

## Curriculum Vitae - Kerry M. Byrne

Environmental Science and Management

California State Polytechnic University, Humboldt, Arcata, CA 95521

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### EDUCATION

Ph.D., Ecology - *Colorado State University* 2007 – 2012  
B.S., Environmental Biology and Management - *University of California, Davis* 2000 – 2004

### PROFESSIONAL APPOINTMENTS

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  
Postdoctoral Research Fellow - Plant Sciences, *University of California, Davis* 2012 – 2013

### LEAVE

Sabbatical leave: Aug 2023 – May 2024, Boise State University

Maternity leave: Jan – May 2018, Jan – May 2020 (40 % reduction in university responsibilities for each leave)

### HONORS AND AWARDS

President Alistair McCrone Promising Faculty Scholar Award, *Cal Poly Humboldt* 2019  
Editor's Choice Award for publication in *Journal of Ecology*, Issue 6 2011

### PUBLICATIONS

Undergraduate student<sup>u</sup>; Graduate student<sup>g</sup>

Nunes, A. M.<sup>g</sup> 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.<sup>u</sup>, C. McKinney<sup>u</sup>, 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.

- 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<sup>u</sup>. 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.

## RECENT PRESENTATIONS

Undergraduate student<sup>u</sup>; Graduate student<sup>g</sup>

- K. M. Byrne**. 2023. Educational gains from game-based learning: utilizing the Kahoot! platform in the classroom (interactive presentation). Cal Poly Humboldt 4<sup>th</sup> Annual Teaching Excellence Symposium.
- Kelly, S. <sup>u</sup>, C. McKinney<sup>u</sup>, and **K. M. Byrne**. 2021. Innovation in Restoration: Estimating Seed Counts Using a Photography App (oral presentation). National Conference for Undergraduate Research. Virtual.
- Nunes, A. <sup>g</sup> and **K. M. Byrne**. 2021. 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. Virtual.
- Stewart, S. <sup>u</sup> and **K. M. Byrne**. 2020. The Impact of invasion and removal of *Lupinus arboreus* on seedbanks in coastal sand dune environments (poster). Northern California Botanists Symposium. Chico, CA.
- Byrne, K. M.** 2019. Astounding *Astragalus* in Humboldt County and beyond. California Native Plant Society, North Coast Chapter. Arcata, CA.
- Byrne, K. M.** 2019. Restoring a population of Applegate's milkvetch (*Astragalus applegatei*): lessons learned for conservation. Northern California Botanists Symposium. Chico, CA.

## RECENT FUNDING

### Pending

- Establishing drought resilient grassland restoration networks in California. 2023 – 2025  
 UC Climate Action Seed Grant Proposal. \$1,501,716 (co-I with PI Justin Luong and 4 Co-PIs)

MRI Track 1: Acquisition of a LECO CN828 Elemental Analyzer for Research and Training at Cal Poly Humboldt. National Science Foundation. \$144,402 (PI, with four Humboldt Co-PIs)	2023 – 2026
MRI Track 1: Acquisition of a Picarro 2130-i water isotope analyzer for research and training at Cal Poly Humboldt and the North Coast of California. National Science Foundation. \$201,484 (Co-PI with 4 others, PI Lucy Kerhoulas)	2023 – 2026
Research Infrastructure: CC* Data Storage: Cal Poly Humboldt. National Science Foundation. \$499,906 (Co-PI, with PI Josh Callahan)	2023 – 2025

### Active

Predicting tree failure in Northwestern California. Pacific Gas & Electric, \$497,070 (co-PI with Rosemary Sherriff and PI Lucy Kerhoulas)	2023 – 2026
Seeds underhoof: can the soil seed bank facilitate restoration of sheep-grazed, cheatgrass-invaded rangelands? USDA Western SARE Sabbatical Grant. \$71,104 (Co-PI with PI Kelly Hopping, Boise State University)	2023 – 2024
Student opportunities to support native seed collection and habitat restoration in Northern California. Bureau of Land Management, California State Office. \$333,836 (PI)	2022 – 2027
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. \$23,000 2022 – 2023 Year 1 & 2 Funding (PI)	2022 – 2026
Lasting impacts: predicting the quality and quantity of livestock forage production in northeastern California after severe drought ends. California Agricultural Research Institute (ARI) Grants Program. \$46,118 (PI)	2021 – 2023
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, Forest Service)	2020 – 2023

### Past

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
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
Continued Milkvetch Monitoring. U.S. Fish and Wildlife Service, Pacific Southwest Region. \$15,900 (PI)	2020 – 2021
Assessing the impacts of drought on the quality and quantity of livestock forage production in northeastern California. California Agricultural Research Institute (ARI) Grants Program. \$43,462 (PI)	2018 – 2021
Demographic monitoring of a rare southern Oregon endemic, <i>Astragalus applegatei</i> M. Peck. U.S. Fish and Wildlife Service, Pacific Southwest Region. \$49,595 (PI)	2018 – 2021
Experimental Restoration Method for Novel Nitrogen-Enriched Plant Communities at Lanphere Dunes, Arcata, CA. HSU Research, Scholarship, and Creative Activities Program (RSCA) AY 18-19. \$4,848 (PI)	2018 – 2019

Drought and sagebrush: management implications. Bureau of Land Management, 2016 – 2021  
 Lakeview Klamath Falls Office. \$75,000 (PI, 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. *bellingneriana* 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)

### SYNERGISTIC ACTIVITIES

- Invited Member - Technical Working Group to Develop Protocol for 2021 - 2022  
 ranchers to monitor rangeland soil Carbon, Point Blue Conservation  
 Science, Petaluma, CA.
- Keynote Speaker and Session Organizer (Traditional Ecological Knowledge 2022  
 and Ethnobotany) for the 2022 Northern California Botanists Symposium  
 (and Board Member, 2020 - present).
- Completed 6 wk summer academy, "Humanizing online STEM courses," 2021  
 offered by the California Community Colleges Virtual Campus, to learn  
 techniques to create a more equitable learning environment online.
- Actively involve 28 undergraduate students in research resulting in 2011 – pres  
 presentations at professional meetings (3 undergraduates, including one  
 non-traditional first-generation college student and two female students),  
 two student first-author publications, and one student co-author.
- Site participant, International Drought Experiment. 2016 – pres
- **Reviewer** - *Ecology, Ecosphere, Ecosystems, Ecological Restoration,* 2011 – Pres  
*Functional Ecology, Global Change Biology, Journal of Arid Environments,*  
*Journal of Ecology, Oecologia, Pedosphere, Perspectives in Plant Ecology,*  
*Evolution, and Systematics, PLOS One, Rangeland Ecology & Management,*  
*Restoration Ecology, Science of the Total Environment, Western North*  
*American Naturalist.*