

SHANE C. LISHAWA

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Research Associate

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Education

M.S. Forestry, University of Vermont, 2005
B.S. Resource Ecology and Management, University of Michigan, 2001

Professional Experience

Research Associate: Loyola University Chicago. Chicago, Illinois: 2007-present
Adjunct Instructor: University of Michigan Biological Station. Pellston, Michigan: 2007
Field Biologist / GIS specialist: Wisconsin Department of Natural Resources. Madison, Wisconsin: 2005-2007
Research Assistant: University of Vermont, School of Environment and Natural Resources.
Burlington, Vermont: 2003-2005

Courses Taught

Ecology Lab	Field Botany
Solutions to Environmental Problems	Field Ornithology
General Ecology	Biological Research
Field Natural History	Environmental Research Capstone

Professional Contributions

Peer reviewer

Aquatic Botany	Environmental Pollution
Aquatic Sciences	Freshwater Biology
Biological Conservation	Hydrobiologia
Biological Invasions	Journal of Great Lakes Research
Chemistry and Ecology	Remote Sensing
Communications Earth and Environment	Restoration Ecology
Ecological Indicators	Wetlands
Ecosphere	Wetlands Ecology and Management
Environmental Engineering	

Grant reviewer

Unites States Environmental Protection Agency; Environmental Education grants

Professional Society Memberships

The Society for Wetland Scientists (SWS)
Society for Ecological Restoration (SER)

Experience Narrative

Working with students and a broad network of collaborators, I conduct research on wetland ecosystems, invasive species, and ecological restoration. Since 2008, my work has focused on examining the ecological impacts of invasive plant species on Great Lakes coastal wetlands and evaluating the ecological responses to restoration. I am driven to find sustainable solutions to environmental problems through innovation and collaboration between academic researchers, managers, community organizations, and tribal nations.

Synergistic Activities

Steering committee member: UNESCO *Obtawaing Biosphere Region* (2022-present).
Technical Advisor, Wetland and Invasive Species Working Groups: St. Marys River Coastal Wetland Resilience Planning Project (2023-present).
Technical Advisor: Obtawaing Biosphere Region Coastal Resilience Planning Project (2023-present).

Synergistic Activities cont.

Faculty mentor: *Loyola Undergraduate Research Opportunities Program* (2008-present).

Faculty mentor: *Loyola University Carbon Fellowship Program* (2008-present).

Research mentor for NSF funded Research Experience for Pre-Service Teachers, *Pre-service Teacher Research Experience in Biodiversity Studies* (2021-present).

Research mentor for NSF funded Research Experience for Undergraduates, *Biosphere-Atmosphere interactions in a Changing Global Environment* at UMBS (2009-2022).

Presenter: *Taller de Metodos y Estimacion de Carbono en Suelos* (US Forest Service International Program 2017). Taught 15 forestry professionals from Latin American and Caribbean about sampling wetland soils.

Environmental educator: Developed and delivered curriculum presenting Great Lakes ecological research to Michigan Native American Tribal students for the *Native Youth Program, Camp Kinomaage* (2011-2017).

Co-developed a biodiesel outreach education program; worked with 25 local high schools (2008).

Developed curricula for and co-taught Solutions to Environmental Problems (STEP) courses through the Loyola Center for Urban Environmental Research and Policy (2007-2008). In STEP, students from diverse majors, including Natural Sciences, Social Sciences, Communication, Business, Economics, Education, and Law, work collaboratively to address environmental issues on campus and in the community.

Grants and Awards

Extramural Grants Received

United States Fish and Wildlife Service. Great Lakes Restoration Initiative. \$1,166,288 (May 2023) Controlling invasive plants, improving waterbird habitat, and reducing nutrient run-off through biomass harvest, on-site biochar production, and biochar reapplication. Brian Ohsowski and **Shane Lishawa**

Bureau of Indian Affairs, Circle of Flight Program. \$54,601. (July 2023) Testing the Potential for a Manoomin Habitat Suitability Model to Increase Detections of Existing Populations and to Inform Targeted Planting in the 1836 Ceded Territory. Eric Clark and **Shane Lishawa**

Illinois Tollway \$203,000. (October 2022) Evaluating Innovative Techniques to Enhance Tollway Bioswale Capacity to Reduce Chloride and Heavy Metal Runoff. \$203,000. Illinois Tollway. Brian Ohsowski and **Shane Lishawa**

Michigan Invasive Species Grant Program 2021. \$387,100. (May 2022) Optimizing Early Detection of Aquatic Invasive Species in Michigan Using Novel Range Expansion Forecasts. **Shane Lishawa**, Brian Ohsowski, Andrew Monks.

Bureau of Indian Affairs, Circle of Flight Program. \$62,043. (February 2021) Determining environmental tolerances of Manoomin in the St. Marys River and developing innovative monitoring methodologies using unmanned aerial vehicles. Eric Clark, Dani Fegan, **Shane Lishawa**, Andrew Monks, Robert Pillsbury

National Fish and Wildlife Foundation: Sustain Our Great Lakes Program \$185,215 (October 2020) Enhancing biodiversity and habitat complexity in Cheboygan Marsh through hybrid cattail control. **Shane Lishawa** and Andrew Monks.

Illinois Tollway \$298,000. (April 2019) Remediating runoff and creating renewable energy by harvesting invasive plants from Illinois Tollway detention basins. Beth Lawrence, **Shane Lishawa**, Andrew Monks.

Michigan Departments of Natural Resources, Environmental Quality and Agricultural and Rural Development: Invasive Species Grant Program. \$386,083 (February 2018) *Statewide risk assessment and adaptive management of European frogbit*. **Shane Lishawa**, Jodi Brandt, Eric Clark, Andrew Monks.

Environmental Protection Agency: People, Prosperity, and the Planet Award. Phase I. \$15,000 (2017) *Anaerobic digestion for a zero waste urban campus*. **Shane C. Lishawa**, Zach Waickman, Andrew Monks, Brendan Carson, Zhenwei Zhu. Grant funds will be used to assess the potential to establish an anaerobic digester on the Loyola campus and to support undergraduate research experiences.

United States Department of Agriculture: Michigan Conservation Innovation Grant 2017. \$74,976 (2017). *Recycling watershed nutrients by using wetland invasive plants to improve crop soil health and fertility, while reducing downstream nutrient loads*. Douglas Pearsall, **Shane Lishawa**, Eric Dunton, Dennis Albert.

Wisconsin Department of Natural Resources. \$8,000 (August 2016) *Horicon Marsh invasive cattail harvest and anaerobic digestion*. **Shane Lishawa** and Brendan Carson.

Extramural Grants Received cont.

- Environmental Protection Agency: Great Lakes Restoration Initiative. \$649,695 (July 2016) *Increasing biodiversity and habitat complexity in invaded wetlands*. **Shane Lishawa**, Nancy Tuchman, Eric Clark, Amy Schrank, Dennis Albert, Nicholas Reo, Beth Lawrence.
- Michigan Departments of Natural Resources, Environmental Quality and Agricultural and Rural Development: Invasive Species Grant Program. \$283,510 (March 2016) *Novel approaches to European frogbit detection and management*. **Shane Lishawa**, Eric Clark, Dennis Albert, Jodi Brandt, Nick Cassel.
- Saginaw Bay Watershed Initiative Network. \$10,000 (December 2015) *Managing nutrients at Shiawassee National Wildlife Refuge through invasive cattail harvesting*. **Shane Lishawa**, Brendan Carson, Dennis Albert.
- Cleveland Museum of Natural History. \$4,895 (September 2015) *Harvesting Phragmites from Mentor Marsh*. **Shane Lishawa** and Brendan Carson. Grant funds used for a *Phragmites australis* harvest and biomass utilization pilot project.
- Environmental Protection Agency: Great Lakes Restoration Initiative. Invasive species prevention and control. \$499,727 (February 2014) *Furthering capacity to maintain high quality coastal wetlands in northern Michigan*. Nancy Tuchman, **Shane Lishawa**, Dennis Albert, Beth Lawrence, Gregory Zimmerman, and Knute Nadelhoffer.
- Environmental Protection Agency: People, Prosperity, and the Planet Award. Phase II. \$90,000 (June 2013) *From pollution to possibility: A sustainable and interdisciplinary solution to biodiesel production wastewater*. David Crumrine, Lane Vail, and **Shane Lishawa**. Grant funds used to develop an integrated biological waste-water treatment facility and to support undergraduate research experiences.
- United States Department of Agriculture. \$28,500 (September 2012) *Sustainable urban agricultural education for a food secure and sustainable future: A workshop series*. Nancy Tuchman, Lane Vail, **Shane Lishawa**, Stephen Mitten, and Christopher Peterson. Seed-grant for curriculum development and the development of a Large-scale Comprehensive Initiative grant proposal in 2014.
- Environmental Protection Agency: People, Prosperity, and the Planet Award. Phase I. \$15,000 (September 2012) *From pollution to possibility: A sustainable and interdisciplinary solution to biodiesel production wastewater*. David Crumrine, Lane Vail, and **Shane Lishawa**. Grant funds used to develop an integrated biological waste-water treatment facility and to support undergraduate research experiences.
- Environmental Protection Agency: Great Lakes Restoration Initiative. Innovative Environmental approaches. \$449,603 (September 2010) *A sustainable approach for restoring wetland biodiversity*. Nancy Tuchman, Dennis Albert, and **Shane Lishawa**.
- Environmental Protection Agency: People, Prosperity, and the Planet Award. \$75,000 (April, 2008) *Biodiesel Education: Green-collar recruiting and environmental education for the next generation (BE:GREEN)*. Nancy Tuchman, Daniel Larkin, **Shane Lishawa**, Alison Varty, and Luke Beasley. Grant funds used start a comprehensive renewable energy high school outreach program.

Intramural Grants Received

- Office of Research Services Research Support Grant \$5,000 (2020). Supporting preliminary data collection leading to a grant application: *Evaluating the long-term resilience of Great Lakes coastal wetlands experiencing climate change and invasive species impacts*.
- Office of Research Services Research Support Grant \$5,000 (2019). Supporting preliminary data collection leading to a grant application: *Investigating the ecological impacts of an emerging invasive plant on Great Lakes wetlands: European Frogbit (Hydrocharis morsus-ranae)*.
- Office of Research Services Manuscript Publication Assistance grant \$780 (2019). Partially supported the publication fees for the **Ecology and Evolution** article: *Invasive species removal increases species and phylogenetic diversity of wetland plant communities*.
- Office of Research Services Manuscript Publication Assistance grant \$750 (2018). Partially supported the publication fees for the **Ecosphere** article: *Harvesting invasive plants to reduce nutrient loads and produce bioenergy: an assessment of Great Lakes coastal wetlands*.

Intramural Grants Received cont.

- Office of Research Services Manuscript Publication Assistance grant \$1,000 (2017). Partially supported the publication fees for the **Frontiers in Plant Science** article: *Mechanical harvesting effectively controls young *Typha* spp. invasion and unmanned aerial vehicle data enhances post-treatment monitoring.*
- Provost's Summer Research Fellowship \$60,000 (2014) Increasing the resilience of Great Lakes coastal wetlands to invasive species through Indigenous community-researcher collaboration. Nancy Tuchman, Shane Lishawa, and Brian Ohsowski.
- Core Curriculum Innovation Award. \$5,000 (2008) Core Curriculum Committee and the Provost's Office. Shane Lishawa and Alison Varty. For designing an environmental studies course that fulfills the University's Civic Engagement and Leadership core value area.

Publications and presentations**Peer-reviewed journal**

- Albert DA, Lishawa SC, Scholtens BG, Voss EG. **In Review.** Dynamic stability in a Great Lakes coastal wetland: a 50-year study. Mark Brinson Review Article. **Wetlands.**
- Lishawa SC, Monks AM, Lawrence BA, Fegen DL, Clark E. **In Review** Muskrat disturbances and their analogues reduce invasive plant dominance within a Great Lakes coastal wetland. **Freshwater Science.**
- Jochems L, Requena J, Brandt J, Caughlin T, Monks A, Hopping K, Williamson M, Lishawa S. 2024. Active remote sensing data and dispersal processes improve predictions for an invasive aquatic plant during a climatic extreme in Great Lakes coastal wetlands. **Journal of Environmental Management.** 370, 122610.
- Schurkamp SJ, Lishawa SC, Ohsowski BM. 2024. Wetland plant species and biochar amendments lead to variable salinity reduction in roadway-associated soils. **Science of The Total Environment.** 2024 Aug 26:175801.
- Panda A, Lishawa SC, Tallant J, Fegen, D. 2024. Modeling habitat suitability of wild rice (*Zizania* spp.) to inform restoration efforts in Michigan, U.S.A. **Restoration Ecology,** e14205. doi.org/10.1111/rec.14205
- Varty AK, Cronan A, Mauchmar J, Lishawa SC. 2024. Examining effects of elevated temperature, pH, and salinity on early growth of *Zizania palustris* L. to improve restoration outcomes in Michigan lakes. **Wetlands Ecology and Management.** https://doi.org/10.1007/s11273-024-09999-8
- Ohsowski BM, Redding C, Geddes P, Lishawa SC. 2024. Field-based measurement tools to distinguish clonal *Typha* taxa and estimate biomass: A resource for conservation and restoration. **Frontiers in Plant Science.** 15 (2024): 1348144. https://doi.org/10.3389/fpls.2024.1348144
- Monks AM, Lishawa SC, Ohsowski BM, Schurkamp SJ, Lawrence BA. 2023. Complementarity of road salt and heavy metal pollutant removal through invasive *Typha* and *Phragmites* harvest in urban wetland detention basins. **Ecological Engineering.** 194,107058.
- Lishawa SC, Schrank AJ, Lawrence BA, Monks AM, Albert DA. 2023. Aquatic connectivity treatments increase fish and macroinvertebrate use of *Typha*-invaded Great Lakes coastal wetlands. **Freshwater Biology.** DOI: 10.1111/fwb.14141
- Johnson OJ, Panda A, Lishawa SC, Lawrence BA. 2021. Repeated large-scale mechanical treatment of invasive *Typha* under increasing water levels promotes floating mat formation and wetland methane emissions. **Science of The Total Environment.** 790, 147920. https://doi.org/10.1016/j.scitotenv.2021.147920
- Jochems, LW, Brandt J, Monks A, Cattau, M, Kolarik N, Tallant J, Lishawa S. 2021. Comparison of different analytical strategies for classifying invasive wetland vegetation in imagery from unpiloted aerial systems (UAS). **Remote Sensing.** 13, 4733.
- Lishawa SC, Dunton EM, Pearsall DR, Monks AM, Himmler KB, Carson BD, Loges B, Albert DA. 2020. Wetland waterbird food resources increased by harvesting invasive cattails. **Journal of Wildlife Management.** 84(7) 1326-1337. DOI: 10.1002/jwmg.21912
- Schrank AJ, Lishawa SC. 2019. Invasive cattail reduces fish diversity and abundance in a Great Lakes coastal wetland. **Journal of Great Lakes Research.** 45(6) 1251-1259. DOI: /10.1016/j.jglr.2019.09.013.
- Monks AM, Lishawa SC, Wellons KC, Albert DA, Mudrzyński B, Wilcox DA. 2019. European frogbit (*Hydrocharis morsus-ranae*) invasion facilitated by non-native cattails (*Typha*) in the Laurentian Great Lakes. **Journal of Great Lakes Research.** 45(5) 912-20. DOI: 10.1016/j.jglr.2019.07.005
- Johnson OF, Lishawa SC, Lawrence BA. 2019. Submerged harvest reduces invasive *Typha* and increases soil macronutrient availability. **Plant and Soil.** 442(1-2) 157-67. DOI:10.1007/s11104-019-04171-1

Peer-reviewed journal publications cont.

- Bansal S, Lishawa SC, Newman S, Tangen BA, Wilcox D, et al. 2019. *Typha* (cattail) invasion in North American wetlands: Biology, regional problems, impacts, ecosystem Services, and management. **Wetlands**. 39 (4) 645-684. DOI:10.1007/s13157-019-01174-7
- Lishawa SC, Lawrence BA, Albert DA, Larkin DJ, Tuchman NC. 2019. Invasive species removal increases species and phylogenetic diversity of wetland plant communities. **Ecology and Evolution**. DOI:10.1002/ece3.5188
- Keyport S, Carson BD, Johnson O, Lawrence BA, Lishawa SC, Tuchman NC, Kelly JJ. 2019. Effects of experimental harvesting of an invasive hybrid cattail on wetland structure and function. **Restoration Ecology**. 27 (2) 389-398. DOI:10.1111/rec.12859
- Carson BD, Lishawa SC, Tuchman NC, Monks AM, Lawrence BA, Albert DA. 2018. Harvesting invasive plants to reduce nutrient loads and produce bioenergy: an assessment of Great Lakes coastal wetlands. **Ecosphere**. 9 (6): e02320. 10.1002/ecs2.2320
- Lishawa SC, Carson BD, Brandt JS, Tallant JM, Reo NJ, Albert DA, Monks AM, Lautenbach JM, Clark E. 2017. Mechanical harvesting effectively controls young *Typha* spp. invasion and unmanned aerial vehicle data enhances post-treatment monitoring. **Frontiers in Plant Science**. 8 (619): 1-14.
- Lawrence BA, Lishawa SC, Hurst N, Castillo BT, Tuchman NC. 2017. Wetland invasion by *Typha* × *glauca* increases soil methane emissions. **Aquatic Botany**. 137 (1): 80-87.
- Lawrence BA, Bourke K, Lishawa SC, Tuchman NC. 2016. *Typha* invasion associated with reduced aquatic macroinvertebrate abundance in northern Lake Huron coastal wetlands. **Journal of Great Lakes Research**. 42 (6): 1412-1419.
- Lawrence BA, Lishawa SC, Rodriguez Y, Tuchman NC. 2016. Herbicide management of invasive cattail (*Typha* × *glauca*) increases porewater nutrient concentrations. **Wetlands Ecology and Management**. 24 (4): 457-467.
- Lishawa SC, Lawrence BA, Albert DA, Tuchman NC. 2015. Biomass harvest of invasive *Typha* promotes plant diversity in a Great Lakes coastal wetland. **Restoration Ecology**. 23 (3): 228-237.
- Lishawa SC, Jankowski-Giefer KJ, Geddes P, Larkin DJ, Monks AM, Tuchman NC. 2014. Denitrification in a Laurentian Great Lakes coastal wetland invaded by hybrid cattail (*Typha* × *glauca*). **Aquatic Sciences**. 76 (4): 483-495.
- Lishawa SC, Treering DJ, Vail LM, McKenna O, Grimm EC, Tuchman NC. 2013. Reconstructing plant invasions using historical aerial imagery and pollen core analysis: *Typha* in the Laurentian Great Lakes. **Diversity and Distributions**. 19 (1): 14-28.
- Larkin DJ, Lishawa SC, Tuchman NC. 2012. Appropriation of Nitrogen by the invasive cattail *Typha* × *glauca*. **Aquatic Botany**. 100 (1):62-66.
- Larkin DJ, Freyman MJ, Lishawa SC, Geddes P, Tuchman NC. 2012. Mechanisms of dominance by the invasive hybrid cattail *Typha* X *glauca*. **Biological Invasions**. 14 (1): 65-77.
- Mitchell ME, Lishawa SC, Geddes P, Larkin DJ, Treering DJ, Tuchman NC. 2011. Time-dependent impacts of cattail (*Typha* x *glauca*) invasion in a Great Lakes coastal wetland complex. **Wetlands**. 31 (6): 1143-1149.
- Lishawa SC, Albert DA, Tuchman NC. 2010. Water level decline promotes *Typha* X *glauca* establishment and vegetation change in Great Lakes coastal wetlands. **Wetlands**. 30 (6): 1085-1096.
- Lishawa SC, Schubel AT, Tuchman NC, Varty AK. 2010. Sustainability education as a catalyst for university and community partnerships. **Metropolitan Universities**. 21 (1): 58-72.
- Lishawa SC, Bergdahl DR, Costa S. 2007. Winter conditions in eastern hemlock and mixed hardwood deer wintering areas of Vermont. **Canadian Journal of Forest Research**. 37 (3): 697-703.

Book chapters

- Varty AK, Lishawa SC, Tuchman NC. 2011. Sustainability education through an interdisciplinary and service-learning approach. In **Social Responsibility and Sustainability: Multidisciplinary Perspectives Through Service Learning**. Ed. T. McDonald. Stylus Publishing. New York, NY. 35-58.
- Varty A, Lishawa S. Biodiesel education in high schools. 2009. **Teaching green: The high school years**. Eds. Tim Grant and Gail Littlejohn. New Society Publishers. Gloria Island, Canada. March 2009.

Technical reports

Bansal S, Tangen B, Lishawa S, Newman S, Wilcox D. 2020. A review of Cattail (*Typha*) invasion in North American wetlands. U.S. Geologic Survey Fact Sheet 2019-3076, 6p. <https://doi.org/10.3133/fs20193076>.

M.S. Thesis

Lishawa SC, 2005. Hemlock woolly adelgid risk assessment in deer wintering areas of southern Vermont. University of Vermont.

Manuscripts in preparation

- Ohsowski BM, Dzyaky S, Aleladia B, Risdal A, Copps C, Michaels M, Bednard E, Palmquist M, Schurkamp S, Wenner M, Lishawa SC. In Preparation. Coalescing field and greenhouse biochar studies: Connecting application rate and weight. *Science of the Total Environment*. **Expected submission: Fall 2024.**
- Ohsowski BM, Roxo SB, McGreal M, Lishawa SC. In Preparation. Amending wetland soils with biochar limits invasive plant growth by reducing nutrient availability. *Ecology Letters*. **Expected submission: Fall 2024.**
- Mohammadi R, Ohsowski BM, Monks AM, Banerjee S, Lishawa SC. In Preparation. A novel habitat suitability modeling approach for early detection of aquatic invasive plants: A case study with European frogbit in the Great Lakes. *Ecological Applications*. **Expected submission: Fall 2024.**
- St. John L, Lishawa SC, Ohsowski BM, Monks AM, Tuchman NC. In Preparation. Effects of invasive *Typha* × *glauca* and *Hydrocharis morsus-ranae* on aquatic macroinvertebrates in a Lake Huron coastal marsh. *Biological Invasions*. **Expected submission: Fall 2024.**
- Lishawa SC, Ohsowski BM, Lawrence BA. In Preparation. Long-term changes in a Great Lakes *Typha* marsh driven by water level fluctuations. *Journal undecided*. **Expected submission: Winter 2024-2025.**
- Berke K, Monks AM, Ohsowski B, Lawrence BA, Tuchman NC, Lishawa SC. In Preparation. Repeated annual harvesting of invasive *Typha* increases plant diversity and structural complexity of a degraded Great Lakes coastal wetland. *Wetlands*. **Expected submission: Spring 2025.**
- Clark E, Fegan D, Lautenbach J, Lishawa SC. In Preparation. Landcover predicts marshbird use in northern Great Lakes coastal wetlands. *Journal undecided*. **Expected submission: Spring 2025.**
- Lishawa SC, Clark E, Fegan D, Schurkamp S, Lautenbach J. In Preparation. Cattail harvest increases marshbird diversity and use in northern Great Lakes coastal wetlands. *Journal undecided*. **Expected submission: Spring 2025.**

Papers presented and published abstracts

- Lishawa SC, Monks AM, Lawrence BA, Fegan D, Clark E. Patterns of invasive plant reduction and environmental change associated with muskrat disturbance in a Great Lakes coastal wetland. **European frog-bit collaborative, Annual Meeting Nov. 30, 2023. Virtual meeting.**
- Jochems L, Brandt J, Lishawa S, Monks A, Schurkamp S, Kingdon C. Synthetic aperture radar and LiDAR-based topobathymetry improve predictions of an invasive aquatic plant during climatic extremes. **Ecological Society of America Annual Meeting. Portland OR, Aug. 6-11, 2023**
- Proctor E, Fegan D, Johnston E, Shaw E, Lishawa S. Reciprocal Research: Centering community in partnerships with Indigenous Nations and expert panel. **2022 Great Lakes Coastal Symposium. Sault Ste. Marie MI, September 12-21, 2022.**
- Fegan D, Lishawa SC, Monks AM, Krumwiede B. Monitoring Manoomin (Wild Rice) from the water and the sky: A comparison of approaches. **Joint Aquatic Sciences Meeting. Grand Rapids MI, May 14-20, 2022.**
- Lishawa SC, Shrank AJ, Lawrence BA, Monks AM, and Albert DA. *Typha* removal increases the abundance and diversity of aquatic taxa in Great Lakes coastal wetlands. **Joint Aquatic Sciences Meeting. Grand Rapids MI, May 14-20, 2022.**
- Monks A, Lishawa SC. Managing Invasive Cattails and European Frog-bit in a Great Lakes Coastal Marsh: Biodiversity Impacts. **Joint Aquatic Sciences Meeting. Grand Rapids MI, May 14-20, 2022.**
- Schurkamp S, Lishawa S, Monks A, Lawrence BA. Harvesting invasive plants to reduce salinization of freshwater systems. **Joint Aquatic Sciences Meeting. Grand Rapids MI, May 14-20, 2022.**
- Thilges E, Monks A, Lishawa S, Ohsowski B. Impacts of Great Lakes *Typha* invasion on anuran species. Lishawa SC. **Joint Aquatic Sciences Meeting. Grand Rapids MI, May 14-20, 2022.**

Papers presented and published abstracts cont.

- Schrank A, Lishawa S. Managing invasive cattail to increase biodiversity and habitat complexity in Great Lakes coastal wetlands. **Society of Wetland Scientists Annual Meeting. June 1-10, 2021**
- Pearsall D, Lishawa S, Dunton E, Monks, A, Herbert, M, May C, Verdeja A, Albert D, Fink W, Ross, J. Improving wetlands, soil health and water quality through invasive plant harvest and biomass use. **International Association of Great Lakes Research. 64th Annual Conference on Great Lakes Research. May 17-21st 2021.**
- Lishawa SC, Dunton EM, Pearsall DR, Monks AM, Himmler KB, Carson BD, Loges B, Albert DA. Wetland waterbird food resources increase by harvesting invasive cattails. **Society of Ecological Restoration, Midwest Great Lakes Chapter Annual Meeting, April 19-29, 2021. Virtual meeting**
- Lawrence B. Lishawa S. Deicing salts as an emerging driver of wetland change. **Society of Wetland Scientists annual meeting; Evaluating wetland restoration under global change – how to improve best practices (Symposium). December 1, 2020. Virtual meeting.**
- Schrank A, Lishawa S. Invasive cattail reduces fish diversity and abundance in a Great Lakes coastal wetland. **American Fisheries Society Annual Meeting. September 14-25, 2020.**
- Pearsall DR, Dunton E, Lishawa S, Herbert ME, Monks A, May C, Carson B, Wickerham B, Fales B, Lemunyon J. 2019. Cattail biomass: A new soil amendment to improve soil health and reduce wind erosion. **ASA, CSSA and SSSA International Annual Meetings. San Antonio, TX, Nov. 10-13, 2019,** <https://scisoc.confex.com/scisoc/2019am/meetingapp.cgi/Paper/122895>.
- Lishawa SC. 2018. Invasive *Typha* spp. Facilitates Invasive European Frogbit (*Hydrocharis morsus-ranae*) in Great Lakes Coastal Wetlands. **Society of Wetland Scientists Annual Meeting. Denver, CO. May 29-June 1, 2018.**
- Johnson O. Lishawa SC, Lawrence BA. How does Invasive Plant Management affect Carbon Cycling in a Great Lakes Coastal Wetland? **Society of Wetland Scientists Annual Meeting. Denver, CO. May 29-June 1, 2018.**
- Tuchman NC, Lishawa SC. 2018. Nutrient uptake potential by invasive *Typha × glauca* in Great Lakes coastal wetlands: A 10-year longitudinal study. **Society of Freshwater Science Annual Meeting. Detroit, MI. May 20-24, 2018.**
- Lishawa SC. 2017. Ecological impacts of invasive cattails in the Great Lakes. **3rd International Sustainable Wetland Plant Management Conference: Hybrid cattail management- Promises and perils, Fargo, ND.** (May 2017).
- Lishawa SC. 2017. Sustainable *Typha* management in the Great Lakes. **3rd International Sustainable Wetland Plant Management Conference: Hybrid cattail management- Promises and perils, Fargo, ND.** (May 2017).
- Berke K, Carson B, Lishawa S, Monks A, Tuchman N. 2017. Nutrient removal in Great Lakes coastal wetlands through successive harvesting of the invasive hybrid cattail (*Typha × glauca*). **Loyola University Chicago Climate Change Conference, Chicago, IL** (March, 2017).
- Lishawa SC, Carson BD, Brandt J, Tallant J, Reo N, Albert D, Monks A, Lautenbach J, Clark E. 2017. Control of *Typha × glauca* invasion by mechanical harvesting: comparing field to remotely-sensed data. **Loyola University Chicago Climate Change Conference, Chicago, IL** (March, 2017).
- Berke K, Carson B, Lishawa S, Monks A, Tuchman N. 2017. Nutrient removal in Great Lakes coastal wetlands through successive harvesting of the invasive hybrid cattail (*Typha × glauca*). **Midwest-Great Lakes Chapter Society of Ecological Restoration Conference, Grand Rapids, MI** (March 2017).
- Lishawa SC. 2016. Adaptive restoration of Great Lakes coastal wetland ecosystems. Invited guest speaker. **University of Michigan Biological Station Winter Research Meeting. Ann Arbor, MI.** (February 2016).
- Lishawa SC. 2016. Harvesting invasive plants from Great Lakes coastal wetlands increases biodiversity, removes nutrients, and provides biomass for green energy. Invited guest speaker. **Water and Land Management in the Bioeconomy Workshop. A regional bioeconomy approach: Partnerships for natural solutions. Winnipeg, Manitoba, Canada** (February 2016).
- Lishawa SC. 2015. Harvesting invasive plants from Great Lakes coastal wetlands increases biodiversity, removes nutrients, and provides biomass for green energy. Invited guest speaker. **Interagency Ecological Restoration Quality Committee** (October 2015).

Papers presented and published abstracts cont.

- Lawrence BA, Lishawa SC, Tuchman NC, Albert DA. 2013. Promoting biodiversity and biofuels through *Typha* harvest. **Society for Ecological Restoration World Conference. Madison, WI.** (October 2013).
- Albert DA, Lishawa SC, Lawrence BA, Tuchman NC. 2013. Great Lakes Coastal Monitoring Provides Baseline Plant Data for Sustainable Wetland Restoration Project. **5th Annual Conference on Ecosystem Restoration, Schaumburg, IL.** (July 2013).
- Lawrence BA, Lishawa SC, Tuchman NC, Albert DA. 2013. Converting invasive plants to bioenergy: An innovative approach to restoring Great Lakes coastal wetlands. **Society for Wetland Scientists annual meeting. Duluth, MN.** (June 2013).
- Lawrence BA, Lishawa SC, Tuchman NC, Albert DA. 2013. Converting invasive plants to bioenergy: an innovative approach to restoring Great Lakes coastal wetlands. **University of Michigan Biological Station Winter Meeting. Ann Arbor, MI.** (February 2013).
- Lishawa SC, Lawrence BA, Albert DA, Tuchman NC. 2012. Plant community response to experimental *Typha* × *glauca* restoration in Great Lakes coastal wetlands. **Chicago Wilderness Congress. Chicago, IL.** (November 2012).
- Greene K, Tuchman NC, Lawrence B, Lishawa SC. 2012. Effects of *Typha x glauca* on aquatic macroinvertebrate communities in Northern Lake Huron Coastal Wetlands. **17th Annual Conference of the Wisconsin Wetlands Association, Lake Geneva, WI.** (February 2012).
- McKenna, O, Treering D, Miceli D, Vail L, Lishawa S, Tuchman NC. 2010. Reconstructing the history of emergent wetland plant invasions using aerial photo interpretation. **Joint annual meeting of the North American Benthological Society and the American Society of Limnology and Oceanography, Santa Fe, NM.** (June 2010).
- Mitchell, ME., Geddes P, Larkin D, Lishawa S, Treering D, Tuchman NC. 2010. Constructing a timeline of *Typha x glauca* invasion: Ecological impacts after more than fifty years of invasion in Great Lakes coastal wetlands. **Joint annual meeting of the North American Benthological Society and the American Society of Limnology and Oceanography, Santa Fe, NM.** (June 2010).
- Varty A, Lishawa S, Tuchman N. 2008. Engaging students in campus sustainability initiatives through innovative courses. **Proceedings of the Association for the Advancement of Sustainability in Higher Education 2nd Biennial Expo. Raleigh, NC.** (November 2008).
- Lishawa SC, Bergdahl DR. 2005. Hemlock woolly adelgid risk assessment in deer wintering areas of southern Vermont. **Proceedings of the Third Symposium on Hemlock Woolly Adelgid in the Eastern United States. Asheville NC.** (February 2005).

Undergraduate Student Supervision

- 2023-present Spencer Dzyacky. LUROP Carbon Fellow (co-mentor). Evaluating the effects of wave action and freighter wakes on the distribution of wetlands and invasive plant species in the Great Lakes.
- 2023-present Alex Risdal. LUROP SES Fellow and Lee Botts Great Lakes Stewardship Fellow (co-mentor). Evaluating the impacts of invasive cattail and European frog-bit on northern wild rice (*Zizania palustris*) growth and germination.
- 2023-present Madeline Palmquist. LUROP SES Fellow and Lee Botts Great Lakes Stewardship Fellow (co-mentor). Impact of hybrid cattail (*Typha* × *glauca*) on waterbird diversity at Shiawassee National Wildlife Refuge.
- 2023-present Eva Bednard. LUROP Mulcahy Fellow (co-mentor). Assessing biochar's influence on soil nutrients and native plants in Great Lakes coastal wetlands
- 2022-2023 Spencer Dzyacky. LUROP SES Fellow and Lee Botts Great Lakes Stewardship Fellow (co-mentor).
- 2022-2023 Skylynn Roxo. LUROP SES Fellow and Lee Botts Great Lakes Stewardship Fellow (co-mentor).
- 2022 Anna Cronan. National Science Foundation, Research Experience for Undergraduates Fellow. The effects of specific conductivity on germination of wild rice (*Zizania palustris*).
- 2022 Timothee Staley. National Science Foundation, Research Experience for Teachers Fellow. Comparing the environmental conditions of two northern Michigan lakes.
- 2020-2022 Beth Thilges. LUROP SES Fellow and Lee Botts Great Lakes Stewardship Fellow. Impacts of Great Lakes *Typha* Invasion on Anuran Species (co-mentor).

Undergraduate supervision cont.

- 2020-2022 Cassidy Redding. LUROP SES Fellow and Lee Botts Great Lakes Stewardship Fellow. Developing *Typha x glauca* and *Phragmites australis* biomass prediction models using plant morphological characteristics (co-mentor).
- 2021 Mitch McGreal. LUROP SES Fellow and Lee Botts Great Lakes Stewardship Fellow. Examining the effects of biochar as a potential soil remediation tool for the control of invasive *Typha x glauca* in Great Lakes coastal wetlands (co-mentor).
- 2021 Sydney Durkin. LUROP Provost Fellowship. Determining suitable habitat for *Zizania palustris* in the St. Marys River (co-mentor).
- 2019-2021 Maggie O'Brien. LUROP Carbon Fellow. How does time since invasion by hybrid cattail affect wetland soil microbial communities (co-mentor).
- 2019 Rose Mohammadi. LUROP IES Fellow. Constructing a habitat suitability model for invasive *Hydrocharis morsus-ranae* (co-mentor).
- 2019 Gavin Chisholm. LUROP Mulcahy Fellow. Evaluating the Impacts of *Typha x glauca* and European Frogbit on Algal Growth in Great Lakes Coastal Wetlands (co-mentor)
- 2018 Olivia Niosi. LUROP IES Fellow. Using watershed mapping to examine nutrient inputs of Great Lake coastal wetlands (co-mentor).
- 2018 Maggie O'Brien. LUROP IES Fellow. Evaluating the seed banks of *Typha*-invaded wetlands (co-mentor).
- 2018 Rene Belleville. LUROP IES Fellow. *Typha x glauca* and waterfowl food availability in Great Lakes coastal wetlands (co-mentor).
- 2017 Mason Majszak. LUROP Mulcahy Fellow. Curation and database design for 15 years of multi-institution wetland restoration data in Great Lakes Coastal Wetlands (co-mentor).
- 2015-2016 Leanne Ngo. LUROP Carbon Fellow. Invasive plant biomass harvesting as a means of conducting phytoremediation of contaminated sediments in the Grand Calumet River (co-mentor).
- 2015 Samantha Keyport. IES Undergraduate Fellow. Microbial community structures in the Cheboygan Marsh (co-mentor).
- 2015 Olivia Johnson. University of Michigan Biological Station summer research fellow. Effects of *Typha* management on wetland greenhouse gas emissions (co-mentor).
- 2015 Matt Connors. University of Michigan Biological Station summer research fellow. Effects of *Typha* management on wetland carbon storage (co-mentor).
- 2013 – 2014 Emily Tuchman. Student in Loyola University Chicago *Biological Research and Independent Study in Biology* courses (mentor).
- 2013 Yarency Rodriguez. University of Michigan Biological Station. National Science Foundation Research Experience for Undergraduates (mentor).
- 2013 Nia Hurst. University of Michigan Biological Station. National Science Foundation Research Experience for Undergraduates (mentor).
- 2013 – 2014 Tapas Patel. Loyola University Chicago. Institute of Environmental Sustainability. Undergraduate Research Fellow (mentor).
- 2011 – 2013 Erin Throop CUERP Undergraduate Fellow (co-mentor).
- 2011 Buck Castillo. University of Michigan Biological Station. National Science Foundation Research Experience for Undergraduates (mentor).
- 2008 – 2011 Owen McKenna. Undergraduate research assistant (co-mentor).
- 2010 Anna Sjodin. University of Michigan Biological Station. National Science Foundation Research Experience for Undergraduates (mentor).
- 2008 – 2010 Michal Olszewski. Undergraduate research assistant (co-mentor).
- 2009 Andrew Monks. University of Michigan Biological Station. National Science Foundation Research Experience for Undergraduates (mentor).
- 2008 – 2009 David Miceli. Undergraduate research assistant (co-mentor).

Undergraduate supervision cont.

2008 Kaitlin Koch. Undergraduate research assistant (co-mentor).