Alice Stears

Plant Functional Ecology · Data Science · Population Ecology

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Education

University of Wyoming *Laramie, WY*

PhD, Ecology (4.0/4.0) *September 2017-May 2022*

- Dissertation: "Trait-mediated plant demographic responses to environmental change"
- Advisor: Dr. Daniel Laughlin
- Graduate committee: Dr. Shannon Albeke, Dr. Ellen Currano, Dr. Lauren Shoemaker, and Dr. Kevin Wilcox

Williams College *Williamstown, MA*

BA, Biology with Honors (3.6/4.0) *September 2011-June 2015*

- Honors thesis: "The Effect of Local Climate Change on the Population Ecology and Genetic Landscape of the Arctic Disjunct Plant *Sagina nodosa* on Isle Royale, MI"
- Advisors: Dr. Luana Maroja and Dr. Joan Edwards

Professional Experience

2021	**Data Science Intern**, Western EcoSystems Technology, Inc. and University of Wyoming EPSCoR, Laramie, WY
2019-2020	**Wyoming NASA Space Grant Consortium Graduate Fellow**, University of Wyoming
2017-2021	**Graduate Teaching Assistant**, Life Program and Department of Botany, University of Wyoming
2016-2017	**Biologist Guide**, Wildlife Expeditions of Teton Science Schools, Jackson, WY
2015-2016	**Teacher Naturalist**, Montana Audubon Center, Billings, MT
2015	**Field Research Assistant, Plant Evolutionary Biology**, under Anne Marie Panetta, Rocky Mountain Biological Laboratory, Gothic, CO
2013-2015	**Undergraduate Teaching Assistant**, Biology Department, Williams College
2013	**Undergraduate Research Assistant, Forest Ecology**, under Dr. Hank Art, Biology Department, Williams College

Publications: Peer-Reviewed

Stears, Alice E., Peter B. Adler, David H. Atkins, Shannon E. Albeke, Jared Studyvin, Daniel C. Laughlin. plantTracker: An R package to translate maps of plant occurrence into demographic data. 2022. *Methods in Ecology and Evolution*, 00: 1-9. https://doi.org/10.1111/2041-210X.13950

Stears, Alice E., Peter B. Adler, Dana M. Blumenthal, Julie A. Kray, Kevin E. Mueller, Troy W. Ocheltree, Kevin R. Wilcox, Daniel C. Laughlin. 2022. Water availability dictates how plant traits predict demographic rates. *Ecology.* e3799. https://doi.org/10.1002/ecy.3799

In Prep

Trevor A. Carter, David H. Atkins, Kathleen A. Dwire, Jesse R. Fleri, Paula J. Fornwalt, Katherine R. Hayes, Hailey Mount, Andrew Siefert, **Alice E. Stears**, Erin Twaddell, Sienna A. Wessel, Brian Buma, and Daniel C. Laughlin. Root traits are poor predictors of the understory plant community response to widespread spruce mortality a decade after disturbance.

Alice E. Stears, Bonnie Hiedel, Maria Paniw, Roberto Salguero-Gomez, Daniel C. Laughlin. Population dynamics of a globally rare yet locally abundant endemic monocarpic perennial (*Oenoethera coloradensis*).

Publications: Non-Peer-Reviewed

Wessel, Sienna A., Jesse R. Fleri, David H. Atkins, Trevor A. Carter, **Alice E. Stears**, Hailey E. Mount, Nicholas W. Case, Shannon E. Albeke Daniel C. Laughlin. 2021. Exploring vegetation virtually with the Global Vegetation Project. *International Association of Vegetation Science Bulletin 2021/22: 21-22.*

Stears, Alice E., 2020. Population Dynamics of a Rare Plant, Colorado butterfly plant *(Oenothera coloradensis)*, *Castilleja: Publication of the Wyoming Native Plant Society* 39(3).

Stears, Alice E., Joan Edwards, and Luana Maroja. 2015. *Sagina nodosa* on Isle Royale, MI : shifting genetic structure and demography in a changing climate. Undergraduate Honors Thesis, Williams College.

Awards, Fellowships, & Grants

2020	**Women in Conservation Biology, Ecology, and Education Fellowship**, University of Wyoming Botany and Zoology & Physiology Departments	*$1,000*
2020	**Dennis H. Knight Graduate Student Fellowship**, University of Wyoming Botany Department	*$1,000*
2019	**College of Arts and Sciences Dean's Scholar Award**, University of Wyoming	*$2,500*
2019-2020	**Graduate Research Fellowship**, Wyoming NASA Space Grant Consortium	*$24,000*
2019	**Wyoming Native Plant Society Markow Grant**, Wyoming Native Plant Society	*$980*
2019	**Graduate Research Fellowship, Honorable Mention**, National Science Foundation	
2018-2019	**Program in Ecology Teaching Assistantship**, Program in Ecology, University of Wyoming	*$24,700*
2018	**Ton Damman Award, International Edition, for best student poster at the International Association of Vegetation Science Symposium**, ESA Vegetation Section.	*$400*
2018	**Student Travel Award**, International Association for Vegetation Science	*$225*
2018	**Travel Award**, Department of Botany, University of Wyoming	*$300*
2018, 2019	**HT Northen Summer Fellowship**, Department of Botany, University of Wyoming	*$2,250*
2018; 2021	**Aven Nelson Summer Fellowship in Systematic Botany**, Department of Botany, University of Wyoming	*$2,500; $700*
2015	**Henry A. Dwight Class of 1829 Botanical Prize for excellence in Botany**, Williams College	
2011	**Valedictorian of Graduating Class**, Billings Senior High School, Billings MT	
2011	**National Merit Scholar Semi-Finalist**,	

Presentations

Contributed Presentations

Stears, A. 2021. Trait-mediated plant demographic responses to environmental change. Oral Presentation: University of Wyoming Program in Ecology Annual Symposium, Virtual.

Stears, A. 2020. Identifying plant traits that predict species-level drought tolerance in western grasslands. Oral Presentation: Ecological Society of America Annual Meeting, Virtual.

Stears, A. 2020. Trait-mediated plant demographic responses to environmental change. Oral Presentation: Botany Departmental Seminar, University of Wyoming, Laramie, WY.

Stears, A. 2019. Updating population models to improve conservation of the rare plant *Oenothera coloradensis*. Oral Presentation: Botany Departmental Seminar, University of Wyoming, Laramie, WY.

Stears, A. 2019. Identifying plant traits that predict species-level drought tolerance in western grasslands. Oral Presentation: Guild of Rocky Mountain Ecologists and Evolutionary Biologists, Gothic, CO.

Stears, A. 2019. Identifying plant traits that predict species-level drought tolerance in western grasslands. Oral Presentation: University of Wyoming Program in Ecology Annual Symposium, Laramie, WY.

Stears, A. 2018. Plants sit quietly and wait to be dug up!:Identifying plant traits that predict drought tolerance in Western Grasslands. Oral Presentation: Botany Departmental Seminar, University of Wyoming, Laramie, WY.

Stears, A, D. Blumenthal, P. Adler, K. Wilcox, J. Kray, T. Ocheltree, and D.C. Laughlin. 2018. Leaf osmotic potential affects survival rates in response to inter-annual climatic variation in shortgrass prairie. Poster presentation: International Association of Vegetation Scientists Symposium, Bozeman, MT.

Stears, A. 2014. Observing the Effects of Climate Change in an Arctic Plant: The Population Ecology and Landscape Genetics of Sagina nodosa in Isle Royale National Park. Departmental seminar: Biology Department, Williams College, Williamstown, MA.

Relevant Coursework

Fall 2020	**Computational Biology Practicum**, Instructor: Alex Buerkle (UW)
Spring 2019	**Independent Study in Data Science**, Instructor: Shannon Albeke (UW)
Fall 2018	**Visualizing Science**, Instructor: Bethann Garramon Merkle (UW)
Fall 2018	**Quantitative Analysis of Field Data**, Instructor: Corey Tarwater (UW)
Fall 2018	**Techniques in Environmental Data Management**, Instructor: Shannon Albeke (UW)
Spring 2018	**Computational Biology**, Instructor: Alex Buerkle (UW)
Spring 2018	**Ecological Modeling**, Instructor: Daniel Laughlin (UW)
Spring 2015	**Geographic Information Systems**, Instructor: Paul Karabinos (Williams College)

Mentoring

2019-2020	**Yvan Somalyay**, Undergraduate Honors Student, University of Wyoming
2018	**Syndney Cannon**, Undergraduate Independent Study Student, University of Wyoming

Outreach & Professional Development

Service and Outreach

2018-2022	**Program in Ecology Student Organization**, Secretary (19-20; 20-21); Outreach Committee (18-19); Invited Speaker Committee (21-22)	*University of Wyoming*
2021-2022	**Botany Department Diversity, Equity and Inclusion Committee**, Committee Member	*University of Wyoming*

Professional Development

Scholarly Writing Techniques Workshop Series, 2020, A 4-part workshop series through the University of Wyoming Graduate Learning Initiative.

Spatial Data Science Using R, 2019, A three-day workshop at the University of Wyoming on using R statistical software to process and analyze GPS and remotely-sensed data.

NSF Grantsmanship Workshop, 2017, A two-day workshop at the University of Wyoming with former NSF program officer Saran Twombly providing insights and skills practice for the NSF grant-writing process

Professional Memberships

Ecological Society of America · International Association for Vegetation Science · Sigma Xi

Peer Reviewer

Ecology · Ecosphere · New Phystologist · Ecological Monographs

Skills and Certifications

High proficiency in R, R shiny, LaTeX, Overleaf, git, GitHub, and Microsoft Office applications

Basic proficiency in HTML, Linux Bash shell script, SQL and ArcGIS software

Wilderness First Responder Certification, NOLS (2018)

American Institute for Avalanche Research and Education Level 1 and 2 Certifications (2018, 2019)

References

Daniel Laughlin, PhD Advisor
daniel.laughlin@uwyo.edu

Shannon Albeke, Graduate committee member and collaborator
salbeke@uwyo.edu

Jared Studyvin, WEST Data Science internship mentor
studyvin@uwyo.edu