

## ALLISON L. SUSSMAN

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### CURRENT APPOINTMENT

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**Database & GIS Specialist**, contractor in support of USGS

*Location:* Patuxent Wildlife Research Center, Laurel, MD

*Focus:* Gulf of Mexico Marine Assessment Program for Protected Species (GoMMAPPS) Seabird Team

### EDUCATION

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**M.S. in Integrative Biology** (2017) Michigan State University, East Lansing, MI

*Thesis:* Assessing waterbird hotspots for conservation and management in the Great Lakes

*Specialization in Ecology, Evolutionary Biology, and Behavior*

*Advisor:* Dr. Elise F. Zipkin

**B.S. in Wildlife Conservation** (2008) University of Delaware, Newark, DE

*Minor in Entomology*

### PROFESSIONAL EXPERIENCE

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**Database & GIS Specialist** – USGS Patuxent Wildlife Res Ctr (2018-present)

Designed a data management system for marine bird survey data being collected in the Gulf of Mexico (as part of the GoMMAPPS) by developing and maintaining a relational database in Microsoft SQL Server, developed and modified data processing (QA/QC, formatting) code in R and SQL languages, trained observers in standard operating procedures for aerial survey protocols and data collection & entry methods, provided GIS support and worked directly with pilot biologists for aerial survey planning, created metadata for spatial layers used in the aerial surveys, maintained documentation (with version control) for the GoMMAPPS project and marine bird surveys/data through Atlassian software systems, assisted with post-survey data summaries, and conducted preliminary analysis to evaluate study design and results.

**Database Manager & Monitoring Program Tech** – USGS Patuxent Wildlife Res Ctr (2008-2014)

Worked with federal partners, state agencies, and NGOs to run and maintain large-scale bird survey programs (Northwest Atlantic Seabird Compendium, Colonial Waterbird Database, North American Breeding Bird Atlas Explorer, Bird Point Count Database, and National Marsh Birds Population Assessment and Monitoring Program) by: designing and maintaining associated databases, incorporating new datasets, maintaining web-based tools for field biologists using biological training and scientific knowledge of monitoring methods and bird biology, performing quality control, implementing new functions and tools using GIS, creating summary, analytical, and spatial products for biologists (to track progress, measure data quality, and analyze data) and modelers, and disseminating summarized data as web services.

**Biological Science Technician** – USGS Patuxent Wildlife Res Ctr (2006-2007)

Used database procedures and GIS tools to capture breeding bird atlases into a repository for North American Breeding Bird Atlases and helped process North American Breeding Bird Survey 2006 field data. Created website content and downloadable map datasets for research and conservation users.

### *Research & Field Experience*

**Aerial Survey Field Biologist** – USGS Patuxent Wildlife Res Ctr (2018-present)

Conducted low-level aerial surveys in the Gulf of Mexico from the USA-Mexico border near Brownsville, TX to Key West, FL including the Dry Tortugas as part of the Gulf of Mexico Marine Assessment Program for Protected Species.

**Graduate Research Assistant** – Michigan State University (2014-2017)

Built models to identify persistent areas of high-use (“hotspots”) by water birds in the Great Lakes region to help inform management decisions. Reviewed literature on both water bird ecology in the Great Lakes region and methods to identify hotspot locations. Worked with federal and state data providers to understand different aerial bird survey data collection methods and then standardizing the data to be used collectively for analysis. Analyzed bird survey data using spatial and statistical packages and building models within the R environment to identify areas in greater need of future surveying.

**Breeding Bird Atlas Volunteer** – Maryland; Delaware; Loudoun Co., Virginia (2006-2014)

Volunteered with three separate bird atlas projects (Maryland, Delaware, and Loudoun, Co., Virginia) to systematically survey locations within the projects’ spatial extent and document birds and their behaviors.

**Bird Point Count Observer** – USGS Patuxent Wildlife Res Ctr (2008)

Secondary observer for avian point counts conducted at Patuxent Wildlife Research Center in Laurel, MD. Used both sight and sound to detect birds at each fixed-point location to document all birds present during the breeding season.

**Delaware Stream Watch Technical Monitor** – Delaware Nature Society (2005-2008)

Monitored two stream sites monthly, testing for dissolved oxygen, pH, alkalinity, nitrates, phosphates, conductivity, salinity in tidal reaches, temperature, and flow.

**Undergraduate Research Assistant** – University of Delaware (2005-2008)

Assisted in locating and banding wood thrush for a long-term demographic study of a color-banded wood thrush population which has been intensely studied since 1973 in a fifteen-hectare suburban forest fragment in Delaware. Estimated white-tailed deer doe ages based on tooth wear and replacement to understand the efficacy of a controlled hunt of the same species in Maryland. Washed, sorted, identified, dried, and weighed invertebrates, seeds, and vegetative structures from samples of tidal marsh habitats to determine food availability for wintering and migrating dabbling ducks in New Jersey.

**Teaching Experience**

Graduate Teaching Assistant, Cell & Molecular Biology – Michigan State University (2014-2017, 4 terms)

Undergraduate Teaching Assistant, Apiology Lecture & Laboratory – University of Delaware (2008, 1 term)

**COMPUTER SOFTWARE & CODING LANGUAGES**

Skilled in Adobe suite, including Acrobat, Dreamweaver, Fireworks, Illustrator, and Photoshop; graphic design; data & spatial analysis, map design, and visualization using ArcGIS, QuantumGIS, R, and web mapping using ArcGIS Online, Google Maps, OpenLayers, and MapServer; web development and coding skills in ColdFusion, CSS, HTML, JAGS, Javascript, Python, R, SAS, and WinBUGS; version control and collaboration using GitHub and Atlassian (Confluence, Jira, Bitbucket) software; management of large relational databases in Microsoft SQL Server & PostgreSQL and management of the spatial components of these databases using Google Earth, ArcGIS, and PostGIS; proficient in full Microsoft Office suite, with extensive use of Access and Excel (including designing custom data entry products); experience with FGDC/ISO geospatial metadata creation and documentation.

**HONORS AND AWARDS**

Associate Wildlife Biologist® – The Wildlife Society (2009-present)

\$200 award for scientific meeting travel/registration from the MSU Dept of Integrative Biology (2017)

2-year sponsored membership for the AAAS/Science Program for Excellence in Science (2015-2017)

AOU Student Travel Award – 126<sup>th</sup> Meeting of the American Ornithologists’ Union (2008)

City of Newark (DE) Town & Gown Community Service Award (2006 & 2007)

## PUBLICATIONS

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### *Peer-reviewed*

- Sussman, A.L., Gardner, B., Adams, E.M., Salas, L., Kenow, K.P., Luukkonen, D.R., Monfils, M.J., Mueller, W.P., Williams, K.A., Leduc-Lapierre, M., and Zipkin, E.F. *In press*. A comparative analysis of methods to identify waterbird hotspots. *Methods in Ecology and Evolution*.
- Saunders, S.P., Farr, M.T., Wright, A.D., Bahlai, C.A., Ribeiro Jr., J.W., Rossman, S., Sussman, A.L., Arnold, T.W., and Zipkin, E.F. 2019. Disentangling data discrepancies with integrated population models. *Ecology* 100(6): e02714.
- Ligi, S.D. and Sussman, A.L. 2016. Results of the 2009-2014 Loudoun County bird atlas. *The Raven: Journal of the Virginia Society of Ornithology* 87(1): 3-17.
- Zipkin, E.F., Kinlan, B.P., Sussman, A., Rypkema, D., Wimer, and M., O'Connell, A.F. 2015. Statistical guidelines for assessing marine avian hotspots and coldspots: A case study on wind energy development in the U.S. Atlantic Ocean. *Biological Conservation* 191: 216-223.

### *Online*

- Wimer, M. and Sussman, A. [North American BBA Explorer](#). USGS Patuxent Wildlife Res Ctr, Laurel, MD.

### *GIS products and data summaries*

- Ligi, S. 2019. Birds of Loudoun: A Guide Based on the 2009-2014 Loudoun County Bird Atlas. Lynchburg, VA: PIP Printing. 214 pp.
- Renfrew, R.B. 2013. The Second Atlas of Breeding Birds of Vermont. Lebanon, NH: University Press of New England. 572 pp.
- Kinlan, B.P., Zipkin, E.F., O'Connell, A.F., and Caldow, C. 2012. Statistical analyses to support guidelines for marine avian sampling: final report. U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs, Herndon, VA. OCS Study BOEM 2012-101. NOAA Technical Memorandum NOS NCCOS 158. xiv+77 pp.
- Ellison, W.G. 2010. Second Atlas of the Breeding Birds of Maryland and the District of Columbia. Baltimore, MD: The Johns Hopkins University Press. 520 pp.

## PRESENTATIONS

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*\*presenting author*

### *Invited*

- \*Leduc-Lapierre, M., \*Salas, L., \*[Sussman, A.](#), and \*Adams, E. 2017. Monitoring and mapping Great Lakes waterbirds to support management. [Webinar](#), Great Lakes Commission.
- \*Sussman, A. and Zipkin, E. 2016. Models to inform wildlife management decisions. Oral. Informing Great Lakes Open Water Bird Management Workshop, Ann Arbor, MI.
- \*Sussman, A., Wimer, M., and O'Connell, A. 2014. Atlantic seabird compendium. Oral. Atlantic Marine Bird Conservation Cooperative Workshop, Hershey, PA.

### *Contributed*

- \*Wilson, R., Davis, K., Farr, M., Lyons, J., Silverman, E., Sussman, A., and Zipkin, E. 2019. Aerial seabird surveys in northern Gulf of Mexico: Design considerations and preliminary results. Oral. Gulf of Mexico Oil Spill & Ecosystem Science Conference, New Orleans, LA.
- Adams, E., Gardner, B., Kenow, K., Koch, K., Leduc-Lapierre, M., Luukkonen, D., Monfils, M., \*Mueller, W., Pebbles, V., Sussman, A., Williams, K., and Zipkin, E. 2017. Monitoring and mapping of avian resources over the Great Lakes to support management. Poster. The International Association for Great Lakes Research 1<sup>st</sup> Annual State of Lake Michigan Conference, Green Bay, WI.

- Adams, E., Gardner, B., Kenow, K., Koch, K., \*Leduc-Lapierre, M., Luukkonen, D., Monfils, M., Mueller, W., Pebbles, V., Sussman, A., Williams, K., and Zipkin, E. 2017. Monitoring and mapping of avian resources over the Great Lakes to support management. Poster. Southeastern Wisconsin Conservation Summit, Port Washington, WI.
- \*Sussman, A., Gardner, B., Adams, E., Salas, L., Kenow, K., Luukkonen, D., Monfils, M., Mueller, W., Williams, K., Leduc-Lapierre, M., and Zipkin, E. 2017. Comparing approaches to identify waterbird hotspots. Oral. Joint AOS/SCO Meeting, East Lansing, MI.
- Adams, E., Gardner, B., Kenow, K., Koch, K., \*Leduc-Lapierre, M., Luukkonen, D., Monfils, M., Mueller, W., Pebbles, V., Sussman, A., Williams, K., and Zipkin, E. 2016. Monitoring and mapping of avian resources over the Great Lakes to support management. Poster. 8<sup>th</sup> National Summit on Coastal Restoration and Management & 25<sup>th</sup> Biennial Meeting of the Coastal Society, New Orleans, LA.
- \*Sussman, A. and Zipkin, E. 2015. Assessing seabird populations in response to offshore wind energy development in the Atlantic Outer Continental Shelf. Oral. 100<sup>th</sup> Ecological Society of America Annual Meeting, Baltimore, MD.
- \*Kinlan, B., Zipkin, E., O'Connell, A., Sussman, A., Wimer, M., and Caldow, C. 2013. Statistical analyses to support guidelines for marine avian sampling. Oral. Atlantic Marine Bird Conservation Cooperative Workshop, Charleston, SC.
- \*Kinlan, B., Zipkin, E., O'Connell, A., Sussman, A., Wimer, M., and Caldow, C. 2012. Statistical analyses to support guidelines for marine avian sampling. Oral. BOEM Headquarters, Herndon, VA.
- \*Rypkema, D., Kinlan, B., Zipkin, E., Sussman, A., Wimer, M., and O'Connell, A. 2012. Modeling seabird group size: implications for ecological assessments. Oral. NOAA Office of Education, Science and Education Symposium, Silver Spring, MD.
- \*Zipkin, E., Kinlan, B., Sussman, A., Wimer, M., and O'Connell, A. 2012. Statistical guidelines for sampling marine avian populations. Oral. 4<sup>th</sup> International Wildlife Management Congress, Durban, South Africa.
- \*Sushinsky J., Sussman, A., and Wimer, M. 2009. The North American breeding bird atlas. Poster. ESRI Federal Users Conference, Washington, D.C.
- \*Sussman, A., Wimer, M., and Peterjohn, B. 2008. Examining species range changes based on successive rounds of breeding bird atlases. Poster. 126<sup>th</sup> Meeting of the American Ornithologists' Union, Portland, OR.
- \*Wimer, M., Peterjohn, B., Griffin, N., Ott, A., Sussman, A., and Hopkins, J. 2008. A North American breeding bird atlas? Poster. 4<sup>th</sup> International Partners in Flight Conference, McAllen, TX.
- \*Sussman, A. and Lavoie, N. 2008. Controlled and liberal hunting of white-tailed deer on local public lands. Poster. Dept. of Entomology and Wildlife Ecology Senior Symposium, University of Delaware, Newark, DE.

## **PROFESSIONAL SERVICE & OUTREACH**

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- Exhibit contributor, [\*Michigan Bird Conservation Stories\*](#) – Michigan State University Museum (2017-2018)
- Planning committee chair, 1<sup>st</sup> annual Ecology, Evolutionary Biology, and Behavior Research Symposium – Michigan State University (2016-2017)
- Planning committee, Informing Great Lakes Open Water Bird Management Workshop – Ann Arbor, MI (2015-2016)
- President, Student Chapter of the Wildlife Society – University of Delaware (2007-2008)
- Founder, Student Chapter of the Wildlife Society – University of Delaware (2007)
- President, Wildlife Conservation Club – University of Delaware (2006-2007)

## **PROFESSIONAL AFFILIATIONS**

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American Birding Association  
American Ornithological Society  
Ecological Society of America  
Maryland Ornithological Society  
The Wildlife Society

## **PROFESSIONAL TRAINING & EXPERTISE**

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CPR/First Aid; Water Ditching & Survival/T-HUET (Tropical Helicopter Underwater Escape Training) including at-sea survival and Personnel Transfer Basket/Swing Rope; Aviation Training: basic safety, mishap review, transportation of hazardous materials, general awareness & security, and crew resource management; bird expertise: familiar with North American birds (including marine bird species), spatial patterns and distributions, and identification.

## **INTERNATIONAL EXPERIENCE**

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Antarctica and Argentina study abroad (studied penguins) – University of Delaware (2008)  
Tanzania study abroad (studied African wildlife) – University of Delaware (2007)