

Jennifer M. Ramp Neale

Denver Botanic Gardens Department of Research & Conservation
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EDUCATION

1999-2005 PhD. *University of Colorado*, Department of Ecology and Evolutionary Biology
1995-1999 B.S. *Rhodes College*, Memphis, Tennessee, Major: Biology; Minor: French

RELEVANT PROFESSIONAL EXPERIENCE

As the Director of Research & Conservation at Denver Botanic Gardens, I serve as the public face of our work. I participate in regional, national and international collaborative projects focused on biodiversity conservation. My research is focused on using molecular methods to address questions of conservation concern related to rare plants in Colorado.

Sept 2010 – Present *Director of Research & Conservation*, Denver Botanic Gardens, Denver CO.
Jan 2007 – Sept 2010 *Manager Conservation Programs (1/2007 – 8/2008), Associate Director of Conservation (8/2008 – 9/2010)*, Denver Botanic Gardens, Denver CO.
Nov 2013 – Present *Graduate Faculty Equivalence*, University of Northern Colorado, Greeley CO.
School of Biological Science
Jan 2007-Present *Affiliated Faculty Department of Integrative Biology*, University of Colorado at Denver, Denver CO. Department of Integrative Biology.
Mar 2008 - 2013 *Adjoint Professor of Biology*, University of Denver, Denver CO. Department of Biological Sciences.
May 2006-Oct 2009 *Conservation Genetic Consultant*, LSA Associates & Solano County Water Agency, CA. (Through the University of Colorado Museum).

RELEVANT RESEARCH EXPERIENCE

Sept 2010 – Present *Director of Research & Conservation*, Denver Botanic Gardens, Denver CO.
Director of research efforts at the Botanic Gardens. Supervise a staff of 13 including an applied conservation team, the Kathryn Kalmbach Herbarium and the Sam Mitchel Herbarium of Fungi. The team grows to 20-30 staff in the summer when we hire seasonals and interns.
Jan 2007-Aug 2010 *Associate Director of Research & Conservation*, Denver Botanic Gardens, Denver, CO. Director of the conservation genetics program. Manager of long-term demographic monitoring. Manager of seed collection for ex-situ conservation of imperiled Colorado plant species. Manager of the Kathryn Kalmbach Herbarium and the Sam Mitchel Herbarium of Fungi. Director of the Rare Plant Monitoring Steward Program in collaboration with the Colorado Natural Areas Program.
May 2006-Oct 2009 *Conservation Genetic Consultant*, University of Colorado Museum, “*Solano habitat conservation plan/Natural community conservation plan*” Working with LSA Associates, INC. Ft. Richmond, CA, and Solano County Water Agency, CA.

PEER REVIEWED PUBLICATIONS

Chong, J. P., Minnaert-Grote, J., Zaya, D. N., Ashley, M.C., Coons, J., **Ramp Neale, J. M.**, Molano-Flores, B. 2024. Genetic diversity and structure of *Physaria* on the Kaibab Plateau: implications for conservation. Ecology and Evolution 14(11). <https://doi.org/10.1002/ece3.70523>

Kramer, Andrea T., Barbara Crane, Jeff Downing, James L. Hamrick, Kayri Havens, Amy Highland, Sarah Jacobi, Thomas N. Kaye, Eric Lonsdorf, **Jennifer Ramp Neale**, Ari Novy, Peter Smouse, Doug Tallamy, Abigail White, Jacob Zeldin. 2019. Sourcing native plants to support ecosystem function in different planting contexts. *Restoration Ecology*. 27(3): 470-476. doi.org/10.1111/rec.12931.

Lea, Marian V., John Syring, Tara Jennings, Richard Cronn, Leo P. Bruederle, **Jennifer Ramp Neale**, and Diana F. Tomback. 2018. Development of nuclear microsatellite loci for *Pinus albicaulis* Engelm. (Pinaceae), a conifer of conservation concern. PLOS ONE. https://doi.org/10.1371/journal.pone.0205423

Riser, James P., Anna L. Schwabe, **Jennifer Ramp Neale**. 2017. Novel microsatellite development and characterization for *Phacelia formosula* (Hydrophyllaceae). *Applications in Plant Science* 5(7): 1700030. DOI: 10.3732/apps.1700030

Faist, Akasha M., **Jennifer M. Ramp Neale**, Brita Mines, Sharon K. Collinge. 2015. Maintenance of pollinator function in restored vernal pools: Gnats filling the role of solitary bees. *Ecological Restoration* 33(1):51-60. DOI: 10.3368/er.33.1.51

Schwabe, Anna L., **Jennifer Ramp Neale**, Mitchell E. McGlaughlin. 2015. Examining the genetic integrity of a rare endemic Colorado cactus (*Sclerocactus glaucus*) in the face of hybridization threats from a close and widespread congener (*Sclerocactus parviflorus*). *Conservation Genetics* 16: 443-457. DOI 10.1007/s10592-014-0671-3

DePrenger-Levin, Michelle, **Jennifer M. Ramp Neale**, Thomas A. Grant III., Carol Dawson, Yasemin Ergüner Baytok. 2013. Life History and Demography of *Astragalus microcymbus* Barneby (Fabaceae). *Natural Areas Journal* 33(3):264-275. DOI: 10.3375/043.033.0305

Schwabe, Anna L., Ashley R. Hubbard, **Jennifer Ramp Neale**, Mitchell McGlaughlin. 2013. Microsatellite loci development for rare Colorado *Sclerocactus* (Cactaceae). *Conservation Genetics Resources* 5(1) 69-72. DOI: 10.1007/s12686-012-9735-1

Ramp Neale, Jennifer M., Tom A. Ranker, Sharon K. Collinge. 2008. Conservation of rare species with island-like distributions: a case study of *Lasthenia conjugens* (Asteraceae) using population genetic structure and distribution of rare markers. *Plant Species Biology* 23:97-110. Awarded Best Paper of the Year 2008 by Plant Species Biology. https://doi.org/10.1111/j.1442-1984.2008.00211.x

Geiger, Jennifer M.O., Tom A. Ranker, **Jennifer M. Ramp Neale**, Susan T. Klimas. 2007. Molecular biogeography and origins of the Hawaiian fern flora. *Brittonia* 59(2):142-158. DOI: 10.1663/0007-196X(2007)59[142:MBAOOT]2.0.CO;2

Ramp, Jennifer M., Tom A. Ranker, Sharon K. Collinge. 2006. Restoration genetics of the vernal pool endemic *Lasthenia conjugens*. *Conservation Genetics* 7:631-649. https://doi.org/10.1007/s10592-005-9052-2

Book Sections/Chapters

- **Neale, Jennifer M.R.** Genetic considerations in rare plant restoration: practical applications. Washington, D.C., Island Press. In Plant Reintroductions in a changing climate: promises and perils. 2012, pp. 71-88. DOI: 10.5822/978-1-61091-183-2_5

OTHER PUBLICATIONS

Strategic Reports:

- Ripley, N., **Neale, J.R.**, Kuich, N., Kintgen, M. Hufft, R.A., Schneider, A.. 2020. North American Botanic Garden Strategy for Alpine Plant Conservation. Betty Ford Alpine Gardens, Vail, Colorado. 20 pp. <https://www.botanicgardens.org/sites/default/files/file/2021-05/2020AlpineStrategy.pdf>
- Statwick, Joseph, **Jennifer Ramp Neale**, Anna Sher. 2016. A report to concerned parties on the taxonomy and conservation of the San Rafael milkvetch (*Astragalus rafaensis* M.E. Jones) and Grand Junction milkvetch (*Astragalus linifolius* Osterh.) (Fabaceae).
- Neely, Betsy, Susan Panjabi, Eric Lane, Paige Lewis, Carol Dawson, Andrew Kratz, Brian Kurzel, Tim Hogan, Jill Handwerk, Sarada Krishnan, **Jennifer Neale**, and Nicola Ripley. 2009. Colorado Rare Plant Conservation Strategy. Developed by the Colorado Rare Plant Conservation Initiative. The Nature Conservancy, Boulder, Colorado. 117pp.
- **Ramp Neale, Jennifer M.** 2009. Population genetic analysis of *Lasthenia conjugens* (Asteraceae) (Contra Costa Goldfields) populations within Solano County, CA. Appendix D of 'The Status and Distribution of Contra Costa Goldfields in Solano County, California' Prepared by: LSA Associates, Point Richmond, CA. 83pp.

Specialized publications:

- **Neale, Jennifer Ramp.** 2023. More than pretty places: botanic gardens take the lead on plant conservation and education. Cactus and Succulent Journal. 95(3) pp 221-225.
- Meluso, Anthony, **Neale, Jennifer**, Boom, Brian. 2022. EcoFloras: Fostering community and biodiversity discovery. Public Garden Magazine 37(3) pp 8-11.
- **Neale, Jennifer.** 2019. Colorado takes the lead in protecting alpine plants in North America. *Aquilegia* (publication of the Colorado Native Plant Society) 43(4) pp 18-19.
- Center for Plant Conservation (contributor). 2018. CPC Best Plant Conservation Practices to Support Species Survival in the Wild. 245 pp. (https://saveplants.org/wp-content/uploads/2018/12/CPCbest-plant-conservation-practices.pdf?mc_cid=a8e449deb9&mc_eid=1e71923fa7)
- **Neale, Jennifer Ramp**, Mary Goshorn. 2016. Examining genetic diversity in *ex situ* and *in situ* collections of the federally endangered *Penstemon penlandii* (Kremmling beardtongue). Bulletin of the American Penstemon Society 75:36-44.
- **Denver Botanic Gardens Science: Year In Review** (can all be accessed online: <https://www.botanicgardens.org/science-research>)
 - Neale J. R., R.A. Hufft, K.R. Meza and J.A. Ackerfield. 2022. Science 2022 Year in Review. Denver Botanic Gardens.
 - Neale J. R., R.A. Hufft, K.R. Meza and J.A. Ackerfield. 2021. Science 2021 Year in Review. Denver Botanic Gardens.
 - Neale J. R., R.A. Hufft, and J.A. Ackerfield. 2020. Science 2020 Year in Review. Denver Botanic Gardens.
 - Neale, J. R., R. Hufft, and S. J. White. 2019. Science 2019 Year in Review. Denver Botanic Gardens.
 - Neale, J. R., M. B. Islam, R. A. Hufft, and S. J. White. 2018. Science 2018 Year in Review. Denver Botanic Gardens.
 - Neale, J. R., M. Islam, R. Hufft, and K. H. Eldredge. 2017. Science 2017 Year in Review. Denver Botanic Gardens.

- Neale, J. R., M. Islam, R. Hufft, and K. H. Eldredge. 2016. Science 2016 Year in Review. Denver Botanic Gardens.
- Neale, J. R., M. Islam, R. Hufft, and K. H. Eldredge. 2015. Science 2015 Year in Review. Denver Botanic Gardens.

SELECT RESEARCH GRANTS AND AWARDS RECEIVED

In addition to the receipt of the specific funding awards below, I am responsible for a \$2 million annual budget. Funding sources include Botanic Gardens operating funds, government grants and assistance agreement funds, private grants and contracts, internal endowment funds and private gifts and awards. I manage 13-15 staff and 8 graduate students as well as seasonal staff and interns.

2024 – 2029	Department of Interior, National Park Service award to the Center for Plant Conservation: \$ 4.2 Million, Serve as the project director.
September 2024	Institute of Museum and Library Services, \$520,561.00. Advancing the North American Botanic Garden Strategy for Alpine Plant Conservation. PI for the project.
September 2018	Institute for Museum and Library Services, \$440,199. Enhanced Capacity for Collections. PI for the project.

SELECT INVITED SEMINARS

February 2024	<i>Conservation from a non-profit point of view Denver Botanic Gardens.</i> Presented to Conservation Biology course, University of Colorado, Boulder, CO.
March 2023	<i>Research Activities at Denver Botanic Gardens.</i> Presented to Plant Conservation course Fort Lewis College, Durango, CO.
September 2022	<i>EcoFlora for Everyone: Engaging your community in observing nature.</i> Presented to the Friends of the Chico State Herbarium.
April 2021	<i>Beyond the Gardens: Research Efforts at Denver Botanic Gardens.</i> Presented to the Osher Lifelong Learning Institute at the University of Denver, Denver, CO.
April 2021	<i>Genetic Considerations in Rare Plant Conservation.</i> Presented to UC Santa Barbara lecture series Santa Barbara Botanic Gardens, Santa Barbara, CA.
March 2021	<i>Applied Conservation at Denver Botanic Gardens.</i> Presented to Plant Conservation course Fort Lewis College, Durango, CO.

SELECT ADDITIONAL PRESENTATIONS

September 2024	Science-Art Symposium Mechanisms of Change. Developer and moderator in collaboration with Lisa M.W. Eldred at Denver Botanic Gardens.
August 2024	Updating the North American Botanic Garden Strategy for Plant Conservation - Reestablishing the Network and Developing a Plan of Action. Workshop organizer and group leader. 8 th Global Botanic Garden Congress. Singapore.
May 2023	Interdisciplinary bilingual interpretation: Art meets science at Denver Botanic Gardens. Workshop organizer and presenter. American Alliance of Museums annual meeting. Denver, CO.
April 2023	<i>Community science garden-led programs.</i> Presented at the Cities of the Americas Summit Symposium: Urban Live Lab: Nature-Based Solutions in Cities

SELECT PAPERS PRESENTED AT MEETINGS

Vickerman, Larry and **Neale, Jennifer***. 2024. Integrating restoration and sustainable agriculture for improved soil, pollinator health and wildlife habitat. 8th Global Botanic Garden Congress, Singapore.

Neale, Jennifer*, Alba, Christina, Hufft, Rebecca A. and Douglas, Phillip. 2024. Connecting people to nature in the urban matrix | Denver Botanic Gardens. 8th Global Botanic Garden Congress, Singapore.

Low, Joshua, Murray, Rachel V., **Neale, Jennifer***, States, Sarah. 2024. Don't be afraid to talk to the public about climate change: Audience research and Case studies from public gardens. American Public Gardens Association. Boston, MA.

Bird, Erin, **Neale, Jennifer***, DeWolfe, Joe, Henson, Venice, LaVire, Alicia and Westwood, Murphy. 2024. Science meets marketing: internal communication for successful external communication. American Public Gardens Association. Boston, MA.

Neale, Jennifer* and Seglias, Alex. 2024. Small seeds inform continental collaboration. NatureServe Biodiversity Without Boundaries. Seattle, WA.

Geyer, Erik, Goebel, April, Hufft, Rebecca, **Neale, Jennifer** and Vickerman, Larry. 2024. Symposium: Integrating restoration and sustainable agriculture for improved soil health and wildlife habitat. National Conference on Ecological Restoration. Albuquerque, NM. Symposium Moderator.

Hufft, Rebecca A., Vickerman, Larry, **Neale, Jennifer**, Geyer Erik. 2023. Bringing together restoration and sustainable agriculture practices for improvements in soil health, biodiversity, and wildlife habitat. Society for Ecological Restoration, Darwin, Australia.

Neale, Jennifer*, Hufft, Rebecca A., Goebel, April, Vickerman, Larry. 2022. Environmental stewardship through riparian and meadow restoration. 7th Global Botanic Garden Congress, Melbourne, Australia.

Neale, Jennifer*, Ripley, Nicola, Griffoul, Emily, Kintgen, Mike. 2022. Conserving the North American alpine: from tiny seeds to big collaborations. 7th Global Botanic Garden Congress, Melbourne, Australia.

TRAINING, ADVISING AND MENTORING

Manage a staff of 13 as Director of Research & Conservation at Denver Botanic Gardens. Provide guidance and support for a total of 20 - 30 departmental staff including graduate students, seasonal staff and interns.

I served as the primary graduate advisor for University of Colorado Denver Masters graduate Emily Orr through the Department of Integrative Biology. Graduation 2023 spring.

Co-advised PhD student at University of Denver working on seleniferous *Astragalus* and population genetics. Served on thesis committee for eight Masters Students at various Colorado universities. – committee member.

PROFESSIONAL SERVICE

April 2024 – May 2025	University of Colorado Colorado Springs, Women in leadership executive training program advisor
April 2024	Conference on World Affairs Panel Moderator: All's whale that ends whale: conserving our wildlife heritage, University of Colorado, Boulder, CO.
June 2023 – 2025	American Public Garden Association Plant Conservation Community Chair and Program Selection Committee
2023 – Present	Botanic Gardens Conservation International US Board Member
June 2021 – June 2023	American Public Garden Association Plant Conservation Community, Vice Chair
Fall 2016-Fall 2018	Colorado Pollinator Network, Steering Committee Member
Fall 2007 – Present	Colorado Native Plant Society, Research Grants Committee
Fall 2007-2017	Colorado Native Plant Society, Board Member at Large
Fall 2010 – 2015	Metro Denver Urban Advantage, Scientific Advisor
2000 – Present	Member Botanical Society of America
2000 – Present	Member Society for Ecological Restoration

AWARDS RECEIVED

2022 Colorado Department of Transportation	Environmental Award: Innovative environmental process
2020 Center for Plant Conservation	Star Award
2015 Ecological Society of America	Sustaining Biological Infrastructure, Strategies for Success certificate
2012 US Fish & Wildlife Service	Partners in Mission Recovery Champion Award. As part of the Rare Plant Conservation Initiative

REVIEWER

American Fern Journal, Australian Journal of Botany, Biodiversity and Conservation, Botany, Conservation Biology, Conservation Genetics, Functional Ecology, Genetica, International Journal of Plant Biology, Institute of Museum and Library Services National Leadership and Museums for America grant reviewer, National Science Foundation grant reviewer, Natural Areas Journal, Trends in Plant Science, Society for Conservation Biology Smith Fellows Program Reviewer.