Christopher A. Halsch

Doctoral Candidate
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Education

University of Nevada, Reno 2018 – Present
Doctoral Candidate - *Ecology, Evolution, and Conservation Biology*
Advisor: Matthew L. Forister

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
Winner, Student Competition for the President's Prize ($75)	2021
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

Halsch, C.A., Zullo, D., and Forister, M. L. (in review) Additive and interactive pressures of anthropogenic stressors on an insect herbivore.

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. (in review) Assessing risk for butterflies in the context of climate change, demographic uncertainty, and heterogenous data sources.

Forister M.L., Black S.H., Elphick C.S., Grames E.M., **Halsch C.A.**, Schultz C.B., Wagner, D.L. 2022. (in review) Insect monitoring programs tell us about what is left not what is already lost.

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

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

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

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

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

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

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 that introduced graduate students to R coding and statistical analysis for ecological data.

EECB 751 – Philosophy of Science Fall 2020
Designed and implemented graduate course on the philosophy of science, with a focus 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.

Volunteering and Public Outreach

Co-founder – Nerd Nite, Reno, Community Engagement and Lecture Series 2019-Present
President – Plant-Animal Interactions Club 2018-Present
Board member – Nevada Bugs and Butterflies 2020-2022

Presentations

Public outreach presentation, Cultivating healthy plants: An IPM webinar series. 2022. Halsch, C.A. *The state of butterflies in the western US*. **Invited talk**.

Public outreach presentation, Xerces Society for Invertebrate Conservation. 2022. Halsch, C.A. *Looking for pesticides in milkweeds sold in nurseries*. **Invited talk**.

International Congress of Entomology. 2022. 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. *Integrating heterogenous data sources to assess the status and risk of butterflies to Anthropogenic threats in the western United States*. **Symposium organizer**.

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

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

Entomological Society of America. 2022. Halsch, C.A., Shapiro, A.M., Parra, A.S., Thorne, J.H., Forister, M.L. 2021. *Climate change and butterflies: Can we use long-term data to separate direct effects on individuals from plant-mediated indirect effects?* **Contributed talk.**

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

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

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

Journal Reviews

Ecological Applications, Journal of Biogeography, Journal of Insect Conservation, Ecological Entomology, Global Change Biology, Annals of the Entomological Society of America, Landscape Ecology, Biodiversity and Conservation, Journal of Pest Science