Annie L. Henry

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Education

Ph.D. Biological Sciences – Ecology. University of Denver, Denver, CO 2021
Dissertation Advisor: Dr. Anna Sher; Understanding patterns and functional impacts of an invasive tree and its biological control in a riparian system

Graduate Certificate. Geographic Information Systems. University of Denver, Denver, CO 2015

B.A. Ecology and Evolutionary Biology; Geography. University of Colorado, Boulder. Boulder, CO 2011
Magna cum Laude. Thesis – Nitrogen Concentration in Lichens as a proxy for N deposition

Research Interests

Ecological Restoration | Spatial and Multivariate Analysis | Invasive Species

Community and Ecosystem Ecology | Science Communication | Human Dimensions of Restoration

Peer Reviewed Articles

10. **Henry, A.L.**, González, E., Bourgeois, B., Sher, A.A. 2021. Invasive tree cover covaries with environmental factors to explain the functional composition of riparian plant communities. *Oecologia.* https://doi.org/10.1007/s00442-021-04990-z

9. Clark, L.B., González, E., **Henry, A.L.**, Sher, A.A. A solution to treat mixed-type human datasets from socio-ecological systems. 2020. *Journal of Environmental Geography*. 13(51-60). https://doi.org/10.2478/jengeo-2020-0012

8. Sher, A.A., Clark, L., **Henry, A.L.**, Goetz, A.R.B., González, E., Tyagi, A., Simpson, I., Bourgeois, B. 2020. The human element of restoration success: Manager characteristics affect vegetation recovery following invasive *Tamarix* control. *Wetlands*. https://doi.org/10.1007/s13157-020-01370-w

7. Clark, L.B., **Henry, A.L.,** Lave, R., Sayre, N.F., González, E., Sher, A.A. 2019. Successful information exchange between restoration science and practice. *Restoration Ecology*. https://doi.org/10.1111/rec.12979

6. El Waer, H.N., **Henry, A.L.**, Merewether, K., Sher, A.A. 2018. "Invasion and restoration of western rivers dominated by *Tamarix* spp." In: Johnson, R.R., Carothers, S.W., Finch, D.M., Kingsley, K.J., Stanley, J.T., tech. eds. *Riparian research and management: Past, present, future: Volume 1.* Gen. Tech. Rep. RMRS-GTR-377. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. http://doi.org/10.2737/RMRS-GTR-377-CHAP4

5. González, E., Martínez-Fernandez, V., Shafroth, P.B., Sher, A.A., **Henry, A.L.**, Garófano-Gómez, V., Corneblit, Dov. 2018. Regeneration of *Salicaceae* riparian forests in Northern Hemisphere: A new framework and management tool. *Journal of Environmental Management* 218(74-387). https://doi.org/10.1016/j.jenvman.2018.04.069

4. **Henry, A.L.**, González, E., Robinson, W.W., Bourgeois, B., Sher, A.A. 2018. Spatial modeling improves understanding patterns of invasive species defoliation by a biocontrol herbivore. *Biological Invasions*. 20(3545-3562). https://doi.org/10.1007/s10530-018-1794-0

3. Sher, A.A., El Waer, H., González, E., Anderson, R., **Henry, A.L**., Biedron, R., Yue, P.P. 2018. Native species recovery after reduction of an invasive tree by biological control with and without active removal. *Ecological Engineering*. 111(167-175). https://doi.org/10.1016/j.ecoleng.2017.11.018

2. González, E., Sher, A.A., Anderson, R.M., Bay, R.F., Bean, D.W., Bissonnete, G.J., Bourgeois, B., Cooper, D.J., Dohrenwend, K., Eichhorst, K.D., El Waer, H., Dennard, D.K., Harms-Weissinger, R., **Henry, A.L.**, Makarick, L.J., Ostoja, S.M., Reynolds, L.V., Robinson, W.W., Shafroth, P.B. 2017. Vegetation response to invasive *Tamarix* control in southwestern U.S. rivers: A collaborative study including 416 sites. *Ecological Applications*. 27(6):1789-1804. https://doi.org/10.1002/eap.1566

1. González, E., Sher, A.A., Anderson, R.M., Bay, R.F., Bean, D.W., Bissonnete, G.J., Cooper, D.J., Dohrenwend, K., Eichhorst, K.D., El Waer, H., Kennard, D.K., Harms-Weissinger, R., **Henry, A.L.**, Makarick, L.J., Ostoja, S.M., Reynolds, L.V., Robinson, W.W., Shafroth, P.B., Tabacchi, E. 2017. Secondary invasions of noxious weeds associated with control of invasive *Tamarix* are frequent, idiosyncratic, and persistent. *Biological Conservation*. 213:106-114. https://doi.org/10.1016/j.biocon.2017.06.043

Manuscripts Submitted or in Advanced Stage of Preparation

2. **Henry, A.L.**, González, E., Shafroth, P.B., Bourgeois, B., Sher, A.A. A functional approach confirms the stability of plant community response to *Tamarix* defoliation. To be submitted to *Journal of Vegetation Science*.

1. Goetz, A.R.B., González, E., **Henry, A.L.**, Vidal, M., Shafroth, P., Sher, A.A. Tracing the monitoring and evaluation of *Tamarix* control and its outcomes in the American Southwest: a systematic review and meta-analysis. To be submitted to *Restoration Ecology*.

Published Abstracts and Presentations

21. **Henry, A.L.**, González, E. Bourgeois, B., Sher, A.A. 2021. Invasive tree covaries with environmental factors to explain riparian plant guilds. Ecological Society of America Annual Meeting. Virtual. Oral Presentation.

20. **Henry, A.L.**, González, E., Bourgeois, B., Sher, A.A. 2021. Riparian plant guilds to inform revegetation after invasive species removal. Society for Ecological Restoration World Conference. Virtual. Oral Presentation.

19. **Henry, A.L.**, González, E., Bourgeois, B., Sher, A.A. 2021. Cover of *Tamarix* covaries with regional and local environmental factors to explain the functional composition of riparian plant communities. RiversEdge West Riparian Restoration Annual Meeting. Virtual. Oral Presentation.

18. Goetz, A.R.B., **Henry, A.L.**, González, E., Sher, A.A. 2020. Predictors of plant functional traits in a novel ecosystem. ESA 2020 Annual Meeting. Virtual. Oral Presentation

17. Sher, A.A., **Henry, A.L.**, Clark L.B. Goetz A, González, E. 2020. Why do some restoration projects fail

and others succeed? A quantitative look at 243 sites for environmental, management, and social factors. RiversEdge West Riparian Restoration Annual Meeting. Grand Junction, Colorado (USA). Oral Presentation

16. Goetz, A., Sher, A.A., **Henry, A.L.**, González, E. 2020. Predictors of plant functional traits in a novel ecosystem. RiversEdge West (former Tamarisk Coalition) Annual Meeting. Grand Junction, Colorado (USA). Oral Presentation

15. Clark, L.B., **Henry, A.L.**, González, E., Lave, R., Sayre, N., Sher, A. 2019. The human ecology of *Tamarix* removal and native recovery in the Southwestern U.S. 15th Biennial Colorado Plateau Conference. Flagstaff, Arizona (USA). Oral Presentation.

14. **Henry, A.L.**, González, E., Sher, A.A. 2019. Impact of *Tamarix* biocontrol on understory plant community traits. RiversEdge West Riparian Restoration Conference. Phoenix, Arizona (USA). Poster Presentation.

13. Goetz A.R.B., **Henry, A.L.**, González, E., Sher, A.A. 2019. A functional approach to endangered bird habitat suitability in an invaded system. Biennial Conference of Science & Management on the Colorado Plateau & Southwest Region. Flagstaff, Arizona (USA). Oral Presentation

12. González, E., Martínez-Fernández, V., Shafroth, P.B., Sher, A.A., **Henry, A.L.**, Garófano-Gómez, V., Corenblit, D. 2019. Un Árbol de Decisión para Regenerar los Bosques de Salicaceae del Hemisferio Norte. III Congreso Ibérico de Restauración Fluvial "Restaura Ríos". Murcia (Spain). Oral Presentation

11. Clark, L.B., Sher, A.A., González, E., **Henry, A.L.,** Lave, R., Sayre, N. 2019. The human component of restoring *Tamarix* invaded land. Riparian Restoration Conference. Desert Botanical Gardens, Arizona (USA). Poster Presentation.

10. González, E., Martínez-Fernández, V., Shafroth, P.B., Sher, A.A., **Henry, A.L.**, Garófano-Gómez V, Corenblit D. 2019. A Decision Tree to Inform Restoration of Salicaceae Riparian Forests in the Northern Hemisphere. RiversEdge West (former Tamarisk Coalition) Annual Meeting. Phoenix, Arizona (USA). Poster Presentation

9. González, E., Martínez-Fernández, V., Shafroth, P.B., Sher, A.A., **Henry, A.L.**, Garófano-Gómez, V., Corenblit, D. 2019. A Decision Tree to Inform Restoration of Salicaceae Riparian Forests in the Northern Hemisphere. EcoVeg. Poster Presentation

8. **Henry A.L.**, González E., Sher A.A. 2018. Impact of dominant plant removal on riparian plant communities. Guild of Rocky Mountain Ecologists and Evolutionary Biologists. University of Colorado Mountain Research Station, Colorado (USA). Oral Presentation

7. González E, Martínez-Fernández V, Shafroth PB, Sher AA, **Henry A.L.**, Garófano-Gómez V, Corenblit D. 2018. A Decision Tree to Inform Restoration of Salicaceae Riparian Forests in the Northern Hemisphere. SWS 2018 Annual Meeting. Denver, Colorado (USA). Oral Presentation

6. **Henry, A.**, González E., Robinson, W.W., Bourgeois B., Sher A.A. 2017. Spatial modeling improves prediction for bio-control impact on invasive riparian tree. Entomology Society of America Annual Meeting. Denver, CO (USA). Oral Presentation

5. **Henry, A.**, González E., Robinson, W.W., Bourgeois B., Sher A.A. 2017. Spatial modeling improves prediction for bio-control impact on invasive riparian tree. HAR-CeRSER 2017 Conference. Fort Collins, CO (USA). Oral Presentation

4. **Henry, A.**, González E., Robinson, W.W., Bourgeois B., Sher A.A. 2017. Spatial patterns of beetle-induced defoliation of invasive tamarisk at the landscape level. Tamarisk Coalition Annual Meeting. Fort Collins, CO (USA). Oral Presentation

3. Sher A.A., **Henry A.**, González E., El Waer H., Anderson R.M. 2015. Plant community response to riparian invasive tree removal by bio-control vs. active means for 40 sites over five years. The 100th ESA Annual Meeting. Baltimore, Maryland (USA). Poster Presentation

2. **Henry A.**, González E., Robinson W., Bourgeois B., Sher A.A. 2015. Spatial patterns of beetle-induced defoliation of invasive tamarisk at the landscape level. The 100th ESA Annual Meeting. Baltimore, Maryland (USA). Oral Presentation

1. **Henry A.**, Sher A.A., Robinson W., Bourgeois B., González E. 2015. Patterns of bio-control beetle-induced mortality of tamarisk on a county scale. Tamarisk Coalition Annual Meeting. Albuquerque, New Mexico (USA). Oral Presentation

Technical Reports and Other Publications

3. **Henry, A.L.**, Sher, A.A., Primack, R.B., Morrison, R.A. Extinction, Causes of. Encyclopedia of Biodiversity, 3 ed. In press.

2. Sher, A.A, and **Henry, A**. 2015. 2014 Vegetation Monitoring on Uncompahgre Pilot Project (PP) Sites Associated with the Dolores River Restoration Partnership (DRRP). Tamarisk Coalition. 37 pages.

1. Sher, A.A., Anderson, R., **Henry**, A. and Kluvier, R. 2014. Watershed Wide Monitoring Annual Report. Submitted to the Dolores River Restoration Partnership. Tamarisk Coalition. 140 pages.

Work/Research Experience

Research Associate. Sher Lab. University of Denver. Denver, CO 3/2021-present

- Collaborated on research projects related to *Tamarix* spp. and trait-based approaches to restoration
- Mentored graduate students.

Graduate Research Assistant. University of Denver. Denver, CO 9/2017-3/2021

- Worked with an interdisciplinary team of social scientist, ecologists, land managers and non-profits to understand the role of manager backgrounds on ecological outcomes of restoration projects; NSF-CNH Award 1617463
- Presented key findings at conferences attended by scientists and land managers
- Collaborated with co-authors on data analysis and manuscript preparation
- Summarized project outcomes in annual and final reports

Field Crew Lead. University of Denver. Denver, CO 5/2014-5/2015

- Coordinated field efforts with land managers and non-profit organizations
- Planned and managed logistics for extended fieldwork
- Supervised undergraduate assistants in field and lab to ensure accurate and consistent data collection and data entry
- Collected vegetation data in tamarisk restoration areas on three rivers in Colorado and Utah
- Managed risk and ensured safety of crew

Data Analyst, GIS. U.S. Forest Service. Boulder, CO 8/2013-12/2013

- Managed data entry of vegetation monitoring in ArcGIS
- Surveyed and treated noxious weeds on Forest Service Land using GPS navigation

Research Assistant. Colorado Natural Heritage Program. Fort Collins, CO 4/2013-8/2013

- Worked with a small team to conduct vegetation surveys in Bighorn Canyon, Wyoming
- Identified plants and community structure classification for grasses, forbs and trees
- Navigated to study plots using map and compass and GPS
- Kept detailed and accurate record of all data collected

Biological Science Technician. US Forest Service, Noxious Weeds Program. Boulder, CO 5/2012-11/2012

- Led volunteer groups of teens and adults from diverse backgrounds in restoration projects
- Trained and led crew members to identify invasive plants
- Identified extent of infestations and planned chemical/manual treatments for invasive plants throughout the Arapaho and Roosevelt National Forests
- Compiled and analyzed survey data using ArcMap and Excel

Lab/Field Assistant. University of Colorado, Bowman Plant Ecology Lab. Boulder, CO 1/2010-6/2011

- Independently designed and completed a two-part experiment to determine the relationship between nitrogen concentration in lichen tissue and atmospheric nitrogen deposition
- Traveled throughout Colorado to collect over 800 lichen and soil samples
- Analyzed results in R
- Prepared a manuscript synthesizing literature and presenting study results
- Received high honors for thesis work presented to a committee

Grants and Awards

Excellence in Research Award, Biological Sciences Department, University of Denver 2020

High Honors in Ecology and Evolutionary Biology, University of Colorado 2010

Marion and Gordon Alexander Memorial Fund ($1400) 2009

Undergraduate Research Opportunities Grant ($1000) 2009

Teaching

Guest Lecture: An overview of non-parametric statistics February 2021

Guest Lecture: An overview of multivariate statistics February 2020

University of Denver, Department of Biological Sciences:

Teaching Assistant for BIOL 1260: Sustaining life I, II, III 2014, 2015, 2016

Teaching Assistant for BIOL 2011: General Ecology 2015, 2016

Teaching Assistant for BIOL 1021: Evolution, Heredity and Biodiversity 2016, 2017

Teaching Assistant for BIOL 2051: Conservation Biology 2016, 2017

Mentoring

Mentored Undergraduates:

*Kyleigh Kearnen ($3,500 Pustmueller fellowship)

Professional Service

Peer reviewer for the following journals:

Agriculture, Ecosystems and Environment

Catena

Ecohydrology

Environmental Entomology

Journal of Arid Environments

Skills/Software

Surveying vegetation in varied locations

Synthesizing large bodies of literature and preparing written summaries as evidenced by extensive peer-reviewed publications

Ability to translate science to a general audience as evidenced by teaching and presentation record

Using R, Inkscape and QGIS to create clear and accessible figures and maps for publication and conference presentations

Communicating science to both academic and non-academic audiences, specifically land managers and undergraduates

Proficiency in Microsoft Excel, Word and PowerPoint; document sharing platforms such as Google drive and Teams; virtual meeting platforms