

Sara E. Hansen

Researcher and Data Professional

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ACADEMIC PREPARATION

- 2025 Ph.D. Earth and Ecosystem Science, Central Michigan University, Mount Pleasant, MI
- 2019 B.S. Ecology, Evolution, and Biodiversity (with Distinction), University of Michigan, Ann Arbor, MI

PROFESSIONAL EXPERIENCE

- 2020 – 2025 Graduate Research Assistant, Central Michigan University, Mount Pleasant, MI
- 2017 Entomology and Plant Disease Intern, Dow Gardens, Midland, MI
- 2016 – 2017 Research Assistant, Undergraduate Research Opportunity Program, University of Michigan, Ann Arbor, MI

CERTIFICATIONS AND PROFESSIONAL DEVELOPMENT

- 2025 NASA Open Science 101 Training, Don't Use This Code
- 2024 Data Science Professional Certification, DataCamp
- 2024 Data Literacy Certification, DataCamp
- 2024 CITI Program Certifications, Central Michigan University:
Data or Specimens Only Research; Field Studies and Wildlife; Responsible Conduct of Research; Social and Behavioral Research; Wildlife Research; Working with the Institutional Animal Care and Use Committee (IACUC)
- 2023 Adult CPR/AED, Pediatric CPR, and First Aid Certification, American Red Cross
- 2023 Faculty Mentoring Network, Ecological Society of America and Biodiversity Literacy in Undergraduate Education
- 2021 Advanced Geospatial Analysis, Institute for Modeling Collaboration and Innovation, University of Idaho
- 2020 Open Standards for the Practice of Conservation, Center for Wildlife Studies

KEY SKILLS

Data collection, entry, cleaning, and processing
Addressing data requests via queries and professional reports
Statistical data analysis, including machine learning
Data visualization via tables, maps, graphs, and dashboards
Technical and non-technical presentations and publications
Project, grant, and budget management
Meeting and survey facilitation

KEY TECHNOLOGIES

R programming language
Structured Query Language (SQL)
Tableau
ESRI ArcGIS
GitHub
Microsoft Excel, Access, Word, and PowerPoint
Google Sheets, Docs, Slides, and Forms
Meeting and collaboration platforms (Zoom, Teams, WebEx)

AWARDS

- 2024 Central Michigan University's Office of Research and Graduate Studies Student Performance, Exhibition, Competition, or Presentation Grant and Department of Biology Student Meeting Grant. **S.E. Hansen**. For the Presentation: Data-centric species distribution modeling of invasive European frog-bit (*Hydrocharis morsus-ranae* L.). \$550
- 2023 Ecological Society of America and Biodiversity Literacy in Undergraduate Education's Biodiversity Faculty Mentoring Network. **S.E. Hansen**. For the Open Education Resource: Building Biodiversity Datasets for Invasive Species. \$1,000
- 2022 Botanical Society of America and American Society of Plant Taxonomists' Botanical Advocacy and Service Grant. **S.E. Hansen**, R. Ewing, A.K. Monfils. For the Proposal: Creating Inclusive Resources for Botanical Science Education. \$1,000

PUBLICATIONS (updated 2025-05-15)

- Hansen, S.E.**, M.J. Monfils, R.A. Hackett, R.T. Goebel, and A.K. Monfils. 2024. Data-centric species distribution modeling: Impacts of modeler decisions in a case study of invasive European frog-bit. *Applications in Plant Sciences* 12: e11573. <https://doi.org/10.1002/aps3.11573>
- Hansen, S.E.**, A.K. Monfils, and D.L. Linton. 2023. Building biodiversity datasets for invasive species. *Teaching Issues and Experiments in Ecology* 19: 3. https://tiee.esa.org/vol/v19/issues/data_sets/hansen/abstract.html
- Hansen, S.E.**, B.C. Cahill, R.A. Hackett, M.J. Monfils, R.T. Goebel, J.A. Macklin, S. Asencio, and A.K. Monfils. 2022. Aggregated occurrence records of invasive European frog-bit (*Hydrocharis morsus-ranae* L.) across North America. *Biodiversity Data Journal* 10: e77492. <https://doi.org/10.3897/BDJ.10.e77492>
- Hardisty, A., L. Ellwood, G. Nelson, B. Zimkus, J. Buschbom, W. Addink, R.K. Rabeler, J. Bates, A. Bentley, J. Fortes, **S.E. Hansen**, J. Macklin, A. Mast, J. Miller, A.K. Monfils, D.L. Paul, E. Wallis, and M. Webster. 2022. Digital Extended Specimens: Enabling an extensible network of biodiversity data records as integrated digital objects on the Internet. *BioScience: biac060*. <https://doi.org/10.1093/biosci/biac060>

PUBLISHED DATA RESOURCES (updated 2025-05-15)

- Hansen, S.E.**, M.J. Monfils, R.A. Hackett, R.T. Goebel, and A.K. Monfils. 2023. Data-centric species distribution modeling. Retrieved from <https://osf.io/y6meq/>
- Hansen, S.E.**, B.C. Cahill, R.A. Hackett, M.J. Monfils, R.T. Goebel, S. Asencio, and A.K. Monfils. 2022. Aggregated occurrence records of invasive European frog-bit (*Hydrocharis morsus-ranae* L.) across North America. Occurrence dataset. <https://doi.org/10.15468/jsab2y>

OPEN EDUCATION RESOURCES (updated 2025-05-15)

- Hansen, S.E.**, R. Ewing, D.L. Linton, and A.K. Monfils. 2025. The Process of Science: Introduction to Ecosystems, Conservation, and Team Science (Version 1.0). *Biodiversity Literacy in Undergraduate Education*, QUBES Educational Resources. <http://dx.doi.org/10.25334/B1EF-HM78> (327 total views; 130 total downloads)
- Hansen, S.E.**, A.K. Monfils, and D. Linton. 2023. Building Biodiversity Datasets for Invasive Species (Version 3.0). *Biodiversity Literacy in Undergraduate Education*, QUBES Educational Resources. <http://dx.doi.org/10.25334/7G20-HK17> (2522 total views; 796 total downloads)

CONTRIBUTED PROFESSIONAL PRESENTATIONS (updated 2025-05-15)

- Hansen, S.E.**, M.J. Monfils, R.A. Hackett, R.T. Goebel, and A.K. Monfils. 2024. Data-centric species distribution modeling of invasive European frog-bit (*Hydrocharis morsus-ranae* L.). Digital Data 2024. Virtual.
<http://dx.doi.org/10.13140/RG.2.2.26258.16321>
- Ewing, R., A.K. Monfils, and **S.E. Hansen**. 2024. Impactful images: Two different approaches to illustrating diversity and collaborative science in undergraduate ecology education. Ecological Society of America Annual meeting. Long Beach, California, USA.
- Hansen, S.E.**, M.J. Monfils, R.A. Hackett, R.T. Goebel, and A.K. Monfils. 2024. Data-centric species distribution modeling of invasive European frog-bit (*Hydrocharis morsus-ranae* L.). Botany 2024. Grand Rapids, Michigan, USA.
<http://dx.doi.org/10.13140/RG.2.2.25155.41760>
- Hansen, S.E.**, R. Ewing, and A.K. Monfils. 2023. Science identity and the process of science: Engaging undergraduates in biodiversity science and data. Society for the Preservation of Natural History Collections Annual Meeting. San Francisco, California, USA. <http://dx.doi.org/10.13140/RG.2.2.12212.63360>
- Monfils, A.K., and **S.E. Hansen**. 2023. Biodiversity science in the 21st century: Extending biological collections for enhanced research, conservation, and education. Biodiversity Research Seminar Series, Biology Research Centre, University of British Columbia.
- Hansen, S.E.**, N. Franz, and A.K. Monfils. 2022. Early career scientists are critical to the FAIR data pathway. Biodiversity Information Standards (TDWG) 2022. Virtual. Biodiversity Information Science and Standards 6: e90989.
<https://doi.org/10.3897/biss.6.90989>
- Hansen, S.E.**, R.A. Hackett, B.C. Cahill, D.L. Cuthrell, M.J. Monfils, M.W. Belitz, R. Goebel, L. Rowe, and A.K. Monfils. 2022. Applying the Digital Extended Specimen: building collections and integrating data. Digital Data 2022. Virtual.
<http://dx.doi.org/10.13140/RG.2.2.18923.52006>
- Monfils, A.K., **S.E. Hansen**, D. Linton, E.R. Ellwood, N. Douglas, and L. White. 2022. BLUE Data Network: Biodiversity data acumen for the 21st century workforce. Digital Data 2022. Virtual.
- Hansen, S.E.**, R. Ewing, and A.K. Monfils. 2022. Centering gender identity in biodiversity science and natural history collections. Society for the Preservation of Natural History Collections Annual Meeting. Edinburgh, Scotland, UK.
<http://dx.doi.org/10.13140/RG.2.2.15148.64647>
- Hansen, S.E.**, R.A. Hackett, B.C. Cahill, D.L. Cuthrell, M.J. Monfils, M.W. Belitz, R. Goebel, L. Rowe, and A.K. Monfils. 2022. Applying the Digital Extended Specimen: building collections and integrating data. Society for the Preservation of Natural History Collections Annual Meeting. Edinburgh, Scotland, UK.
<http://dx.doi.org/10.13140/RG.2.2.32345.29288>
- Hansen, S.E.**, R.A. Hackett, B.C. Cahill, D.L. Cuthrell, M.J. Monfils, M.W. Belitz, R. Goebel, L. Rowe, and A.K. Monfils. 2022. Applying the Digital Extended Specimen: building collections and integrating data. Botany 2022. Virtual.
<http://dx.doi.org/10.13140/RG.2.2.16826.36806>
- Hansen, S.E.**, D. Linton, and A.K. Monfils. 2022. Building Biodiversity Datasets: A BLUE module teaching core biodiversity data skills. Botany 2022. Virtual.
<http://dx.doi.org/10.13140/RG.2.2.16826.36806>
- Hansen, S.E.**, Buschbom, J., Karim, T., and A. Monfils. 2021. Building the Digital Extended Specimen: A case study of invasive European frog-bit (*Hydrocharis morsus-ranae* L.). Biodiversity Information Standards (TDWG) 2021. Virtual. Biodiversity Information Science and Standards 5: e73814. <https://doi.org/10.3897/biss.5.73814>

- Hansen, S.E.**, and A.K. Monfils. 2021. Building Biodiversity Datasets. Natural History Education DemoCamp 2021. Virtual.
- Hansen, S.E.**, B.C. Cahill, R.A. Hackett, M.J. Monfils, and A.K. Monfils. 2021. Biodiversity Data Management from Field Collection to Integration. Digital Data 2021. Virtual. <http://dx.doi.org/10.13140/RG.2.2.28989.84963>
- Hansen, S.E.**, B.C. Cahill, R.A. Hackett, M.J. Monfils, and A.K. Monfils. 2021. Aggregated Occurrence Data Informs Management of Invasive European Frog-bit. 64th Annual Conference of the International Association for Great Lakes Research. Virtual. <http://dx.doi.org/10.13140/RG.2.2.18504.08965>
- Hansen, S.E.**, B.C. Cahill, R.A. Hackett, M.J. Monfils, and A.K. Monfils. 2021. Biodiversity Data Management from Field Collection to Integration. Botany 2021. Virtual. <http://dx.doi.org/10.13140/RG.2.2.23537.25441>
- Cahill, B.C., R.T. Goebel, **S.E. Hansen**, and A.K. Monfils. 2021. European Frog-bit Phenology and Reproductive Biology in Michigan. Winter 2020/21 European Frog-bit Collaborative Workshop. Virtual.
- Cahill, B.C., **S.E. Hansen**, and A.K. Monfils. 2021. Adaptive Management of Invasive Aquatic Plants: A Case Study on European frog-bit. Botany 2021. Virtual. <http://dx.doi.org/10.13140/RG.2.2.18084.65923>
- Cahill, B.C., **S.E. Hansen**, and A.K. Monfils. 2021. Adaptive Management of Invasive Aquatic Plants: A Case Study of European frog-bit. North American Invasive Species Management Association Annual Conference. Virtual. <http://dx.doi.org/10.13140/RG.2.2.11373.77287>
- Cahill, B.C., **S.E. Hansen**, and A.K. Monfils. 2021. Development and Application of an Adaptive Management Framework for European Frog-bit (*Hydrocharis morsus-ranae* L.) Management in Michigan. Annual Meeting of the Society of Wetland Scientists. Virtual. <http://dx.doi.org/10.13140/RG.2.2.14729.21604>
- Cahill, B.C., **S.E. Hansen**, and A.K. Monfils. 2021. Development and Application of an Adaptive Management Framework for European Frog-bit Management. 64th Annual Conference of the International Association for Great Lakes Research. Virtual. <http://dx.doi.org/10.13140/RG.2.2.31506.43202>
- Cahill, B.C., D.L. Cuthrell, R.A. Hackett, M.J. Monfils, S. Warner, **S.E. Hansen**, A. Beaudette, M.W. Belitz, and A.K. Monfils. 2021. Bringing the Extended Specimen into Adaptive Management: Collections Informing Conservation. NatureServe Biodiversity Without Boundaries Conference. Virtual. <http://dx.doi.org/10.13140/RG.2.2.30814.15680>
- Cahill, B.C., **S.E. Hansen**, R.T. Goebel, and A.K. Monfils. 2021. European Frog-bit. Three Shore Cisma Spring Partner Meeting. Virtual.
- Hackett, R.A., **S.E. Hansen**, M.J. Monfils, and A.K. Monfils. 2021. Lessons in Data Collection, Management, and Dissemination Across Multiple Biodiversity Projects. Society for the Preservation of Natural History Collections Annual Meeting. Virtual. <http://dx.doi.org/10.13140/RG.2.2.14036.94081>
- Hackett, R.A., **S.E. Hansen**, A. Beaudette, M.J. Monfils, and A.K. Monfils. 2021. Lessons in Data Acquisition, Curation, and Dissemination Across Multiple Biodiversity Projects. NatureServe Biodiversity Without Boundaries Conference. Virtual.
- Monfils, A.K., B.C. Cahill, **S.E. Hansen**, R.A. Hackett, M.J. Monfils, M.W. Belitz, D.L. Cuthrell, S. LeSage, and S.E. Warner. 2021. Bringing the Extended Specimen into Adaptive Management: Collections Informing Conservation. Society for the Preservation of Natural History Collections Annual Meeting. Virtual. <http://dx.doi.org/10.13140/RG.2.2.34861.87522>
- Hansen, S.E.**, A. Teshager, and D. Scavia. 2017. Evaluating Water Quality Hotspots in the Maumee River Watershed. Undergraduate Research Opportunity Program (UROP) Annual Research Symposium, University of Michigan. Ann Arbor, MI. Poster.

INVITED PROFESSIONAL PRESENTATIONS (updated 2025-05-15)

- Hansen, S.E.**, M.J. Monfils, R.A. Hackett, R.T. Goebel, and A.K. Monfils. 2025. Data-centric species distribution modeling of invasive European frog-bit. Student Creative and Research Endeavors Exhibition (SCREE), Central Michigan University. Mount Pleasant, MI. Poster.
- Monfils, A.K., and **S.E. Hansen**. 2025. Michigan Poweshiek skipperling Habitat Team: Adaptive Management and Habitat Updates. Poweshiek skipperling International Partnership Annual Meeting. Hybrid.
- Hansen, S.E.**, A.K. Monfils, and D. Linton. 2024. Building Biodiversity Datasets for Invasive Species: A BLUE module for core data skills. Ecology Society of America 4DEE Extravaganza. Virtual.
- Monfils, A.K., and **S.E. Hansen**. 2024. Michigan Poweshiek skipperling Habitat Team: Adaptive Management and Habitat Updates. Poweshiek skipperling International Partnership Annual Meeting. Hybrid.
- Rowe, L., D.L. Cuthrell, M.J. Monfils, R.A. Hackett, **S.E. Hansen**, and A.K. Monfils. 2022. 2021/2022 Update for MNFI/CMU. Poweshiek skipperling International Partnership Annual Meeting. Virtual.
- Monfils, A.K., B.C. Cahill, R. Goebel, **S.E. Hansen**, A. Beaudette, M.J. Monfils, R. Hackett, and Y. Lee. 2021. European Frog-Bit – Aquatic Invasive Species in Michigan. Central Michigan University Clark Library Virtual Seminar Series. Virtual.

REPORTS AND PROFESSIONAL DOCUMENTS (updated 2025-05-15)

- Hansen, S.E.**, A.K. Monfils, D.L. Cuthrell, L. Rowe, R.A. Hackett, and M.J. Monfils. 2025. Michigan Poweshiek skipperling Habitat Adaptive Management Framework: 2023 – 2024 Prescribed Fire Assessment. Central Michigan University, Mount Pleasant, MI.
- Hansen, S.E.**, A.K. Monfils, D.L. Cuthrell, L. Rowe, R.A. Hackett, and M.J. Monfils. 2024. Poweshiek skipperling [*Oarisma poweshiek* (Parker, 1870)] in Michigan prairie fens: Research and best practices. Central Michigan University, Mount Pleasant, MI.
- Hansen, S.E.**, A.K. Monfils, D.L. Cuthrell, L. Rowe, R.A. Hackett, and M.J. Monfils. 2024. Plant Diversity Research Conducted in Grand River Fen in 2023 and Next Steps. Central Michigan University, Mount Pleasant, MI.
- Hansen, S.E.**, A.K. Monfils, D.L. Cuthrell, L. Rowe, R.A. Hackett, and M.J. Monfils. 2024. 2023 Addendum for Status and Strategy for Michigan Prairie Fen Monitoring and Management: Big Valley Fen. Central Michigan University, Mount Pleasant, MI.
- Hansen, S.E.**, A.K. Monfils, D.L. Cuthrell, L. Rowe, R.A. Hackett, and M.J. Monfils. 2024. 2023 Addendum for Status and Strategy for Michigan Prairie Fen Monitoring and Management: Long Lake Fen. Central Michigan University, Mount Pleasant, MI.
- Hansen, S.E.**, A.K. Monfils, D.L. Cuthrell, L. Rowe, R.A. Hackett, and M.J. Monfils. 2023. Michigan Poweshiek Habitat Adaptive Management Outline.
<http://dx.doi.org/10.13140/RG.2.2.29723.85280>
- Hansen, S.E.**, A.K. Monfils, D.L. Cuthrell, L. Rowe, R.A. Hackett, and M.J. Monfils. 2023. Status and Strategy for Michigan Prairie Fen Monitoring and Management: Big Valley Fen. Central Michigan University, Mount Pleasant, MI.
- Hansen, S.E.**, A.K. Monfils, D.L. Cuthrell, L. Rowe, R.A. Hackett, and M.J. Monfils. 2023. Status and Strategy for Michigan Prairie Fen Monitoring and Management: Brandt Road Fen. Central Michigan University, Mount Pleasant, MI.
- Hansen, S.E.**, A.K. Monfils, D.L. Cuthrell, L. Rowe, R.A. Hackett, and M.J. Monfils. 2023. Status and Strategy for Michigan Prairie Fen Monitoring and Management: Long Lake Fen. Central Michigan University, Mount Pleasant, MI.
- Monfils, A.K., M.J. Monfils, B.C. Cahill, R.T. Goebel, **S.E. Hansen**, R.A. Hackett, and Y. Lee. 2021. Final Report on European Frog-bit: Enhancing Control and Assessing Impacts and Management. Central Michigan University, Mount Pleasant, MI.
<http://dx.doi.org/10.13140/RG.2.2.36773.01766>

Cahill, B.C., R.T. Goebel, **S.E. Hansen**, and A.K. Monfils. 2021. European Frog-bit (*Hydrocharis morsus-ranae* L.) in Michigan: Stakeholder Awareness, Perceptions, and Attitudes. Central Michigan University, Mount Pleasant, MI.
<http://dx.doi.org/10.13140/RG.2.2.28384.40962>

MEDIA CONTRIBUTIONS (updated 2025-05-15)

Contributor to The Poweshiek Post. 2022, 2023, 2024, 2025. *Poweshiek skipperling International Partnership* [internal newsletter].

Interviewed for "Hidden Gem – CMU Herbarium." 2022. *Central Michigan Life*.

<https://www.cm-life.com/multimedia/e1e11d19-4636-44d8-8579-ea077f7455a6>

PROFESSIONAL ACTIVITIES AND SERVICE (updated 2025-05-15)

2025	Reviewer for <i>Biodiversity and Conservation</i>
2024-2025	Invited participant in BIOFAIR (Building an Integrated, Open, Findable, Accessible, Interoperable, and Reusable) Data Network Stakeholder Listening Sessions and Workshops
2022-2025	Organizer for Michigan Poweshiek skipperling Habitat Team workshops and International Poweshiek skipperling Partnership Habitat Team Sessions
2021-2025	Judge for the Flint Regional Science and Engineering Fair
2023	Moderator and organizer for the Diversity and Identity in Biodiversity Science Careers Workshop , Society for the Preservation of Natural History Collections Annual Meeting
2021	Society for the Preservation of Natural History Collections Biodiversity Crisis Committee
2020-2021	Planning Team for Winter 2021/21 and December 2021 European Frog-bit Collaborative Workshops

PROFESSIONAL MEMBERSHIPS (updated 2025-05-15)

2020 – present	European Frog-bit Collaborative
2021 – present	Poweshiek skipperling International Partnership
2022 – present	Society for the Preservation of Natural History Collections
2022 – present	Botanical Society of America
2024 – present	Society of Herbarium Curators