

KERRY M. BYRNE, PHD

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Environmental Science and Management
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PROFESSIONAL APPOINTMENTS (2017 – Present)

Associate Professor, Env. Science and Management, *Cal Poly Humboldt* 2022 – Pres
Assistant Professor, Env. Science and Management, *Cal Poly Humboldt* 2017 – 2022
Assistant Professor, Natural Sciences, *Oregon Institute of Technology* 2013 – 2017
Adjunct Professor, Forestry and Wildland Resources, *Cal Poly Humboldt* 2021 – Pres
Courtesy Research Associate, Soil and Crop Sciences, *Colorado State University* 2013 – Pres

EDUCATION

Ph.D., Ecology, *Colorado State University*. Advisor: Dr. William Lauenroth 2007 – 2012
B.S., Environmental Biology and Management, *University of California, Davis* 2000 – 2004

TEACHING EXPERIENCE (2017 – Present)

ESM 303. Applied Natural History and Ecology (lecture and lab) 2017 – Pres
ESM 455. Applied Ecological Restoration Capstone Course (lecture and lab) 2018, 2022
RRS 360. Wildland Plant Communities (lecture and lab) 2022
ESM 685. Graduate Seminar 2019 - Pres

PUBLICATIONS

Undergraduate student^u; Graduate student^g

Published, accepted, or in press

- Nunes, A.M.^g and **K.M. Byrne**. 2022. Drought and shrub cover differentially affect seed bank composition within two sagebrush steppe communities. *Journal of Arid Environments* **202**: 104752.
- Kelly, S.^u, C. McKinney^u, and **K.M. Byrne**. 2022. Innovation in Restoration: Estimating Seed Counts Using a Photography App. *Ecological Restoration* **40**: 29-32.
- Byrne, K.M.** 2021. Technical Note: A Rapid Method to Estimate Root Production in Grasslands, Shrublands, and Forests. *Rangeland Ecology and Management* **76**: 74-77.
- Wilcox, K.R., Z. Shi, L.A. Gherardi, N.P. Lemoine, S.E. Koerner, D.L. Hoover, E. Bork, **K.M. Byrne**, and others. 2017. Asymmetric responses of primary productivity to climate extremes: a synthesis of grassland precipitation manipulation experiments. *Global Change Biology* **23**: 4376 - 4385.
- Byrne, K.M.**, P.B. Adler, and W.K. Lauenroth. 2017. Contrasting effects of precipitation manipulations on plant communities within the Great Plains, U.S.A. *Journal of Vegetation Science* **28**: 238-249.
- Adler, P. B., **K. Byrne**, and J. Leiker. 2013. Can the past predict the future? Experimental tests of historically-based population models. *Global Change Biology* **19**: 1793-1803.
- Robinson T.M.P., K.J. La Pierre, M.A. Vadeboncoeur, **K.M. Byrne**, M.L. Thomey, and S.E. Colby. 2013. Seasonal, not annual precipitation drives community productivity across ecosystems. *Oikos*, **122**: 727-738.

PUBLICATIONS, Cont.

- Byrne, K.M.**, W.K. Lauenroth, and P.B. Adler. 2013. Contrasting effects of precipitation manipulations on production at two sites within the central grassland region, USA. *Ecosystems*, **16**, 1039-1051.
- Evans S.E., **K. M. Byrne**, W.K. Lauenroth, and I.C. Burke. 2011. Defining the limit to resistance in a drought-tolerant grassland: long-term severe drought significantly reduces the dominant species and increases ruderals. *Journal of Ecology*, **9**: 1500-1507.
- Byrne, K.M.**, W.K. Lauenroth, P.B. Adler, and C.M. Byrne^u. 2011. Estimating Aboveground Net Primary Production in Grasslands: a Comparison of Non-Destructive Methods. *Rangeland Ecology and Management* **64**: 9-12.
- Buhnerkempe, M., N. Burch, S. Hamilton, **K.M. Byrne**, E. Childers, K.A. Holfelder, L. McManus, M.I. Pyne, G. Schroeder, and P.F. Doherty, Jr. 2011. The utility of transient sensitivity for wildlife management and conservation: Bison as a case study. *Biological Conservation* **144**: 1808-1815
- Pyne, M.I., **K.M. Byrne**, P.F. Doherty, Jr., K.A. Holfelder, L. McManus, M. Buhnerkempe, N. Burch, E. Childers, S. Hamilton, G. Schroeder. 2010. Survival and Breeding Transitions for a Reintroduced Bison Population: a Multi-state Approach. *Journal of Wildlife Management* **74**: 1464-1471.
- Byrne, K.M.**, W.K. Lauenroth, and L. McManus. 2010. Non-native Plant Species Impacts on Production and Diversity in the Front Range of Colorado. *Western North American Naturalist* **70**: 288-295.

COMPETITIVE GRANTS (2017 – Present)

Pending Awards

- Quantifying the effects of herbicide and targeted grazing on medusahead thatch and the soil seed bank over time. Bureau of Land Management, Lakeview Klamath Falls Office. 2022 – 2026
- Paid student opportunities to support native seed collection and habitat restoration. Bureau of Land Management, Northern California District Office. 2022 – 2026

Active Awards

- Continued monitoring of native and transplanted Applegate's milkvetch individuals across four populations. U.S. Fish and Wildlife Service, Pacific Southwest Region. \$17,865 (PI) 2022
- Quantification and mitigation of large pine mortality after prescribed burning in a drought altered Sierra Nevada mixed-conifer forest, California USA. USDA McIntire-Stennis. \$75,000 (PI, co-PI Harold Zald, USDA Forest Service) 2020 – 2022
- Fungal community associated with Applegate's milkvetch: a microbial approach to plant restoration. U.S. Fish and Wildlife Service, Pacific Southwest Region. \$16,685 (co-PI with PI Catalina Gempeler) 2020 – 2022

Past Awards

- Continued Milkvetch Monitoring. U.S. Fish and Wildlife Service, Pacific Southwest Region. \$15,900 (PI) 2020 – 2021
- Demographic monitoring of a rare southern Oregon endemic, *Astragalus applegatei* M. Peck. U.S. Fish and Wildlife Service, Pacific Southwest Region. \$49,595 (PI) 2018 – 2021

COMPETITIVE GRANTS, Cont.

- Drought and sagebrush: management implications. Bureau of Land Management, 2016 – 2021
Lakeview Klamath Falls Office. \$75,000 (co-PI Kristen Kaczynski,
CSU Chico)
- Demographic monitoring of Applegate's milkvetch at Ewauna Flat Preserve, 2017 – 2020
Klamath Falls, OR. Oregon Department of Agriculture. \$18,003 (PI)
- Multi-year inventory of *L. floccosa* ssp. *bellingermaniana* and its habitat. Bureau of Land 2017
Management, Lakeview Klamath Falls Office. \$10,238 (PI)
- Demographic monitoring of a rare southern Oregon endemic, *Astragalus*. 2015 – 2017
applegatei M. Peck. U.S. Fish and Wildlife Service, Pacific Southwest
Region. \$58,749 (PI)

INTERNAL FUNDING (2017 – Present)

Active Awards

- Herbivory, folivory, and granivory in rare Fabaceae: Potential for limitation 2021 - 2022
of population growth. HSU Research, Scholarship, and Creative Activities
Program (RSCA) AY 21-22. \$5,000.
- Lasting impacts: predicting the quality and quantity of livestock forage 2021 – 2023
production in northeastern California after severe drought ends. California
Agricultural Research Institute (ARI) Grants Program. \$46,118 (PI)

Past Awards

- Assessing the impacts of drought on the quality and quantity of livestock forage 2018 – 2021
production in northeastern California. California Agricultural Research
Institute (ARI) Grants Program. \$43,462 (PI)
- Student Research Employment. HSU Graduation Initiative (GI) 2025 Program 2020 – 2021
AY 20-21. \$1,680
- HSU Sponsored Programs Foundation Research Incentives Program. \$5,047 (2.5 WTU) 2020
- Student Employment for Seed bank Germination Study. HSU Graduation Initiative (GI) 2020
2025 Program AY 19-20. \$1,950
- Experimental Restoration Method for Novel Nitrogen-Enriched Plant 2018 – 2019
Communities at Lanphere Dunes, Arcata, CA. HSU Research, Scholarship,
and Creative Activities Program (RSCA) AY 18-19. \$4,848

FUNDING AWARDED TO STUDENT RESEARCHERS (2017 – Present)

- Undergraduate student^u; Graduate student^g
- Non-destructive age estimation for *Artemisia cana* and *Artemisia arbuscula*. 2022
Society for Ecological Restoration, Great Basin Chpt. \$826.50 (Francisco Chavez^g)
- Non-destructive age estimation for *Artemisia cana* and *Artemisia arbuscula*. 2022
Native Plant Society of Oregon Field Research Grants Program. \$1,000 (Francisco
Chavez^g)
- Western sagebrush steppe plant community recovery after severe drought. 2021 – 2022
California State University Agricultural Research Institute – Hispanic
Serving Institution Research Fellowship. \$6,400 (Francisco Chavez^g)
- Phenology of *Eschscholzia californica* in a Common Garden Study. California 2021 – 2022
State University Agricultural Research Institute - Hispanic Serving
Institution Research Fellowship. \$6,400 (Sarah Aguiar^u)

FUNDING AWARDED TO STUDENT RESEARCHERS, Cont.

- Effects of drought on biocrusts, soil, and plants in southeastern Oregon sagebrush-steppe. Native Plant Society of Oregon Field Research Grants Program. \$750 (Allison Nunes[§]) 2020 – 2021
- Seed bank germination study at Lanphere Dunes, Arcata, CA. Northern California Botanists Research Scholarship. \$1,000 (Sean Stewart^u) 2019 – 2020

TECHNICAL REPORTS (2017 – Present)

- Stewart, S.[§], and **K.M. Byrne**. 2021. Continued Monitoring of Native and Transplanted Applegate's milkvetch individuals across four populations. Final grant report submitted to the US Fish and Wildlife Service in fulfillment of Agreement F20AC11404-00.
- Stewart, S.[§], and **K.M. Byrne**. 2021. Demographic Monitoring of a Rare Southern Oregon Endemic, *Astragalus applegatei* M. Peck. Final grant report submitted to the US Fish and Wildlife Service in fulfillment of Agreement F18AP00388.
- Byrne, K.M.** and S. Stewart[§]. 2020. Demographic Monitoring of Transplanted Individuals of Applegate's milkvetch at Ewauna Flat Preserve, Klamath Falls, Oregon. Final grant report submitted to Oregon Department of Agriculture in fulfillment of Agreement ODA-4022-IG.

INVITED TALKS AND SEMINARS (2017 – Present)

- Astounding *Astragalus* in Humboldt County and beyond. California Native Plant Society, North Coast Chapter. 2019
- Restoring a population of Applegate's milkvetch (*Astragalus applegatei*): lessons learned for conservation. Northern California Botanists Symposium. 2019
- Conservation of Applegate's milkvetch: one of Oregon's most imperiled plants. Oregon Native Plant Society, Siskiyou and Klamath Basin Chapters. 2017
- Restoration Ecology in the Anthropocene: plants, communities, and ecosystems. Humboldt State University, Environmental Science and Management. 2017

SELECT PRESENTATIONS (2017 – Present)

- Undergraduate student^u; Graduate student[§]
- Kelly, S. ^u, C. McKinney^u, and **K.M. Byrne**. Innovation in Restoration: Estimating Seed Counts Using a Photography App (oral presentation). National Conference for Undergraduate Research. 2021
- Nunes, A. [§] and **K.M. Byrne**. Drought alters soil seed bank composition within a sagebrush community: decreasing native forb seeds and increasing invasive grass seeds (oral presentation). Society for Range Management Annual Meeting. 2021
- Stewart, S. ^u and **K.M. Byrne**. The Impact of invasion and removal of *Lupinus arboreus* on seedbanks in coastal sand dune environments (poster). Northern California Botanists Symposium. 2020
- Connell, N^u, A. Young^u, and **K.M. Byrne**. Measuring the Importance of Pollinators for *Astragalus applegatei*: A Study Comparing Open vs. Self-Pollinated Seeds" (poster). Oregon Tech Project Symposium. 2017
- Kaczynski, K.M, and **K.M. Byrne**. Predicting changes in California's diverse environments: introducing the ORIDE climate change experiment (poster). Northern California Botanists Symposium. 2017

AWARDS AND FELLOWSHIPS (2017 – Present)

- President Alistair McCrone Promising Faculty Scholar Award, Humboldt State 2019

SERVICE

Professional

Board Member, Northern California Botanists	2020 – Pres
Technical Working Group on Rangeland Carbon Monitoring, Point Blue Conservation Science	2021 – 2022
Session Chair, Traditional Ecological Knowledge, Northern California Botanists Symposium	2021 – 2022
Subject matter reviewer, National Council on Undergraduate Research	2021 – 2022
Ad hoc reviewer: <i>Ecology, Ecosphere, Ecosystems, Functional Ecology,</i> <i>Global Change Biology, Journal of Arid Environments, Journal of Ecology,</i> <i>Oecologia, Pedosphere, Perspectives in Plant Ecology, Evolution,</i> <i>and Systematics, PLOS One, Rangeland Ecology and Management,</i> <i>Restoration Ecology, Science of the Total Environment, Western North</i> <i>American Naturalist</i>	2011 – Pres

University

Faculty Search Committee, Rangeland Resource Science and Applied Fire Science positions	2021 – 2022
Member, CNRS STEM communities for transfer students working group	2021 – 2022
Faculty Search Committee, Temporary Rangeland Resource Science position	2021
Co-Chair, Advisory Committee on Sustainability	2019 – 2021
Member, Advisory Committee on Sustainability	2017 – 2022
Faculty Advisor, Environmental Science Honor Society, Pi Epsilon	2018 – Pres
Ad hoc reviewer, IdeaFest journal	2019 – Pres
Member, Agricultural Research Institute (ARI) Grant Review Committee	2019 – Pres

RESEARCH ADVISING AND MENTORING

Current Graduate Students (Masters): Julia Bartley, Francisco Chavez, Sean Stewart	2019 – Pres
Current Graduate Committees (Masters): Molly Cribari and Jonas Sotingco (Biology), Sean Flemming, and Arron Wilder (Natural Resources)	2017 – Pres
Completed Graduate Students (Masters): Allison Nunes	2021
Completed Graduate Committees (Masters): Joseph Saler and Ethan Reibsome (Biology), Melissa Collin (Natural Resources), Laura Kentnesse (Oregon State University)	2017 – Pres
Undergraduate Mentoring: 9 undergraduate students	2017 – Pres

PROFESSIONAL DEVELOPMENT (2017 – Present)

Workshops and Courses

Humanizing Online STEM Academy (6 weeks), California Education Learning Lab	2021
Spring 2021 Professional Development Days: Prepare to Teach, HSU Center for Teaching and Learning	2021
Pivot to Online Learning and Teaching, HSU Center for Teaching and Learning	2020
Course Design Institute, HSU Center for Teaching and Learning	2019 – 2020
Drought-Net Research Network PI Meeting and Workshop, Colorado State University	2019

PROFESSIONAL DEVELOPMENT, Cont.

Teaching and Learning tools workshop, HSU New Faculty Learning Community	2018
Creating better syllabi workshop, HSU New Faculty Learning Community	2018
Affordable Textbooks workshop, HSU sustainable learning solutions & HSU Library	2017
Sustainability and Climate Change. InTeGrate and Quantitative Undergraduate Biology Education Synthesis (QUBES) Faculty Mentoring Network participant	2017

Webinars and Seminars

The Science of a Diverse Community (a talk about stereotype threat), Dr. Claude Steele, California Education Learning Lab	2021
Digitally Enhanced Teaching: Writing Smarter Test Questions, HSU Center for Teaching and Learning (CTL)	2020
Creating an Engaging Discussion, HSU CTL	2020
Getting down to basics: examining language and understanding that support the creation of equitable and inclusive workspaces, HSU CTL	2018

Webinars and Seminars

Creating Civil Dialogue in the Classroom: Hate Speech v. Free Speech on College and University campuses, HSU Expanded New Faculty Learning Community	2017
How Students Learn and Instruction Strategies, HSU New Faculty Learning Community	2017

PROFESSIONAL SOCIETIES

California Botanical Society, California Native Plant Society, Ecological Society of America, Northern California Botanists, Society for Range Management