Christopher A. Halsch

Postdoctoral Associate
Binghamton University

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Appointments

Binghamton University 2024 – Present
Postdoctoral Associate

Education

University of Nevada, Reno 2018 – 2023
Doctorate - *Ecology, Evolution, and Conservation Biology*
Advisor: Matthew L. Forister
Committee: Sarah Bisbing, Lee Dyer, James Fordyce, Perry Williams

University of California, Irvine 2011– 2015
Bachelor of Science – *Earth System Science*
Bachelor of Science – *Ecology and Evolution*

Grants, Scholarships, and Awards

College of Science Outstanding Graduate Assistant Award ($500)	2022
USDA AFRI NIFA Predoctoral Fellowship ($117,700)	2022
The Garden Club of America Centennial Pollinator Fellowship ($2,500)	2021
Hitchcock Fellowship ($13,300)	2021
Jerry and Betty Wilson Scholarship ($4,000)	2021
Joan Mosenthal DeWind Award ($5,000)	2021
Ron Leuschner Memorial Fund for Research on the Lepidoptera ($500)	2021
Ben & Beatrice Edwards Biology Scholarship ($1,200)	2020 – 2021
Outstanding Graduate Student Scholarship ($500)	2020
Graduate Research Fellowship Program (Honorable Mention)	2020

Publications (in reverse chronological order)

**Denotes undergraduate student*

17. **Halsch, C.A.**, Shapiro, A.M., Forister, M.L., Grames, E.M. 2025. Shifting baselines in North America's longest-running butterfly monitoring program. *In review*.

16. Dittemore, C.M., Anderson, A., Code, A., Lenard, A., Douglas, M.R., **Halsch, C.A.**, Forister, M.L. 2025. Pesticide contamination of two urban areas has implications for insect conservation and green space management. *In review*.

15. Christensen, T., **Halsch, C.A.**, Dyer, L. Smilanich, A.M., Shapiro, A.M., Forister, M.L. 2025. Specialized flower visitation in montane butterflies is associated with positive population trajectories over time. *In review*.

14. Reis, G.A., Forister, M.L., **Halsch, C.A.**, Dittemore, C.M., Shapiro, A.M., Gompert, Z. 2025. Temporal occupancy distributions reveal diverse responses to climatic variation in montane butterflies. *In review*.

13. Foster E.M.*, Dombroskie J.J., **Halsch C.A.**, Powell T.H.Q., Grames E.M. 2025. Changes in phenology, voltinism and species presence over 135 years of moth community sampling. *In review*.

12. **Halsch, C.A**., Elphick, C.S., Bahlai, C.A., Forister, M.L., Wagner, D.L., Ware, D.L., Grames, E.M. 2025. Meta-synthesis reveals interconnections among drivers of insect biodiversity loss. *Bioscience. In press*.

11. **Halsch, C.A**., Shapiro, A.M., Thorne, J.H., Rodman, K.C., Parra, A., Dyer, L.A., Gompert, Z., Smilanich A.M., and Forister, M.L. 2024. Thirty-six years of butterflies, snow, and plant productivity reveal negative impacts of warmer winters and increased productivity on montane species. *Global Change Biology e17044*. doi: https://doi.org/10.1111/gcb.17044.

10. Forister, M.L., Grames, E.M., **Halsch, C.A.**, Burls, K.J., Carroll, C.F., Bell, K.L., Jahner, J.P., Bradford, T., Zhang, J., Cong, Q., Grishin, N.V., Glassberg, J., Shapiro, A.M., and Riecke, T.V. 2023. Assessing risk for butterflies in the context of climate change, demographic uncertainty, and heterogenous data sources. *Ecological Monographs* 93: e1584. doi: 10.1002/ecm.1584

9. Forister M.L., Black S.H., Elphick C.S., Grames E.M., **Halsch C.A.**, Schultz C.B., Wagner, D.L. 2023. Insect monitoring programs tell us about what is left not what is already lost. *Conservation Letters* e12951. doi:10.1111/conl.12951

8. **Halsch, C.A.**, Zullo, D,J*., and Forister, M.L. 2023. Additive and interactive pressures of anthropogenic stressors on an insect herbivore. *Proceedings of the Royal Academy B* 290: 2022243. doi:10.1098/rspb.2022.2431

7. **Halsch, C.A.**, Hoyle, S.M., Code, A., Fordyce, J.A., Forister, M.L. (2022) Milkweed plants bought at nurseries may expose monarch caterpillars to harmful pesticide residues. *Biological Conservation* 273: 109699. doi:10.1016/j.biocon.2022.109699

6. Forister, M.L., **Halsch, C.A.**, Nice, C.C., Fordyce, J.A., Dilts, T.E., Oliver, J.C., Prudic, K.L., Shapiro, A.M., Wilson, J.K., and Glassberg, J. 2021. Fewer butterflies seen by

community scientists across the warming and drying landscapes of the American West. *Science* 371: 1042-1045. doi:10.1126/science.abe5585

5. **Halsch, C.A.**, Shapiro, A.M., Fordyce, J.A., Nice, C.C., Thorne, J.H., Waetjen, D.P., and Forister, M.L. 2021. Insects and recent climate change. *Proceedings of the National Academy of Sciences* 118: e2002543117. doi:10.1073/pnas.2002543117

4. **Halsch, C.A.**, Code, A., Hoyle, S.M., Fordyce, J.A., Baert, N., and Forister, M.L. 2020. Pesticide contamination of milkweeds across the agricultural, urban and open spaces of low elevation Northern California. *Frontiers in Ecology and Evolution*. doi:10.3389/fevo.2020.00162

3. **Halsch, C.A.**, Shapiro, A.M., Thorne, J.H., Waetjen, D.P., and Forister, M.L. 2020. A winner in the Anthropocene: changing host plant distribution explains geographic range expansion in the gulf fritillary butterfly. *Ecological Entomology*. doi:10.1111/een.12845

2. Kimball, S., Long, J., Ludovise, S., Ta, P., Schmidt, K.**, Halsch, C.A.**, and Magliano, K. 2019. Impacts of Competition and Herbivory on Native Plants in a Community-Engaged, Adaptively Managed Restoration Experiment. *Conservation Science and Practice*. doi:10.1111/csp2.122

1. Tamura, N.*, Lulow, M.E., **Halsch, C.A.***, Major, M.R., Balazs, K.R., Austin, P., Huxman, T.E., and Kimball, S. 2017. Effectiveness of seed sowing techniques for sloped restoration sites. *Restoration Ecology*. doi:10.1111/rec.12515

Teaching

BIOL 750 – Research Design Spring 2020, Spring 2021

Developed lessons and led labs introducing graduate students to R coding and statistical analysis for ecological data.

EECB 751 – Philosophy of Science Fall 2020

Designed and implemented a graduate course on the philosophy of science, focusing on topics related to ecology, evolution, and conservation biology.

BIOL 437 – Entomology Spring 2019

Organized and led labs on insect identification and taxonomy.

Crystal Cove Conservancy, Newport Beach, CA Spring 2016- Spring 2018

Designed and implemented citizen science education programs for K-12 students in partnership with California State Parks and University of California Irvine researchers.

Professional Presentations

Seminars, plenaries, and keynotes

Halsch, C.A. 2025. *Direct and indirect effects of climate on montane butterflies*. University of Nevada, Reno EECB program colloquium. Reno, Nevada, USA.

Halsch, C.A., Shapiro, A.M., Parra, A.S., Rodman, K.C., Thorne, J.H., Forister, M.L. 2023. *Direct and indirect effects of climate on montane butterflies*. Butterfly Conservation symposium plenary speaker. Bedford, UK.

Invited presentations

Halsch, C.A., Forister, M.L., Grames, E.M. 2025. *One day to rule them all*. Status of Insect RCN annual meeting. Virtual meeting.

Halsch, C. A., Grames, E.M. 2024. *Death by 852 cuts: connections among drivers of insect decline*. Entomological Society of America. Phoenix, AZ, USA.

Halsch, C.A., Forister, M.L., Grames, E.M. 2024. *Considering the risk of pesticide exposure across already stressed populations*. International Congress of Entomology. Kyoto, Japan.

Halsch, C.A. 2023. *Pesticide risk to butterflies in the western US*. Entomological Society of America Pacific Branch. Seattle, WA, USA.

Halsch, C.A., Selvaggio, S., Code, A. *Rethinking Nursery Production Practices for Safe Pollinator Plants*. 2023. Tri-State Green Industry Conference. Glendale, OH, USA.

Halsch, C. A., Forister, M.L., Grames, E.M., Burls, K.J., Carroll, C.F., Bell, K.L., Jahner, J.P., Bradford, T., Zhang, J., Cong, Q., Grishin, N.V., Glassberg, J., Shapiro, A.M., and Riecke, T. V. 2022. *Integrating heterogenous data sources to assess the status and risk of butterflies to Anthropogenic threats in the western United States*. International Congress of Entomology. Helsinki, Finland.

Halsch, C.A., Shapiro, A.M., Parra, A.S., Rodman, K.C., Thorne, J.H., Forister, M.L. 2022. *Separating the direct and indirect effects of climate change on butterflies in the Sierra Nevada, CA using remote sensing data*. Entomological Society of America Pacific Branch. Santa Rosa, CA, USA.

Halsch, C.A., Shapiro, A.M., Forister, M.L. 2020. *Understanding global change and butterflies with Western North America's longest-running monitoring study*. Entomological Society of America. Virtual meeting.

Contributed presentations

Halsch, C.A. 2023. *The direct and indirect effects of climate stressors on montane butterflies*. Ecological Society of America. Portland, OR, USA.

Halsch, C.A., Shapiro, A.M., Parra, A.S., Thorne, J.H., Forister, M.L. 2022. *Climate change and butterflies: Can we use long-term data to separate direct effects on individuals from plant-mediated indirect effects?* Entomological Society of America. Denver, CO, USA.

Halsch, C.A., Shapiro, A.M., Forister, M.L. 2019. *An Expanding Fritness Landscape: Minimum Temperatures, Host Plant Distribution, and the Expansion of the Gulf Fritillary*. Entomological Society of America. St. Louis, MO, USA.

Halsch, C.A., Shapiro, A.M., Forister, M.L. 2019. *The Spatial and Temporal Story of the Expanding Gulf Fritillary Butterfly*. The Lepidopterist's Society. Davis, CA, USA.

Professional Service

Organized Symposia

Halsch, C.A., Grames, E.M. 2024. *Insect Decline RCN Symposium and Workshop*. Entomological Society of America.

Halsch, C.A., Grames, E.M., Wagner, D.L. 2022. *Insect decline in the Anthropocene*. International Congress of Entomological Society.

Journal reviews

Annals of the Entomological Society of America, Biodiversity and Conservation, Biological Conservation, Biological Reviews, Current Opinion in Insect Science, Diversity and Distributions, Ecological Applications, *Ecological Entomology, Ecology, Ecology Letters, Ecosphere, Global Change Biology*, *Global Ecology and Biogeography, Journal of Biogeography*, *Journal of Insect Conservation*, *Journal of Pest Science, Landscape Ecology, PeerJ*

Other professional service

Handling editor – Journal of Lost Species	2025-Present
Grant reviewer – NSF	2025
Board member – Nevada Bugs and Butterflies	2020-2022
President – UNR EECB Graduate Program	2020-2021
President – Plant-Animal Interactions Club	2018-2020

Public Outreach

Community service

Co-founder – Nerd Nite, Reno, Community Engagement and Lecture Series 2019-2023
Organized monthly lecture series for audiences of over 100 people where speakers present research.

Public presentations

Halsch, C.A., Grames, E.M. 2024. *Death by 852 cuts: connections among drivers of insect decline*. Status of Insects RCN webinar series.

Halsch, C.A. 2023. *Beyond Basic Butterflies.* Nerd Nite Reno public lecture series.

Halsch, C.A. 2022. *The state of butterflies in the western US*. University of Nevada extension: Cultivating healthy plants: An IPM webinar series.

Halsch, C.A. 2022. *Looking for pesticides in milkweeds sold in nurseries*. Xerces Society for Invertebrate Conservation.

Halsch, C.A. 2021. *Contamination of Marginal Spaces and the Role of Pesticides in Butterfly Declines*. Western Hummingbird Partnership.