Enhancement Award (\$350)  
Ecology, Evolution, and Behavior (EEB) Travel Fellowship (\$800)

### **Awards**

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Best Presentation Award, ICES/PICES Drivers of Dynamics of Small Pelagic Fish Resources (2017)

### **Workshops and Conferences**

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AFS National Conference, Baltimore, MD (2021)  
World Fisheries Congress, Virtual Format (2021)  
AFS National Conference, Virtual Format (2020)  
ICES Workshop on the Review and Future of State Space Stock Assessment Models (WKRFSAM), Copenhagen, DK (2020)  
CAPAM Workshop on Next Generation Stock Assessment Models, Wellington, NZ (2019)  
AFS National Conference, Reno, NV (2019)  
Women in Nature Network National Meeting, Guwahati, Assam, India (2019)  
International Association for Great Lakes Research Conference, Scarborough, ON (2018)  
Certification in College Teaching Institute Workshop, East Lansing, MI (2018)  
ICES/PICES Drivers of Dynamics of Small Pelagic Fish Resources, Victoria, BC (2017)  
AFS National Conference, Kansas City, MO (2016)  
AFS Tidewater Chapter Meeting, Edgewater, MD (2016)  
ICES Annual Science Conference, Copenhagen, DK (2015)  
AFS National Conference, Portland, OR (2015)  
Program MARK intermediate level workshop, Fort Collins, CO (2015)  
AFS Tidewater Chapter Meeting, Pine Knoll Shores, NC (2015)  
Marine Resources and Population Dynamics Workshop, Long Key, FL (2014)

### **Professional Organizations**

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American Fisheries Society  
American Fisheries Society Michigan Chapter  
American Institute of Fishery Research Biologists  
International Association for Great Lakes Research  
Women in Nature Network  
Graduate Women in Science

### **Leadership Roles**

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Michigan State University Fisheries and Wildlife Graduate Student Faculty Meetings Representative (2020-Present)  
Michigan State University Fisheries and Wildlife Graduate Student Webmaster (2020-Present)  
Michigan State University Fisheries and Wildlife Graduate Student Treasurer (2019-Present)  
Michigan State University Fisheries and Wildlife Graduate Student Social Chairman (2018)  
AFS Tidewater University of Maryland Student Subunit President (2016)  
University of Maryland Center for Environmental Science Student Representative (2016)  
Marine Estuarine Environmental Sciences Student Representative (2016)  
Maryland Higher Education Council Student Representative (2016)

## **Outreach**

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Michigan State University Girls Math and Science Day Activity Leader (2019, 2020)  
Volunteer Editor for MSU Fisheries and Wildlife Spotlight Magazine (2017-Present)  
Volunteer Docent at Chesapeake Biological Laboratory Visitors Center (2015-2017)

## **Blogging and Informal Publications**

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Spotlight Magazine, “One Fish, Two Fish, Many Fish, Few Fish” (<https://spotlight-msu.medium.com/>)  
AFS Tidewater University of Maryland Student Subunit Blog (<http://afs-umd.blogspot.com/>)  
Maryland Sea Grant Fellowship Blog (<http://www.mdsg.umd.edu/fellowship-experiences>)

## **Skills and Certificates**

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### **Open Water Diver Certified**

PADI Diver No. 11050X2301  
Coral Reef Conservation specialty  
Project Aware specialty

### **Computer Programs**

R, including packages ggplot, BUGS, JAGS, STAN, TMB  
AD Model Builder, OpenBUGS, STELLA, MARK  
Microsoft Office Suite: Word, Excel, Powerpoint, Access

### **Languages**

Spanish (Excellent)  
Japanese (Conversational)

## **Graduate Level Courses**

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### **Statistics**

Environmental Statistics I and II  
Modern Statistical Models in Ecology  
Applied Bayesian Statistics  
Bayesian Inference Monte Carlo  
Resampling Design

### **Fisheries and Wildlife**

Advanced Population Dynamics and Assessment  
Fish Ecology  
Fisheries Science and Management  
Principles and Perspectives in Fisheries and Wildlife  
Global Issues in Fisheries  
Uncertainty in Natural Resource Management  
Limnology  
Evolution

### **Communication**

Scientific Writing and Communication  
Fisheries and Wildlife Outreach and Engagement  
Certification in College Teaching Program

**Other**

Masters Thesis Research  
Doctoral Dissertation Research

**Professional References**

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James R. Bence  
Quantitative Fisheries Center  
Department of Fisheries and Wildlife  
Michigan State University  
375 Wilson Rd., 101 UPLA Building  
bence@msu.edu  
Phone (517) 355-0003  
Relationship to Reference: Current Graduate Adviser

Michael J. Wilberg  
Chesapeake Biological Lab  
PO Box 38  
Solomons, MD 20688  
wilberg@umces.edu  
Phone (410) 326-7273  
Fax (410) 326-7302  
Relationship to Reference: Former Graduate Adviser