CLARE E. ASLAN, Ph.D

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EDUCATION

University of California, Santa Cruz
David H. Smith Conservation Research Postdoctoral Fellowship: 2010-2012
Academic Advisors: Dr. Erika Zavaleta, Dr. Bernie Tershy, Dr. Don Croll
Practitioner Advisor: Dr. Rob Robichaux
Research Topic: *Dissecting taxon substitution: Can non-native mutualists rescue native species from extinction?*

University of California, Davis
Ph.D., Ecology. Date of Completion: June, 2010
Dissertation Advisor: Dr. Marcel Rejmánek
Dissertation Committee Members: Dr. Marcel Holyoak, Dr. Tom Hahn
Dissertation Title: *The role of bird-mediated dispersal in plant invasiveness*
Area of Emphasis: Conservation Ecology
GPA: 4.0/4.0

University of Arizona, Tucson, AZ
B.S., Ecology and Evolutionary Biology *summa cum laude* with honors, December 2000
Minor: Humanities
Honors Thesis Title: *An overview of biological invasions and an analysis of the impacts of alien house mice in a native Hawaiian ecosystem*

CURRENT APPOINTMENTS

Northern Arizona University *2015-present*
Associate Professor; Director, School of Earth and Sustainability (2021-present); Co-Director, Center for Adaptable Western Landscapes (2020-present)

- **Research Focus:** Global biodiversity implications of mutualism disruption and novel mutualism formation; cross-boundary connectivity; endangered species research; plant-animal interactions; restoration of interspecific interactions; socioecological dynamics; social-ecological resilience.
- **Additional duties:** Co-leading lab initiatives to quantitatively and spatially assess natural resources across the Colorado Plateau; advising graduate students; supervising undergraduate interns; leading lab meetings and current literature discussions; leading $1.3 million NSF study on administrative boundaries and ecological connectivity; PI of two $1M Department of Defense-funded studies on the effects of invasive predators on endangered plans; department management, tracking budgets and research expenditures.

REFEREED PUBLICATIONS

- Souther, S., M. Sample, and C. Aslan. 2025. Interacting stressors drive landscape variation in demographic response of the endangered plant, *Pectis imberbis* (Gray). Journal of Arid Environments 227:105284.

- Aslan. C. E., S. Souther, A. Thode, A. Youberg, & Z. Evans. (2024). Measuring and predicting disturbance resilience in ecosystems, with emphasis on fire: a review and meta-analysis. Journal of Environmental Management 372:123353. https://doi.org/10.1016/j.jenvman.2024.123353

- Fankhauser, K., A. Shiels, and C. Aslan. 2024. Vertebrate herbivory in arid system restoration success: An exploratory case study and systematic review. Southwestern Naturalist 68:166-178.

- Aslan, C. E., R. Tarver, M. Brunson, S. Veloz, B. Sikes, and R. Epanchin-Niell. 2024. Experiences with wildfire are associated with private landowners' management decisions, relationships, and perceptions of risk. Landscape and Urban Planning 247:105067.

- Medeiros, M. J., W. P. Haines, C. E. Aslan, A. B. Shiels, A. Aue, and C. T. Liang. 2024. Understory arthropod diversity in a mixed dryland ecosystem, Hawai'i. Pacific Science 77:363-382.

- Souther, S. K., M. E. Sandor, M. Sample, S. Gabrielson, and C. E. Aslan. 2024. Bee and butterfly records indicate diversity losses in western and southern North America, but extensive knowledge gaps remain. PLoS ONE 19(5): e0289742.

- Abercrombie, S. A., Stuart, D. L., Aslan, C. E., Souther, S. K., & Petersen, B. C. (2023). Training community engaged climate adaptation leaders using multiple case study analysis: insights from cognitive learning sciences. Frontiers in Climate. https://doi.org/10.3389/fclim.2023.1196467

- Lehnert, S. L., K. E. Grimm, C. E. Aslan, S. J. K. Frey, and M. M. Mark. 2023. Landowner preferences for tree configurations in rural Costa Rica: a photo-based survey approach. Regional Environmental Change 23:104.

- Otto, N., M. Brunson, and C. Aslan. 2023. Very low disturbance and invasive plant occurrence detected along boundaries surrounding California protected areas. Natural Areas Journal 43:72-77.

- Bixler, R. P., R. S. Epanchin-Niell, M. W. Brunson, R. Tarver, B. A. Sikes, C. E. Aslan. 2023. How social and ecological characteristics shape transaction costs in polycentric wildfire governance: Insights from the Sequoia-Kings Canyon Ecosystem, California, USA. Ecology and Society 28:34.

- Aslan, C.E., L. Zachmann, R.S. Epanchin-Niell, M.W. Brunson, S. Veloz, and B.A. Sikes. 2022. Soil characteristics and bare ground cover differ among jurisdictions and disturbance histories in Western US protected area-centered ecosystems. Frontiers in Ecology and Evolution 10: 1241. https://doi.org/10.3389/fevo.2022.1053548

- Aslan, C. E., S. Veloz, R. S. Epanchin-Niell, M. W. Brunson, B. A. Sikes. 2022. Integrating social and ecological predictors to understand variation within ecosystems: a case study of the Great Smoky Mountains National Park PACE. Natural Areas Journal 42:284-292.

- Sterner, S., R. Best, T. Chaudhry, and C. Aslan. 2022. Forest management effects on vegetation regeneration after a high severity wildfire: A case study in the southern Cascade range. Forest Ecology and Management 520:120394.

- Aslan, C., and S. Souther. 2022. The interaction between administrative jurisdiction and disturbance on public lands: emerging socioecological feedbacks and dynamics. Journal of Environmental Management 319:115682.

- Souther, S., M. Sample, and C. Aslan. 2022. Demographic analysis of the endangered plant *Pectis imberbis* A. Gray highlights tradeoffs between deer browse and interspecific competition. Natural Areas Journal 42:230-241.

- Tiffany, B., T. Chaudhry, R. Hofstetter, and C. Aslan. 2022. The impact of administrative partitioning on the regional effectiveness of forest pest management in protected area-centered ecosystems. Forests 13:395.

- Moseley, R. D., A. B. Shiels, A. Aue, W. P. Haines, C. E. Aslan, and C. T. Liang. 2022. Hawaiian hoary bat responses to habitat, season, and non-native insectivore suppression. Journal of Wildlife Management 86:e22164.

- Sandor ME, Aslan CE, Pejchar L, Bronstein JL. 2021. A mechanistic framework for understanding the effects of climate change on the link between flowering and fruiting phenology. Frontiers in Ecology and Evolution. doi:10.3389/fevo.2021.752110.

- McCabe, L., C. Aslan, and N. Cobb. 2022. Decreased bee emergence along an elevation gradient: implications for climate change revealed by a transplant experiment. Ecology. doi:10.1002/ecy.359.

- Aslan, C. E., K. Haubensak, K. Grady. 2022. Effective and feasible mechanisms to support native invertebrate pollinator habitat in agricultural landscapes: a meta-analysis. Ecosphere 13:e3982.

- Liang, C., A. Shiels, W. Haines, M. Sandor, and C. Aslan. 2022. Invasive predators affect community-wide pollinator visitation. Ecological Applications e2522.

- Aslan, C. E. 2021. Book Review: Plant conservation: The role of habitat restoration. Quarterly Review of Biology.

- Major, J., R. McManamay, C. Aslan, D. Perry. 2021. Identifying gaps in protected areas to expand integrated riverine ecosystem conservation. Conservation Science and Practice. doi: 10.1111/csp2.470.

- Leary, J., K. Grimm, C. Aslan, M. Mark, S. Frey, R. Bath-Rosenfeld. 2021. Landowners' socio-cultural valuation of ecosystem services provided by trees in Costa Rican agricultural landscapes. Environmental Management 67:974-987.

- Aslan, C. E., S. Souther, S. Stortz, M. Sample, M. Sandor, C. Levine, L. Samberg, M. Gray, and B. Dickson. 2021. Land management objectives and activities in the face of projected fire regime change in the Sonoran Desert. Journal of Environmental Management 280:111644.

- Aslan, C. E., M. Sandor, M. Sample, S. Stortz, S. Souther, C. Levine, L. Samberg, M. Gray, and B. Dickson. 2021. Estimating social-ecological resilience: fire management futures in the Sonoran Desert. Ecological Applications 31 doi:10.1002/eap.2303.

- Aslan, C. E., L. Zachmann, M. McClure, S. Veloz, B. A. Sikes, M. W. Brunson, R. S. Epanchin-Niell, and B. G. Dickson. 2021. Quantifying ecological variation across jurisdictional boundaries in a management mosaic landscape. Landscape Ecology 36 doi:10.1007/s10980-021-01198-7.

- Aslan, C. E., and B. G. Dickson. 2020. Non-native plants exert strong but under-studied influence on fire dynamics. Neobiota **61**:47-64.

- Aslan, C. E., B. Sikes, R. Epanchin-Niell, M. Brunson, S. Veloz, B. Dickson, and D. Theobald. 2021. Coupled ecological and management connectivity across administrative boundaries in undeveloped landscapes. Ecosphere **12**:e03329.

- Beckman, N., H. Rogers, and C. E. Aslan. 2020. Introduction to the Special Issue: The role of seed dispersal in plant populations: perspectives and advances in a changing world. AoB Plants **12**:plaa010.

- Hillis, V., K. Berry, B. Swette, C. Aslan, S. Barry, and L. Porensky. 2020. Unlikely alliances and their implications for resource management in the American West. Environmental Research Letters **15**:045002.

- Schupp, E., R. Zwolak, L. Jones, R. Snell, N. Beckman, C. Aslan, B. Cavazos, E. Effiom, E. Fricke, F. Montaño-Centellas, J. Poulsen, O. Razafindratsima, M. Sandor, and K. Shea. 2019. Intrinsic and extrinsic drivers of intraspecific variation in seed dispersal are diverse and pervasive. AoB Plants **11**:plz067.

- Sample*, M., C. E. Aslan, Nahuel Policelli, Robert L. Sanford, Erik Nielsen, & Martín A. Nuñez. 2019. Increase in nonnative understorey vegetation cover after nonnative conifer removal and passive restoration. Austral Ecology **44**:1384-1397.

- McCormick*, M., C. E. Aslan, T. Chaudhry, and K. Potter. 2019. Benefits and limitations of isolated floral patches in a pollinator restoration project in Arizona. Restoration Ecology **27**:1282-1290.

- Aslan, C. E. 2019. Implications of non-native species for mutualistic network resistance and resilience. PLoS ONE **14**:e0217498

- Beckman, N. G., C. E. Aslan, H. R. Rogers, O. Kogan, J. L. Bronstein, J. M. Bullock, F. Hartig, J. HilleRisLambers, Y. Zhou, D. Zurell, J. F. Brodie, E. M. Bruna, S. R. Cantrell, R. Decker, E. O. Effiom, E. C. Fricke, K. Gurski, A. Hastings, J. Johnson, B. A. Loiselle, M. N. Miriti, M. G. Neubert, L. Pejchar, J. R. Poulsen, G. Pufal, O. H. Razafindratsima, M. Sandor, K. Shea, S. J. Schreiber, E. W. Schupp, R. S. Snell, C. Strickland, and J. Zambrano. 2020. Advancing an interdisciplinary framework to study seed dispersal ecology. AoB Plants **12**:plz048.

- Cortina*, C., C. E. Aslan, and S. Litson*. 2019. Importance of non-native honeybees (*Apis mellifera*) as flower visitors to the Hawaiian tree ʻŌhiʻa lehua (*Metrosideros polymorpha*) across an elevation gradient. Pacific Science **73**:345-355.

- Elkind*, K., T. T. Sankey, S. M. Munson, & C. E. Aslan. 2019. Invasive buffelgrass detection using high-resolution satellite and UAV imagery on Google Earth Engine. Remote Sensing in Ecology and Conservation **5**:318-331.

- Aslan, C., N. Beckman, H. Rogers, J. Bronstein, D. Zurell, F. Hartig, K. Shea, L. Pejchar, M. Neubert, J. Poulsen, J. HilleRisLambers, M. Miriti, B. Loiselle, E. Effiom, J. Zambrano, E. Schupp, G. Pufal, J. Johnson, J. Bullock, J. Brodie, E. Bruna, S. Cantrell, R. Decker, E. Fricke, K. Gurski, A. Hastings, O. Kogan, J. Powell, O. Razafindratsima, M. Sandor, S. Schreiber, R. Snell, C. Strickland, and J. Zhou. 2019. Employing plant functional groups to advance seed dispersal ecology and conservation. AoB Plants **11**: plz006.

- Aslan, C. E., A. Shiels, W. Haines, and C. T. Liang. 2019. Non-native insects dominate daytime pollination in a high-elevation Hawaiian dryland ecosystem (Featured article). American Journal of Botany **106**:313-324.

- Aslan, C. E., C. T. Liang, A. Shiels, and W. Haines. 2018. Absence of native flower visitors for the endangered Hawaiian mint *Stenogyne angustifolia*: impending ecological extinction? Global Ecology and Conservation **16**:e00468.

- Aslan, C. E., B. Petersen, A. Shiels, W. Haines, and C. Liang. 2018. Operationalizing resilience for conservation objectives: the 4 S's. Restoration Ecology **26**:1032-1038.

- Aslan, C. E., L. Samberg, B. G. Dickson, and M. E. Gray. 2018. Management thresholds stemming from altered fire dynamics in present-day arid and semi-arid environments. Journal of Environmental Management **227**:87-94.

- Stortz, S.D., C.E. Aslan, T.D. Sisk, T. Chaudhry, J.M. Rundall, J. Palumbo, L. Zachmann, and B. Dickson. 2018. The Greater Grand Canyon Landscape Assessment: A resource condition assessment of Grand Canyon National Park and surrounding region. Natural Resource Technical Report. NPS, Ft. Collins, CO.

- Petersen, B., C. Aslan, D. Stuart, and P. Beier. 2018. Incorporating social and ecological adaptive capacity into vulnerability assessments and adaptation decisions for conservation. Bioscience **68**:371-380.

- Zavaleta, E., C. Aslan, W. Palen, T. Sisk, M. E. Ryan, and B. G. Dickson. 2017. Expanding career pathways in conservation science. Conservation Biology **32**:246-248.

- Aslan, C. E., C. T. Liang, B. Galindo*, K. Hill*, and W. Topete*. 2016. The role of honeybees as pollinators in natural areas. Natural Areas Journal **36**:478-488.

- Franklin, K. A., P. N. Sommers, C. E. Aslan, B. R. López, J. L. Bronstein, E. Bustamante, A. Búrquez, R. A. Medellín, and B. Marazzi. 2016. Plant biotic interactions in the Sonoran Desert: current knowledge and future research perspectives. International Journal of Plant Sciences **177**:217-234.

- Aslan, C. E., B. A. Sikes, K. B. Gedan. 2015. Research on mutualisms between native and non-native partners can contribute critical ecological insights. Neobiota **26**:39-54.

- Aslan, C. E., J. Bronstein, H. S. Rogers, K. B. Gedan, J. F. Brodie, T. Palmer, and T. P. Young. 2016. Leveraging nature's backup plans to incorporate interspecific interactions and resilience into restoration. Restoration Ecology **24**:434-440.

- Brodie, J. F., C. E. Aslan, H. S. Rogers, K. H. Redford, J. L. Maron, J. L Bronstein, and C. R. Groves. 2014. Secondary extinctions of biodiversity. Trends in Ecology and Evolution **29**:664-672.

- Aslan, A., P. Hart, J. Wu, and C. E. Aslan. 2014. Evaluating the qualitative effectiveness of a novel pollinator: a case study of two endemic Hawaiian plants. Biotropica **46**:732-739.

- Aslan, C. E. 2015. Pollination of the endangered Arizona hedgehog cactus (*Echinocereus arizonicus*). American Midland Naturalist **173**:61-72.

- Aslan, C. E., N. Holmes, D. Croll, B. Tershy. 2015. Benefits to poorly studied taxa of conservation of bird and mammal diversity on islands. Conservation Biology **29**:133-142.

- Aslan, C. E., A. B. Aslan, B. Tershy, D. Croll, and E. S. Zavaleta. 2014. Building taxon substitution guidelines on a biological control foundation. Restoration Ecology **22**:437-441.

- Aslan, C. E., M. Pinsky, M. Ryan, S. Souther, K. Terrell. 2014. Cultivating creativity in conservation science. Conservation Biology **28**:345-353.

- Aslan, C. E., E. S. Zavaleta, B. Tershy, D. Croll, and R. Robichaux. 2014. Imperfect replacement of native species by non-native species as pollinators of endemic Hawaiian plants. Conservation Biology **28**:478-488.

- Aslan, C. E., E. S. Zavaleta, B. Tershy, and D. Croll. 2013. Mutualism disruption threatens global plant biodiversity: a systematic review. PLoS ONE **8**: e66993.

- Aslan, C. E., E. S. Zavaleta, B. Tershy, and D. Croll. 2012. Effects of native and non-native vertebrate mutualists on plants. Conservation Biology **12**:778-789.

- Thomas, S. M., A. A. Agostinho, L. C. Gomes, M. J. Silveira, M. Rejmánek, C. E. Aslan, and E. Chow. 2012. Using space-for-time substitution and time sequence approaches in invasion ecology. Freshwater Biology **57**:2401-2410.

- Aslan, C., M. Rejmánek. 2012. Native fruit traits may mediate dispersal competition between native and non-native plants. NeoBiota **12**:1-24.

- Brodie, J. F., and C. E. Aslan. 2012. Halting regime shifts in floristically intact tropical forests deprived of their frugivores. Restoration Ecology **20**:153-157.

- Aslan, C. E., M. Rejmánek, and R. Klinger. 2012. Evaluating early spread of woody invaders in urban-rural matrix landscapes: an exploration of efficient methods using two species of Oleaceae. Journal of Applied Ecology **49**:331-338.

- Aslan, C. E., and M. Rejmánek. 2011. Smaller *Olea europaea* fruits have more potential dispersers: implications for olive invasiveness in California. Madroño **58**:86-91.

- Aslan, C. E. 2011. Implications of newly-formed seed dispersal mutualisms between birds and introduced plants in northern California, USA. Biological Invasions **13**:2829-2845.

- Aslan, C. E., and M. Rejmánek. 2010. Avian use of introduced plants: ornithologist records illuminate interspecific associations and research needs. Ecological Applications **20**:1005-1020.

- Epanchin-Niell, R. S., M. B. Hufford, C. E. Aslan, J. P. Sexton, J. D. Port, and T. M. Waring. 2010. Controlling invasive species in complex social landscapes. Frontiers in Ecology and the Environment **8**:210-216.

- Bower, M. J., C. E. Aslan, and M. Rejmánek. 2009. Invasion potential of Chinese tallowtree (*Triadica sebifera*) in California's Central Valley. Invasive Plant Science and Management **2**:386-395.

- Aslan, C. E., M. B. Hufford, R. S. Epanchin-Niell, J. D. Port, J. P. Sexton, and T. M. Waring. 2009. Practical challenges in private stewardship of rangeland ecosystems: yellow starthistle control in Sierra Nevadan foothills. Rangeland Ecology and Management **62**:28-37.

- Aslan, C. E., A. Schaefer, and D. Swann. 2003. *Gopherus agassizii* (Desert Tortoise). Elevational range. Herpetological Review **34**:57.

- Pepperberg, I. M., R. M. Sandefer, D. Noel, and C. P. Ellsworth [Aslan]. 2000. Vocal learning in the grey parrot (*Psittacus erithacus*): Effects of species identity and number of trainers. Journal of Comparative Psychology **113**:371-380.

PUBLICATIONS IN REVIEW

- Veloz, S., E. Chamberlin, M. Brunson, B. Sikes, R. Epanchin-Niell, and C. Aslan. In review. Fire speeds are influenced by landscape management mosaics. Journal of Environmental Management.

- Stevenson, E., C. VanBuren, K. Haubensak, C. Aslan, and S. Souther. In review. Changes in plant community composition and declines in forb diversity over time in a high-elevation rangeland: implications for pollinators. Rangeland Ecology and Management.

- Souther, S., D. Stuart, and C. Aslan. In revision. Traditional harvest systems as models for advancing understanding of dynamics and resilience in socio-ecological systems. Ecosphere.

- Souther, S., C. Aslan, K. Grady, and K. Haubensak. In review. Evaluating the restoration and commercial seed growing potential of native plants that support pollinators. Restoration Ecology.

- Gilb, S., K. Haubensak, C. Aslan, L. Holeski, T. Faske, and S. Souther. In review. Population structure and genetic connectivity in the endangered *Pectis imberbis*: addressing conservation and genetic gaps in the Arizona Sky Islands. Evolutionary Applications.

- Aslan, C. E., K. Haubensak, and K. Grady. In second review. Pollination networks and plant local adaptation: the importance of serving the pollinator community in restoration. Restoration Ecology.

- Garcia Rivera, A., Aslan, C. E., Foster, J. T., & Souther, S. K. (2024). Identifying patterns of seed dispersal and predation across the Emory oak (*Quercus emoryi* torr.) range in Arizona. Southwestern Naturalist.

PUBLICATIONS IN PREPARATION

- Bath-Rosenfeld, R., C. Aslan, K. Grimm, S. Frey, M. Mark, J. Leary. In prep. The importance of fruiting trees for seed-dispersing frugivores on agricultural and pastoral landscapes in southern Costa Rica. Biotropica.

- Aslan, C., G. Cruz, and A. Bennett. In prep. Evaluating eDNA as a monitoring tool for assessing pollinator biodiversity on rights-of-way in Arizona.

- Lee, H., K. Grady, T. Bauer, C. Aslan, and K. Haubensak. In prep. Linking genetic variation of plant functional traits to source climate in key native southwest restoration species. Environmental Restoration.

- Bauer, T., C. Aslan, K. Grady, H. Lee, and K. Haubensak. In prep. Population variation in floral traits predicts potential pollinator response: towards a trait-based framework for improving biodiversity-resilience in restoration during climate change. Conservation Science and Practice.

PUBLIC EDUCATION AND OUTREACH ARTICLES

- Aslan, C. E. Pollinators and climate change. Invited radio interview, Radio Sunnyside. 15 November 2024. Flagstaff, AZ.

- Aslan, C. E., S. Veloz, R. S. Epanchin-Niell, M. W. Brunson, B. A. Sikes. 2023. Scale-dependent feedbacks among protected areas and surrounding socioecological systems. Results webinar delivered to National Parks personnel.

- Aslan, C. E. 2023. Spotlight on Climate: The smallest victims—pollinators on the brink. *Daily Sun* invited article. Flagstaff, Arizona.

- Aslan, C. E. 2018. Coconino Voices: In northern Arizona, climate change will matter to wildlife. *Daily Sun* invited article. Flagstaff, Arizona.

- McCormick, M., Aslan, C. E., and C. Winterbottom. 2017. Celebrating pollination in the Southwest. State Bar Art-Science Event, Flagstaff, Arizona.

- Aslan, C. E. 2016. Friends forever? Environmental change, novel ecosystems, and pollination. Science on Tap, Flagstaff, Arizona.

- Aslan, C. E., and C. Parish. 2015. The Wilburforce Fellowship in Conservation Science: building skills and potential. Landscape Conservation Initiative Field Report. URL: http://nau.edu/LCI/.

- Aslan, C. E. 2014. Rescuing species and interactions in the extinction capital of the United States. Landscape Conservation Initiative Field Report. URL: http://nau.edu/LCI/.

- Aslan, C. E., and R. Prawdick. 2014. "Have seeds, will travel." Desert Leaf: The Catalina Foothills Magazine **28**:18-19.

- Aslan, C. E. 2013. "Celebrating the Sky Islands." Sonorensis **33**:1.

- Aslan, C. E. 2013. "Shifting alliances: How Sonoran Desert plants depend on animals." ASDM News.

- Aslan, C. E. 2012. "The Japanese white-eye as a potential pollinator of native Hawaiian plants." 'Elepaio: Journal of the Hawai'i Audubon Society **72**:26-27.

- Aslan, C. E., R. S. Epanchin-Niell, M. B. Hufford, J. D. Port, J. P. Sexton, and T. M. Waring. 2010. "Invaders in California's ranchlands." [Policy brief.] Submitted to Californian state agencies and legislative offices and containing research results and management recommendations.

- Benedict, B., S. Benjaram, M. Chinoraks, J. Clark, M. Jacobi, P. Kingston, A. Luu, A. Maraglia, and T. O'Bryan. *In press*. "Inyo County biodiversity under rapid environmental change." [Informational brochure.] Advisors: C. Aslan, M. Hufford, and R. Klinger. United States Geological Survey, Bishop, CA.

- Bower, M. J., and C. E. Aslan. 2008. Scenic streets and tainted tributaries: invasion potential of Chinese tallow in California. Cal-IPC News **16**:4-5,11.

- Niell, R., Hufford, M., Aslan, C., Port, J., Sexton, J., & Waring, T. 2007. Yellow Starthistle Management and Reality. Noxious Times, **9**:1.

- Niell, R., C. Aslan, M. Hufford, J. Port, J. Sexton, and T. Waring. 2006. Yellow starthistle symposium: The need for regional approaches to invasion management in Sierra Nevada foothill rangelands. Noxious Times **8**:4-5.

- Aslan, C. E. 2005. Australia: a case study in strong weed invasion response. Noxious Times **7**:10-11.

CONFERENCE PUBLICATIONS

- Aslan, C. E., M. B. Hufford, R. S. Niell, J. D. Port, J. P. Sexton, and T. M. Waring. 2007. The need for increased cooperation and coordination in yellow starthistle invasion management in Sierra Nevada foothill rangelands. Proceedings of the California Invasive Plant Council Symposium **10**:9-11.

CONFERENCE PRESENTATIONS

- Liebig, E.F. (undergraduate researcher), D.E. Sanchez, S.J. Marriott, A.L. Riley, F.M. Walker, and C.E. Aslan. 2025. Evaluating the merits of environmental DNA to assess pollinator biodiversity. The Wildlife Society Joint Annual Meeting. Albuquerque, NM.

- Aslan, C., S. Souther, C. Liang, M. Sandor, K. Haubensak. 2025. Assessing the impact of invasive species on threatened and endangered plants in Hawaii's Pōhakuloa Training Area. National Military Fish and Wildlife Association Meeting. Louisville, KY.

- Aslan, C.E., S. Souther, C. Liang, M. Sandor, and K. Haubensak. 2024. Predicting interacting responses of invasive and threatened and endangered plants to foundational invader removal (poster). Department of Defense Energy and Environment Innovation Symposium. Washington, DC.

- Aslan, C.E., S. Gilb, Z. Evans, S. Souther, A. Thode, A. Youberg. 2024. Measuring and predicting disturbance resilience, with emphasis on fire. Southwest Fire Ecology Conference. Sante Fe, NM.

- Aslan, C.E., M. Sample, M. Sandor, S. Souther, S. Stortz, C. Levine, M. Gray. 2023. Mapping predicted social-ecological fire resilience and vulnerability across the Sonoran Desert, Arizona, USA. Southwest Fire Ecology Conference. Monterey, CA.

- Aslan, C.E., M.W. Brunson, R. Tarver, R.S. Epanchin-Niell, S. Veloz, and B.A. Sikes. 2022. "Relationships between management trajectories and ecological patterns in management mosaic landscapes (poster)." Biennial Conference of Science and Management on the Colorado Plateau and Southwest Region, September 2022, Flagstaff AZ.

- Aslan, C.E. 2022. "Investigating limitations to pollination in rare and endangered cacti: case studies of *Pediocactus* and *Coryphantha*." Biennial Conference of Science and Management on the Colorado Plateau and Southwest Region, September 2022, Flagstaff AZ.

- Aslan, C.E. 2022. "Social perspectives on pollinator stressors: the role of non-native species." Entomological Society of America, November 2022, Vancouver, Canada.

- Aslan, C. E., L. Zachmann, R. S. Epanchin-Niell, M. W. Brunson, S. Veloz, and B. A. Sikes. "Relationships between jurisdictional boundaries and ecological patterns in national park-centered landscapes." North American Congress for Conservation Biology, Reno, NV, July 2022.

- Aslan, C. "The impact of introduced honey bees on pollination mutualisms in Hawaii." International Union for the Study of Social Insects Meeting, San Diego, CA, July 2022.

- Aslan, C., and B. Sikes. "Integrating social and ecological predictors to understand variation within ecosystems: a case study of the Great Smoky Mountains National Park PACE." Great Smoky Mountains National Park Science Colloquium (Virtual), March 2022.

- Aslan, C., M. Sandor (presenter), M. Sample, S. D. Stortz, S. Souther, C. R. Levine, L. H. Samberg, M. Gray, and B. G. Dickson. "Estimating social-ecological fire resilience across an arid region." Ecological Society of America (Virtual), August 2020.

- (Poster) Souther, S., M. Sample, S. Gabrielson, and C. Aslan. "Pollinators in North America: Diversity, spatiotemporal patterns, and knowledge gaps." Ecological Society of America (Virtual), August 2020.

- Sandor, M., C. Aslan, A. Shiels, W. Haines, and C. Liang. “Invasive predators decrease the number and specialization level of pollinators for native and endangered Hawaiian plants.” North American Congress for Conservation Biology, Denver, CO, July 2020.

- Aslan, C. E., A. Shiels, W. Haines, M. Sandor, and C. T. Liang. “Invasive predators reduce pollinator visitation to native plants.” North American Congress for Conservation Biology, Denver, CO, July 2020.

- Aslan, C. E. “Climate migration and pressures on natural resources and communities of the Colorado Plateau.” Biennial Conference of Science and Management on the Colorado Plateau, Flagstaff, AZ, September 2019.

- Aslan, C. E. “Science at the nexus of diversity and history: research on the North Rim Ranches.” Biennial Conference of Science and Management on the Colorado Plateau, Flagstaff, AZ, September 2019.

- Shiels, A. B., C. E. Aslan, W. P. Haines, A. Aue, C. T. Liang. “Rodent trapping grids are sustainable for long-term landscape suppression of invasive rat (*Rattus rattus*), but not mouse (*Mus musculus*), populations in Hawaii.” International Conference of Rodent Biology and Management, Potsdam, Germany, September 2018.

- Aslan, C. E., C. T. Liang, W. P. Haines, A. B. Shiels. “Heavy dominance of non-native pollinators in a Hawaiian dry forest ecosystem.” Ecological Society of America, New Orleans, LA, August 2018.

- Aslan, C. E., B. Petersen, P. Beier, D. Stuart, S. Stortz, L. Samberg, B. Dickson, M. Gray, and D. Theobald. “Assessing socioecological adaptive capacity to facilitate climate adaptation planning.” Biennial Conference of Science and Management on the Colorado Plateau, Flagstaff, AZ, October 2017.

- Aslan, C. E., C. T. Liang, W. P. Haines, A. B. Shiels, and A. Aue. “Relationships between predators, pollinators, and plants in a tropical dry forest.” Hawaii Ecosystems Meeting, Hilo, HI, June 2017.

- Aslan, C. E., C. T. Liang, W. P. Haines, and A. B. Shiels. “Absence of flower visitation to an endemic Hawaiian mint species: evidence of lost mutualism?” North American Congress for Conservation Biology, Madison, WI, July 2016.

- (Poster) Liang, C. T., C. E. Aslan, W. P. Haines, and A. B. Shiels. “Predators, pollinators, and native plants in an invaded Hawaiian ecosystem,” North American Congress for Conservation Biology, Madison, WI, July 2016.

- Aslan, C. E. “Novel ecosystems are structured by novel interactions: the role of non-native species in pollination.” Biennial Conference of Science and Management on the Colorado Plateau, Flagstaff, AZ, October 2015.

- (Poster) Liang, C. T., C. E. Aslan, W. P. Haines, and A. B. Shiels. “Pollination in an invaded Hawaiian ecosystem,” Ecological Society of America, Baltimore, MD, August 2015.

- Aslan, C. E. "Non-native mutualists: better than nothing?" International Congress for Conservation Biology, Missoula, MT, July 2014.

- Aslan, C. E. "The birds and the bees: pollination, seed dispersal, and environmental change." Avicultural Society of America Education Meetings, Phoenix, AZ, March 2014. Invited presentation.

- Aslan, C. E., E. S. Zavaleta, B. Tershy, and D. Croll. "Vertebrate frugivore loss: high-risk geographic areas and hypothesized community-level impacts." Ecological Society of America, Minneapolis, MN, August 2013.

- Aslan, C. E., E. S. Zavaleta, B. Tershy, and D. Croll. "Large flower size may facilitate pollination disruption in Hawaiian lobeliads." International Congress for Conservation Biology, Baltimore, MD, July 2013.

- Aslan, C. E. "Community-level impacts resulting from widespread loss of vertebrate frugivores." Association for Tropical Biology and Conservation Annual Meeting, San Jose, Costa Rica, June 2013.

- Aslan, C. E., B. Sikes, and K. B. Gedan. "Mutualisms between native and non-native species: global trends and Californian case studies." California Invasive Plant Council Symposium, Rohnert Park CA, October 2012.

- Aslan, C. E., E. S. Zavaleta, B. Tershy, and D. Croll. "Effectiveness of the non-native Japanese white-eye as a novel pollinator of endemic Hawaiian plants." Ecological Society of America Annual Meeting, Portland, OR, August 2012.

- Aslan, C. E. "Invasive weed dispersal by birds." California Department of Fish and Game Integrated Pest Management Seminar, Monterey, CA, March 2012.

- Aslan, C. E. "Evaluating the potential of non-native mutualists to rescue native species from extinction." 25th International Congress for Conservation Biology, Society for Conservation Biology, Auckland, New Zealand, December 2011.

- Aslan, C. E. "Restoration in a land of widows: can non-native birds pollinate endangered Hawaiian plants?" Hawaiian Ecosystems Meeting, University of Hawaii-Hilo, Hilo, HI, July 2011.

- Aslan, C. E. "Future research directions: Fitness and the new selective environment imposed by non-native mutualist partners," 5th Biennial UC Santa Cruz Plant Research Symposium, Santa Cruz, CA, February 2011.

- Aslan, C. E. "The role of bird-mediated dispersal in plant invasiveness," 5th International Symposium-Workshop on Frugivores and Seed Dispersal, Montpellier, France, June 2010.

- Aslan, C. E. "Emerging mutualisms: The role of bird dispersal in non-native plant invasions," Northern California Botanists 2010 Symposium, Chico, CA, January 2010.

- (Poster) Aslan, C. E., and M. Rejmánek. "Accessing citizen science to guide invasion ecology: A survey of birdwatchers illuminates the relationship between birds and nonnative plants," 93rd Ecological Society of America Annual Meeting, Milwaukee WI, August 2008.

- Aslan, C. E., M. B. Hufford, R. S. Niell, J. D. Port, J. P. Sexton, and T. M. Waring. "Calling for a regional, cooperative response to invasive species: limitations to yellow starthistle control implementation by ranchers," Bay Area Conservation Biology Symposium, Davis CA, February 2008.

- Bower, M. J., and C. E. Aslan. "Invasion Potential of Chinese Tallow (*Triadica sebifera*) in California's San Francisco Bay-Delta region," Bay Area Conservation Biology Symposium, Davis CA, February 2008.

- (Poster) Aslan, C. E., and M. Rejmánek. "Strange bedfellows: the effect of urban plant introductions on bird-plant mutualisms," Conference for Sustainability IGERTs, Fairbanks AK, October 2007.

- Aslan, C. E., M. B. Hufford, R. S. Niell, J. D. Port, J. P. Sexton, and T. M. Waring. "Limitations to implementation of yellow starthistle control measures by ranchers," 92nd Ecological Society of America Annual Meeting, San Jose CA, August 2007.

- Aslan, C. E., and M. Rejmánek. "The role of bird dispersal in plant invasion pattern," California Invasive Plant Council and the Western Section of the Wildlife Society Joint Conference, Monterey CA, January 2007.

- Aslan, C. E., M. B. Hufford, R. S. Niell, J. D. Port, J. P. Sexton, and T. M. Waring. "Yellow starthistle in Sierra Nevada foothill rangeland: control barriers and potential solutions," California Invasive Plant Council Symposium, Rohnert Park CA, October 2006.

FELLOWSHIPS, GRANTS, AND AWARDS

Department of Defense contract: Developing Phase 2 of a High-Elevation Fuels Treatment Plan, Ft Huachuca, AZ	2023	$94,758
Department of Defense SERDP grant: Using population and fire models to predict interacting responses of invasive and Threatened and Endangered plants to foundational invader removal	*2022*	$1,117,935
Joint Fire Science Program Grant: Post-fire social-ecological communities: how social and ecological conditions predict post-fire recovery and state transition	*2022*	$370,556
United States Forest Service: Pediocactus Survey and Ecology	*2021*	$26,000
Electric Power Research Institute: Assessment of Pollinator Biodiversity on Transmission Line Rights-of-Way Using eDNA	*2023*	$123,648
Electric Power Research Institute: The Contribution of Electric Utility Transmission Line Rights-of-Way to Pollinator Biodiversity in Arizona	*2019*	$396,600
Northern Arizona University: Most Promising New Scholar Award	*2018*	
Northern Arizona University: Sustainability Leadership Award	*2018*	
(Co-PI) Agriculture and Food Research Initiative: Developing pollinator-dependent plant materials for use in a growing restoration economy	*2018*	$998,631
Section 6 Funding for Research on T&E Arizona Plants	*2018*	$19,853
National Science Foundation Coupled Natural Human Systems Grant: Scale-dependent feedbacks among protected areas and surrounding		

socio-ecological systems	*2016*	$1,305,443
Section 6 Funding for Research on T&E Arizona Plants	*2015*	$19,703
Joint Fire Science Program Grant: Assessing the implications of changing Fuels and fire regimes on management and resiliency in the Sonoran Desert	*2015*	$400,428
Wilburforce Conservation Fellowship	*2015*	
Section 6 Funding for Research on T&E Arizona Plants	*2014*	$10,346
Co-PI: The impact of non-native predators on pollinators and native plant reproduction in a Hawaiian dryland ecosystem. Department of Defense SERDP grant.	*2013*	$1,421,316
Metabolic Studios community sustainability grant: "Pollinator Hotspots"	*2013*	$25,000
Section 6 Funding for Research on T&E Arizona Plants	*2012*	$19,038
Island Conservation Island Biodiversity Modeling Contract	*2012*	$7,220
NSF Travel Support, Symposium on Frugivores and Seed Dispersal	*2010*	$1,000
Smith Postdoctoral Fellowship	*2010*	$143,720
National Science Foundation Graduate Research Fellowship	*2005-2010*	$121,500
Outstanding Graduate Teaching Award, University of California, Davis	*2010*	
UC Davis NSF Fellows Research Support Grant Dissertation research funding	*2008*	$3,000
Travel Award, Conference for Sustainability IGERTs, Fairbanks, AK	*2007*	$800
UC Davis Biological Invasions IGERT Research Grant Dissertation research funding	*2007*	$5,000
Montana State Seed Money Grant Dissertation research funding	*2006-2007*	$3,500
NSF IGERT on Biological Invasions, Long-Term Fellowship	*2004-2007*	$71,000
Graduate Scholars Fellowship, University of California, Davis	*2004-2005*	$33,000
Most Outstanding Graduating Senior Award, College of Science, University of Arizona	*2000*	
Outstanding Graduating Senior Award, Department of Ecology and Evolutionary Biology, University of Arizona	*2000*	
Flinn Foundation Scholarship, University of Arizona	*1996*	$40,000

RESEARCH EXPERIENCE

Northern Arizona University *2014-present*

Associate Professor and *Assistant Research Professor*

- Assessment of the impact on native communities of non-native mutualists: generality and connectance and shifting competitive regimes.
- Examination of the relationship between administrative boundaries and ecological boundaries; socio-ecological thresholds; the influence on ecological divergence of communication, vulnerability, and biological invasions.
- Resource Condition Assessments for the Greater Grand Canyon Landscape.
- Assessment of shifting fire regimes and species invasions in the Sonoran Desert.
- Ecological response to restoration of pollinator guilds in high-elevation Hawaiian ecosystems.
- Pollination syndromes and mutualism disruption: Quantification of pollination of endangered Arizona plants to determine how grazing and burning history affect pollinator communities.

Arizona-Sonora Desert Museum *2012-2014*

Conservation Research Scientist

- Assessment of pollination across heterogeneous landscapes. Tracking of seed set and pollinator occurrence, densities, and reproduction with relation to water sources and vegetation availability.
- Assessment of the relationships between seed dispersal and fitness across functional gradients of vegetation. Evaluation of Sonoran Desert plant recruitment patterns across gradients of competition, stress, and disturbance.
- Quantitative modeling of biodiversity patterns on global islands. Development of database uniting vertebrate and non-vertebrate biodiversity patterns for global islands. Methods include comprehensive literature review, expert interviews, and mixed effects and spatial modeling in R.
- Pollination syndromes and mutualism disruption: Quantification of pollination of the endangered *Echinocereus arizonicus* across an elevational gradient. Assessment of translocation as a viable conservation strategy. Methods include pollination observations, manual pollination trials, hummingbird and bee surveys.

University of California, Santa Cruz *2010-2012*
Smith Conservation Fellow, Advisor: Dr. Erika Zavaleta
Postdoctoral Researcher

- Analysis of the efficacy and applicability of taxon substitution as a means of plant species conservation through reestablishment of lost reproductive mutualisms. Methods included web-based survey, systematic literature review, meta-analysis, and field work focusing on plant species in the Hawaiian *Clermontia* lineage. Field methods included focal individual observations, systematic foraging observations, pollination and seed set quantification, and aviary-based feeding preference experiments.

University of California, Davis *2004-2010*
Graduate Dissertation Research, Advisor: Dr. Marcel Rejmánek
Graduate Student

- Exploration of the respective roles of bird dispersal and moisture availability in invasiveness of introduced woody plant species in north-central California. Field experiments focused on three case study species: *Triadica sebifera*, *Olea europaea*, and *Ligustrum lucidum*. Methods included: field-based bird foraging observations, variable distance sampling to census bird populations, aviary cafeteria experiments, irrigation-controlled garden, seed/seedling outplanting, vegetation sampling for population and reproduction quantification, ornithologist questionnaire delivered by mail.

University of California, Davis *2006-2008*
Department of Evolution and Ecology, Advisor: Marcel Rejmánek Lab Group
Graduate Student

- Assessed invasion potential and identified abiotic barriers to invasiveness in *Triadica sebifera*, a common introduced tree species in Californian Central Valley cities. Field experiments investigated germination and early plant growth under varying naturally-occurring conditions in the region of introduction.

University of California, Davis *2004-2008*
Integrative Graduate Education and Research Traineeship (IGERT)
Advisor: Dr. Sharon Strauss
Long-Term Predoctoral Fellow

- Identified factors influencing rancher response to invasion of yellow starthistle (*Centaurea solstitialis*) in foothills rangelands. Worked closely with an interdisciplinary team of six

graduate students. Administered questionnaires and semi-structured interviews to Californian ranchers to determine rancher behavior toward weeds, the factors determining weed control choices, and the most effective weed control techniques from ranchers' point of view.

Saguaro National Park, Tucson, AZ *2000-2001*
Resources Management Division, Supervisor: Don Strong
Conservation Intern

- Surveyed mid- to large-sized mammals at high elevations in the Rincon Mountains to evaluate population and movement dynamics. Methods included infrared-triggered motion-sensing photography (Trailmaster) and hair snares.

University of Arizona, Tucson, AZ *1998-2000*
Dept. of Ecology and Evolutionary Biology, Undergraduate Biology Research Program
Honors Thesis Advisor: Dr. Robert Robichaux
Undergraduate Research Assistant

- Assessed the impacts of introduced house mice (*Mus musculus*) in Haleakala National Park, Hawaii. Sampled house mouse populations to identify range limits; quantified seed set in threatened Haleakala silversword (*Argyroxiphium sandwicense*) populations to explore indirect effects of mouse impacts on native pollinators.

TEACHING EXPERIENCE

Northern Arizona University *2020*
Professor, Topics in Environmental Studies (3 credit writing-intensive class)

Northern Arizona University *2020 and 2023*
Professor, Environmental Majors Capstone Course

Utah State University *2020*
Guest lecturer, "Conservation Biology" (Undergraduate class)

- "Management boundaries and habitat fragmentation"

Northern Arizona University *2019-present*
Professor, Conservation Biology (3 credit lecture + 1 credit lab; field trips)

Northern Arizona University *2017-present*
Professor, Departmental Seminar Series (2 credit required course for graduate students)

Northern Arizona University *2015-2021*
Professor, Essential Ecology (3 credit lecture + 1 credit lab; 2 TA-led lab sections; field trips)

Northern Arizona University *2019*
Professor, Writing for Non-Scientific Audiences (2 credit graduate seminar)

Northern Arizona University *2018*
Professor, Research Ethics (2 credit graduate seminar)

Northern Arizona University *2018*
Professor, Grant-writing and Professional Tools (2 credit graduate seminar)

Sonoma State University *2017*

Guest lecturer, "Novel mutualisms" (Undergraduate Ecology class)

- "Complexities of conservation: understanding interactions to conserve wild communities"

Northern Arizona University *2017*
Professor, Socioecology of Resilience (2 credit graduate seminar)

Northern Arizona University *2016*
Professor, Spatial Scaling in Ecology (2 credit graduate seminar)

Northern Arizona University *2016*
Professor, Environmental Sustainability (3 credit lecture + 1 credit discussion; field trips)

University of Arizona *2013-2014*
Committee Member, Master's Thesis Committee, Dept of Ecology and Evolutionary Biology

University of Arizona *2013-2014*
Advisor, Honors Thesis Committee, Dept of Ecology and Evolutionary Biology

Arizona-Sonora Desert Museum
Guest Instructor, Prescott College Undergraduate Botany Course *2013*

- Served as co-instructor for one full semester (3 credits) for an undergraduate student participating in a self-directed botany exploration and citizen science development course.

Arizona-Sonora Desert Museum
Ecology research instructor *2012-2013*

- Designed and delivered several one-day research experience courses for high school students and K-12 educators
- Designed and delivered "Ecological Concepts" and "Pollination" segments of intensive Museum docent training course

University of Arizona
Guest lecturer, "Conservation Biology" (Undergraduate Course) *2012*

- "Biological invasions and conservation"

University of Hawaii, Hilo *2012*
Guest lecturer, "Quantitative Ecology" (Graduate Course)

- "Meta-analysis: methods and concepts"

Cabrillo College, California *2011*
Guest lecturer, "Physical Geography" (Undergraduate Course)

- "Mutualisms and movement and the implications of species extinctions and introductions for biodiversity"

University of California, Davis *2010*
Guest lecturer, "Biological Invasions" (Undergraduate Seminar)

- "The role of bird dispersal in invasiveness of fleshy-fruited plants"

University of California, Davis *2009*
Instructor, "Californian Biodiversity and Rapid Environmental Change"

- Collaboratively with another graduate student, developed and taught new upper-division undergraduate course entitled "Californian Biodiversity and Rapid Environmental Change." Created course outline, objectives, syllabus; selected covered material and required text; wrote and delivered lectures and exams; graded written assignments. Designed and developed field course component. Course included week-long field course component in which students developed field research skills by working with USGS scientists in eastern California. Student evaluations: average course rating 4.97/5.0; average instructor rating 5.0/5.0.

University of California, Davis *2009*
Teaching Assistant, "Population Biology of Weeds"
- Taught weekly lab focused on weed identification, assisted instructor with large-scale competition experiments, graded exams and written assignments.

University of California, Davis *2007*
Co-organizer and Graduate Liaison, Society for Conservation Biology Undergraduate Seminar Series
- Recruited and introduced seminar speakers, handled course logistics, delivered seminars

University of San Francisco, CA *2007, 2008*
Guest lecturer, "Invasion Ecology" (Graduate Course)
- "Bird dispersal and invasive plants in California's Central Valley"

University of California, Davis *2006-2009*
Mentor
- Supervised and trained 12 undergraduate research interns. Mentored first-year IGERT graduate students, connecting them with resources and assisting with their early research idea development.

University of California, Davis *2005*
Teaching Assistant, "Plant Ecology"
- Led field trips, formed and conducted study groups, graded exams and written assignments.

Peace Corps, Honduras *2001-2004*
Natural Resources Volunteer
- Worked in rural Honduran village with local elementary school teachers to develop environmental education curriculum. Planned and delivered environmental education lessons. Created Environmental Education and Visitors' Center to teach locals of all ages about species and processes in a regional national park.

University of Arizona, Tucson, AZ *1998*
Undergraduate Teaching Assistant, "Conservation Biology"
- Led field trips, formed and conducted study groups, graded exams and written assignments.

GRADUATE STUDENT ADVISEES

Croydon, Alex. MS Student, Northern Arizona University 2024-pres
Research topic: Natural history and conservation of the endangered tree, *Zanthoxylum hawaiiense*

Woody, Shawna. MS Student, Northern Arizona University 2024-pres
Research topic: The effect of introduced bison on pollinators in Grand Canyon National Park

Fox, Kara. MS Student, Northern Arizona University *2023-pres.*
Research topic: Monitoring plant community change driven by climate change and fire in Bandelier National Monument

Ryder, Hanna. MS Student, Northern Arizona University *2023-pres.*
Research topic: Change in plant communities over 19 years in high-elevation Arizona rangelands

Steinmetz, Olivia. MS Student, Northern Arizona University *2023-pres.*
Research topic: Breeding system and pollination of *Pediocactus paradenei* and *Pediocacus peeblesianus* var. *fickeiseniae*

Reed, Dustin. MS Student, Northern Arizona University *2022-pres.*
Ecological functions of powerline rights-of-way and natural meadows in ponderosa pine forest.

Colombo, Sarah. MS Student, Northern Arizona University *2021-pres.*
Research topic: Pollination and habitat requirements of *Pediocactus paradenei*.

Cruz, Gregory. PhD Student, Northern Arizona University *2021-pres.*
Research topic: Powerline right-of-way management and pollinators.

(Co-Advisor) Gold, Michaela. MS Student, Northern Arizona University *2020-pres.*
Research topic: Use of monitoring data by rancher collaboratives.

(Co-Advisor) Sample, Martha. PhD Student, Northern Arizona University *2019-pres.*
Research topic: Monitoring of restoration efficacy in the US/Mexico borderlands.

(Co-Advisor) Lehnert, Savannah. MS Student, Northern Arizona University *2019-2021*
Research topic: Socioecological dynamics on working lands in Costa Rica.

(Co-Advisor) Murrieta, Bernardo. MS Student, Northern Arizona University *2019-pres.*
Research topic: Springs and streams of the US/Mexico borderlands.

Fankhauser, Kaci. MS Student, Northern Arizona University *2019-2021*
Research topic: Restoration efforts and wildlife.

Sterner, Sarah. MS Student, Northern Arizona University *2018-2020*
Research topic: Vegetation patterns at jurisdictional boundaries.

(Co-Advisor) Leary, John. MS Student, Northern Arizona University *2017-2019*
Research topic: Incentives for tree planting among small farmers in Costa Rica.

(Co-Advisor) Bath-Rosenberg, Robyn. MS Student, Northern Arizona University *2017-2019*
Research topic: Wildlife use of fruiting plants in agricultural landscapes in Costa Rica.

Tiffany, Bri. MS Student, Northern Arizona University *2017-2019*
Research topic: The effect of administrative boundaries on bark beetle management.

Winterbottom, Caitlin. MS Student, Northern Arizona University *2016-2018*
Research topic: Effect of phenological shifts on interacting mycorrhizal and pollination mutualisms.
(Co-Advisor) Continued on to PhD program, Biology, Northern Arizona University
Research topic: Climate change and altered phenology: effects on saguaro pollination.

McCormick, Molly. MS Student, Northern Arizona University *2015-2017*
Research topic: The effect of isolation and plant diversity on pollination in restoration plantings.

Wan, Ho Yi. PhD Student. Northern Arizona University. *2014-2018*
Research topic: Improving habitat models for the Mexican spotted owl.

(Co-Advisor) Sample, Martha. MS Student, Northern Arizona University *2014-2016*
Research topic: Non-native pines in Patagonia, Argentina: removal vs. restoration.

Holm, Jackie. MS Student, Northern Arizona University *2014-2016*
Research topic: Using wildlife cameras to evaluate and improve mule deer habitat occupancy models.

(Committee Member) Nicholson, Laura. PhD Student, Northern Arizona University *2022-pres.*
Research topic: Dynamics of Emory oak in response to environmental change.

(Committee Member) Caruolo, Cara. PhD Student, Northern Arizona University *2023-pres.*
Research topic: Social drivers of fire recovery, Arizona and New Mexico.

(Committee Member) Esch, Bryce. PhD Student, Northern Arizona University *2019-pres.*
Research topic: Restoration in ponderosa pine forests.

(Committee Member) Samuel, Ella. MS Student, Northern Arizona University *2019-pres.*
Research topic: Grower practices for restoration.

(Committee Member) Manak, Leah. MS Student, Northern Arizona University *2019-pres.*
Research topic: Forest fragmentation in Honduras.

(Committee Member) Annetts, Tyler. MS Student, Northern Arizona University *2019-pres.*
Research topic: Vegetation change over time as a result of climate shifts.

(Committee Member) Simpson, Ashlee. MS Student, Northern Arizona University *2019-pres.*
Research topic: Functional diversity and time since grazing.

(Committee Member) Major, James. MS Student, Northern Arizona University *2019-pres.*
Research topic: Identifying resilient rivers for protection recommendations.

(Committee Member) Smith, Sarah. MS Student, Northern Arizona University *2019-pres.*
Research topic: Ecosystem services and potential conservation policy in the Gila River.

(Committee Member) Gabrielson, Sara. PhD Student, Northern Arizona University *2018-pres.*
Research topic: Seed dispersal of native Hawaiian plants by non-native birds.

(Committee Member) Motyka, Peter. PhD Student, Northern Arizona University *2018-pres.*
Research topic: Birds as reservoirs of tick-borne relapsing fever.

(Committee Member) Mahoney, Sean. PhD Student, Northern Arizona University *2017-pres.*
Research topic: Conservation of the southwestern willow flycatcher.

(Committee Member) Lausch, Rebecca. PhD Student, Northern Arizona University *2017-pres.*
Research topic: Hybridization and habitat shifts in North American flickers.

(Committee Member) Chesshire, Paige. MS Student, Northern Arizona University *2016-pres*.
Research topic: Pollination communities along an elevational gradient on the San Francisco Peaks.

(Committee Member) McCabe, Lindsie. PhD Student, Northern Arizona University *2015-pres*.
Research topic: Pollinators along an elevational gradient on the San Francisco Peaks.

(Committee Member) Elkind, Kaitlyn. MS Student, Northern Arizona University *2016-2018*
Research topic: Using remote sensing and UAVs to map buffelgrass distribution in southern AZ.

(Committee Member) Schmidt, Carly. MS Student, Northern Arizona University *2014-2016*
Research topic: Youth involvement in watershed restoration: motivations and efficacy.

ADDITIONAL RELEVANT EMPLOYMENT, SERVICE, AND STUDY EXPERIENCE

Member (Science), Advisory Committee 2025
Baaj Nwaavjo I'tah Kukveni — Ancestral Footprints of the Grand Canyon National Monument

Leadership Training Program, Group Coaching. Lancaster Leadership 2024
College of the Environment, Forestry, and Natural Science, NAU

External reviewer, Academic Program Review. Dept of Environmental Studies/Sciences. 2025
Santa Clara University

Invited seminar: Social Insect Research Group, ASU 2024
"Linking landscape-scale change to local-scale consequences: plant-pollinator dynamics in high-elevation, dryland systems"

Invited seminar: School of Natural Resources and the Environment, UofA 2023
"Grazing, climate change, and pollinators: Exploring two decades of change on northern Arizona rangelands"

Invited seminar: School of Informatics, Computing, and Cyber-Systems, NAU 2023
"Linking landscape-scale change to local-scale consequences…and vice versa"

External reviewer, Academic Program Review. BS in Environmental Science. 2023
Kennesaw State University

Symposium co-organizer, Biennial Conference on Science and Management on the 2022
Colorado Plateau and Southwest Region. Topic: Demystifying climate adaptation planning: frameworks, partnerships, and case studies from diverse perspectives

Chair, Science Advisory Board, David H. Smith Conservation Science Partners 2023-present

Member, Science Advisory Board, David H. Smith Conservation Science Partners 2022-present

Member, Friends of Camp Colton Board 2022-present

Member, Inaugural cohort, NAU STEM Faculty Academy: An Equity-oriented, 2022-2023
Anti-racist Community of Practice

Invited seminar: Gedan Ecology Group, George Washington University 2021
"Globally invasive predators reduce pollinator visitation to native Hawaiian plants"

Special issue organizer, proposer, and co-editor, *AoB Plants* 2020
"The role of seed dispersal in plant populations: perspectives and advances in a changing world"

Workshop organizer, North American Pollinator Conservation Workshop 2020
Oaxaca, Mexico. Commission for Environmental Cooperation.

Invited seminar: Ecology Seminar Series, Utah State University *Feb, 2020*
"Friends forever? Environmental change and pollination."

Invited seminar: Ecology Seminar Series, Utah State University *Feb, 2020*
"Globally invasive predators reduce pollinator visitation to native Hawaiian plants."

Symposium organizer, Biennial Conference on Science and Management on the 2019
Colorado Plateau. Topic: Increased public lands use pressures stemming from warming climate.

Symposium organizer, Biennial Conference on Science and Management on the 2019
Colorado Plateau. Topic: Gaps between science and management on the Colorado Plateau.

Stakeholder results workshop planner/leader, FireAdapt (Joint Fire Science Program Project): Examining the role of management thresholds in Sonoran Desert fire resilience *June, 2019*

Stakeholder results webinar planner/leader, FireAdapt (Joint Fire Science Program Project): Examining the role of management thresholds in Sonoran Desert fire resilience *May, 2019*

Associate Editor, *Conservation Science and Practice* journal 2019-pres.

Invited participant, Social-Ecological Future of the American West Workshop, *May, 2018*
Boise State University

Stakeholder results workshop planner/leader, Green River Basin Landscape Conservation Planning and Design Project *Spring, 2018*

Invited seminar: departmental seminar series, School of Earth Sciences and *April, 2018*
Environmental Sustainability, Northern Arizona University. "The Greater Grand Canyon Landscape Assessment: outcomes and futures."

Invited seminar: departmental seminar series, Odum School of Ecology, University of *April, 2018*
Georgia. "Non-native species in mutualisms boost ecological resistance but not resilience."

Quarterly reviewer, National Geographic Grants *2018-pres.*

Flinn-Brown Civic Leadership Academy and Fellowship *Fall, 2017*

Stakeholder workshop planner/leader, FireAdapt (Joint Fire Science Program Project): Examining the role of management thresholds in Sonoran Desert fire resilience *March, 2017*

Panelist, NSF Panel on Coupled Natural-Human Systems Research *2017*

Member, Advisory Committee, Doris Duke Conservation Scholars Program at NAU *2016-pres.*

Workshop coordinator, Conservation Fellows, North American Congress for Conservation Biology, Madison, WI. *Jul., 2016*

Interim Associate Editor, *Frontiers in Ecology and the Environment* *2016-2018*

Organizer, Combined Conservation Lab Group, Northern Arizona University *Aug. 2015-pres*
Meetings and networking events including faculty and students from five university departments.

Symposium organizer, North American Congress for Conservation Biology *Jul., 2016*
Madison, Wisconsin. "A call to arms: Catalyzing innovative career paths in conservation science."

Symposium organizer, North American Congress for Conservation Biology *Jul., 2016*
Madison, Wisconsin. "Bright spots" in conservation: communication for inspiration."

Symposium organizer, Biennial Conference on Science and Management on the *Oct., 2015*
Colorado Plateau, Flagstaff, AZ. "Diverse approaches to incorporating global change into landscape-level conservation."

Symposium organizer, Biennial Conference on Science and Management on the *Oct., 2015*
Colorado Plateau, Flagstaff, AZ. "Novel ecosystems: theory and application on the Colorado Plateau."

Cedar Tree Foundation Innovation in Conservation Careers working group *May, 2015-pres*

Wilburforce Fellowship in Conservation Science: leadership and communication training *April, 2015*

Invited seminar: departmental seminar series, Department of Biology, University of *Jan., 2015*
Kansas. "Novel interactions, novel communities: understanding mutualisms for conservation and restoration."

Invited seminar: departmental seminar series, Department of Biology, Southern *Nov., 2014*
Utah University. "Complexities of conservation: understanding interactions to conserve wild communities."

Invited seminar: departmental seminar series, School of Earth Science and *Oct., 2014*
Environmental Sustainability, Northern Arizona University. "Conservation from species to communities: how interactions mediate the effects of diversity on ecosystem function."

Arizona-Sonora Desert Museum *2012-2014*
Conservation Research Scientist

- Research Focus: Global biodiversity implications of mutualism disruption and novel mutualism formation; spatial comparison of global biodiversity patterns between taxa; endangered species research; bird-plant interactions; mammal-plant interactions.
- Additional Duties: Coordination with Education and Interpretation staff; editing natural history newsletter *Sonorensis*; public education presentations and teaching; adjunct researcher appointment at the University of Arizona.

Invited seminar: departmental seminar series, Department of Plant Sciences, University *April, 2012*
of Arizona. "Novel mutualisms, nature's backup plans, and plant biodiversity."

Science Working Group member, Desert Landscape Conservation Cooperative *2013-present*

Executive board member, Sonoran Joint Venture, Fish and Wildlife Service *2012-present*

Symposium organizer, Ecological Society of America Annual Meeting, Minneapolis, Minnesota. "What is the fate of a forest without vertebrate frugivores? Merging case studies with theory." *Aug., 2013*

Symposium organizer, Association for Tropical Biology and Conservation Annual Meeting, San Jose, Costa Rica. "The importance of vertebrate seed dispersal for species diversity and community structure – merging case studies with theory." *June, 2013*

Invited seminar: departmental seminar series, Department of Biology, University of Northern Arizona. "Widows and auxiliaries: mutualism in the face of environmental change." *Jan., 2013*

Smith Postdoctoral Fellowship trainings: media interactions; public policy engagement; leadership in conservation; creativity and innovation in conservation; public education; business theory; conservation philosophy 2010-2012

Invited applications reviewer, Smith Postdoctoral Fellowship *2012-present*

Invited applications reviewer, Flinn Foundation Scholarship *2012-present*

Seminar, internal departmental seminar series, Department of Ecology and Evolutionary Biology, University of Arizona, "Novel mutualisms between native and non-native species." *Sept., 2012*

Invited seminar: departmental seminar series, Department of Plant Biology, University of Hawaii, Manoa. "Novel mutualisms between native and non-native species: implications for conservation." *April, 2012*

Symposium organizer, Society for Conservation Biology 25th International Congress for Conservation Biology, Auckland, New Zealand. "Broadening the reach of the SCB: Alternatives for Society action to achieve conservation results." *Dec., 2011*

Invited seminar: departmental seminar series, Department of Ecology and Evolutionary Biology, UC Santa Cruz. "Bird-plant mutualisms in biological invasions and conservation." *June, 2011*

Invited seminar: departmental seminar series, Department of Environmental Studies, UC Santa Cruz. "Mutualism disruption: implications for biodiversity and the conservation potential of taxon substitution." *Jan, 2011*

UC Davis Ecology and Evolution Seminar Series Committee *2009-2010*
Graduate Student Representative

UC Davis Graduate Group in Ecology Application Review Committee *2010*

Belize Foundation for Research and Environmental Education *2008*
Field Assistant

- Assisted with baseline data gathering for study of primate populations relevant to harpy eagle habitat quality study. Trekked for two weeks through rugged, remote rainforest recording GIS information for detected primate groups. Assisted with development of research protocol for longer-term study.

Society for Conservation Biology, Davis chapter *2007-2008*
Treasurer

Society for Conservation Biology, Davis chapter *2007-2008*
Bay Area Conservation Biology Symposium Planning Committee
PR, Recruitment, and Website Manager

- Collaborated with six other graduate students to organize, plan, and conduct a regional conservation biology symposium with over 200 attendees. Conducted all symposium registration, advertising, and fee collection.

Research and Solutions Symposium Organizer, UC Davis *2006*

- As part of team of six graduate students, organized symposium entitled "Cooperative solutions to invasive weed management: Yellow Starthistle." Attendees included state agency personnel, UC Cooperative Extensionists, California ranchers, scientists.

Presenting Science to the Media: Workshop, UC Davis Media Relations *2005*
Workshop Participant

California Department of Food and Agriculture *2005*
Intern

- Created digital policy process training tool for academic users. Interpreted for managers and academics current legislation relevant to invasive species. Assisted with ongoing administrative support of Weed Management Areas.

Peace Corps, Honduras *2003-2004*
Volunteer Coordinator

- Helped to launch northern region volunteer program through creation of regional office and identification of future volunteer assignment sites.

Peace Corps, Honduras *2001-2003*
Volunteer, Natural Resources Sector

- Lived and worked in third world rural community. Created national park species database for national protected area system and for local national park, both using Microsoft Access. Trained national park employees in communities throughout Honduras in techniques of species monitoring and wildlife management. Designed and created visitors' center with interactive exhibits. Designed and conducted environmental education program in primary school.

Saguaro National Park, Tucson, AZ *2000-2001*
Biological Science Technician, GS-0404-04

Undergraduate Biology Research Program, University of Arizona *1997-2000*
Research Assistant

Columbia University's Earth Semester Program *1997*

Biosphere 2 Center, Oracle, AZ

- Completed structured, interdisciplinary semester of environmental studies, research, field trips.

PROFESSIONAL AFFILIATIONS

Lifetime Member, Society for Conservation Biology
Ecological Society of America

PEER REVIEWER

Journals: *Proceedings of the National Academy of Sciences, Ecology Letters, Biological Invasions, Conservation Biology, Journal of Field Ornithology, International Journal of Zoology, Diversity and Distributions, Acta Oecologica, PLoS ONE, Pacific Science, Caribbean Journal of Science, Ecological Applications*
NSF: Department of Environmental Biology, Dynamics of Coupled Natural-Human Systems, Dynamics of Integrated Socio-Environmental Systems

LANGUAGE PROFICIENCY

Spanish (Advanced Proficiency), Italian (Beginning-Intermediate)

REFERENCES

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