

ANNA BEHM MILLER, PH.D.

anna.miller@usu.edu

Logan, UT 84341

EDUCATION

Ph.D. Parks, Recreation, and Tourism Management 2016

North Carolina State University, College of Natural Resources

Dissertation: Impacts of trail building on wildlife: A before-after control-impact experimental study using camera traps

Committee: Dr. Yu-Fai Leung (chair); Dr. Roland Kays, Dr. Myron Floyd, Dr. Roger Moore

Graduate Certificate in Geospatial Information Science

M.S. Applied Ecology 2010

University of Poitiers, France

University of East Anglia, UK

University of Kiel, Germany

Thesis: Artisanal fisheries survey and artificial reef impact assessment: Gulf of Lion, France

Advisor: Dr. Philippe Lenfant

B.S. Biology 2006

University of North Carolina at Chapel Hill

Lund University, Sweden: *Trans-Atlantic Science Student Exchange Program in Ecology* 2005

PROFESSIONAL APPOINTMENTS

Assistant Professor of Recreation Resources Management and the Environment

Department of Environment and Society, Utah State University

Affiliate Faculty: Institute of Outdoor Recreation and Tourism; Ecology Center; Climate Adaptation Science Program

August 2022 – Present

Assistant Director of Research and Operations, Institute of Outdoor Recreation and Tourism

Department of Environment and Society, Utah State University

January 2020 – July 2022

Post-Doctoral Research Fellow, ORISE

USDA Forest Service, Pacific Northwest Research Station, Seattle, WA

October 2017 – November 2020

Resident Lecturer

The School for Field Studies, Turks and Caicos Islands

August 2016 – July 2017

PUBLICATIONS AND PRESENTATIONS

PEER-REVIEWED JOURNAL ARTICLES

**Indicates student author*

Corkery*, G., **Miller, A.B.**, Rogers, P.C. (2024). Quaking Aspen in a High-Use Recreation Area: Challenges of People, Ungulates, and Sodium on Landscape Resilience. *Land*. 13: 1003. <https://doi.org/10.3390/land13071003>

Meyer*, C., Freimund, W., Miller, Z., **Miller, A.B.**, Wimpey, J., Taff, B.D. (2024) Examining Opportunities for Solitude or Unconfined Recreation in a Colorado Plateau Wilderness Setting: A Case Study from the Canyons of the Escalante. *International Journal of Wilderness*. 30(1): 66-80.

- Chen, C., **Miller, A.B.**, Burton, A.C. (40 authors). (2024). Combining camera trap surveys and IUCN range maps to improve knowledge of species distributions. *Conservation Biology*. <https://doi.org/10.1111/cobi.14221>
- Miller, A.B.**, Cox, C., Morse, W.C. (2023). Ecotourism, wildlife conservation, and agriculture in Costa Rica through a social-ecological systems lens. *Frontiers in Sustainable Tourism*. 2: 1179887. <https://doi.org/10.3389/frsut.2023.1179887>
- Beeco, J.A., Wilkins, E.J., **Miller, A.B.**, Lamborn, C.C., Anderson, S.J., Miller, Z.D., Smith, J.W. (2023). Support for management actions to protect night sky quality: Insights from visitors to state and national park units in the U.S. *Journal of Environmental Management*. 345: 118878. <https://doi.org/10.1016/j.jenvman.2023.118878>
- Smith, J.W., Yang, E., **Miller, A.B.** (2023). An evaluation of potential locations for the Bears Ears National Monument cultural center. *Journal of Outdoor Recreation and Tourism*. 43: 100645. <https://doi.org/10.1016/j.jort.2023.100645>
- Miller, A.B.**, Blahna, D.J., Morse, W., Leung, Y.-F., Rowland, M.R. (2022). From recreation ecology to a recreation ecosystem: A framework accounting for social-ecological systems. *Journal of Outdoor Recreation and Tourism*. <https://doi.org/10.1016/j.jort.2021.100455>
- Miller, A.B.**, Winter, P.L., Sanchez, J.J., Peterson, D.L., Smith, J.W. (2022). Climate change and recreation in the western United States: Effects and opportunities for adaptation. *Journal of Forestry*. <https://doi.org/10.1093/jofore/fvab072>
- Cervený, L.K., Derrien, M.D., Meyer*, C., **Miller, A.B.** (2022). Four dimensions of sustainable governance for National Scenic Trails. *Journal of Outdoor Recreation and Tourism*. 39: 100518. <https://doi.org/10.1016/j.jort.2022.100518>
- Chen, C., Brodie, J.F., Kays, R., ...**Miller, A.B.**, ...Burton, C. (2022). Global camera trap synthesis highlights the importance of protected areas in maintaining mammal diversity. *Conservation Letters*. 15:e12865. <https://doi.org/10.1111/conl.12865>
- Cervený, L.K., Derrien, M.D., **Miller, A.B.**, Meyer*, C. (2022). Partnership and community engagement models for stewarding U.S. National Scenic Trails: A social-ecological systems perspective. *Tourism Planning and Development*. DOI: 10.1080/21568316.2021.1987314
- Wilkins*, E.J., Chikamoto, Y., **Miller, A.B.**, Smith, J.W. (2021). Climate change and the demand for recreational ecosystem services on public lands in the continental United States. *Global Environmental Change*. 70: 102365.
- Smith, J.W., **Miller, A.B.**, Lamborn*, C.C., Spornbauer*, B.S., Creany*, N., Richards*, J.C., Meyer*, C., Nesbitt*, J., Rempel*, W., Wilkins*, E.J., Miller, Z.D., Freimund, W., Monz, C. (2021). Motivations and spatial behavior of OHV recreationists: A case-study from central Utah (USA). *Journal of Outdoor Recreation and Tourism*. 36: 100426.
- Wesstrom*, S.T., Creany*, N., Monz, C., **Miller, A.B.**, D'Antonio, A. (2021). The effect of a vehicle diversion traffic management strategy on spatio-temporal park use: A study in Rocky Mountain National Park, Colorado, USA. *Journal of Park and Recreation Administration*. <https://doi.org/10.18666/JPra-2021-10746>
- Smith, J.W., Wilkins*, E.J., & **Miller, A.B.** (2020). Bears Ears National Monument and Outdoor Recreation in San Juan County, Utah. *Society & Natural Resources*. 34(7): 966-979. <https://doi.org/10.1080/08941920.2021.1907867>

Cervený, L.K., Derrien, M.M., **Miller, A.B.** (2020). Shared stewardship and National Scenic Trails: Building on a legacy of partnerships. *International Journal of Wilderness*. 26(2): 18-33.

Miller, A.B., Kays, R., Leung, Y-F. (2020). Wildlife response to trail building: An experimental method and Appalachian case study. *Journal for Nature Conservation*. 56: 125815. <https://doi.org/10.1016/j.jnc.2020.125815>

Miller, A.B., Cervený, L.K., Derrien, M.M., Selin, S., Blahna, D.J. (2020). A research strategy to ignite the science of outdoor recreation on public lands. *Journal of Park and Recreation Administration*. doi.org/10.18666/JPRA-2019-10049.

Cervený, L.K., **Miller, A.B.**, Gende, S. (2020). Sustainable Cruise Tourism in Marine World Heritage Sites. *Sustainability*. 12:611.

Miller, A.B., Leung, Y.-F., Kays, R. (2017). Coupling visitor and wildlife monitoring in protected areas using camera traps. *Journal of Outdoor Recreation and Tourism*. 17:44-53.

Leung, Y.-F., Walden-Schreiner, C., Conlon, K., **Miller, A.B.** (2015). A Simple Method for Monitoring Dog Leash Compliance Behavior in Parks and Natural Areas. *Journal of Outdoor Recreation and Tourism*, 9:11-16.

Smith, J.W., Leung, Y-F, Seekamp, E., Walden-Schreiner, C., **Miller, A.B.** (2015). Projected impacts to the production of outdoor recreation opportunities across US state park systems due to the adoption of a domestic climate change mitigation policy. *Environmental Science & Policy*, 48:77-88.

Miller, A.B., Leung, Y-F., & Lu, D. (2012). Community-based monitoring of tourism resources as a tool for supporting the Convention on Biological Diversity targets: A preliminary global assessment. *PARKS*, 18.2:120–131.

PEER-REVIEWED JOURNAL ARTICLES IN PREPARATION

Wheeler, I., Freimund, W., **Miller, A.**, Monz, C. (resubmitted). Impact of a Responsible Recreation Trail Ambassador Program on Visitor Experiences and Pro-Environmental Behavioral Intentions. *Journal of Interpretation Research*.

Miller, A.B., Blye, C.J., Miller, L., Newton, J., Richards*, J. (revising to resubmit). Who carries bear spray? Bear Safety Communication the Greater Yellowstone Ecosystem.

Wheeler, I., Freimund, W., **Miller, A.B.** (in review). A social-ecological systems approach to analyzing the effects of disruptions to the outdoor recreation system in Grand County, Utah.

Miller, A.B., Nguyen, H., Peltier, T., Arthur, L. (in preparation). Understanding youth perspectives on recreation-wildlife interactions through interdisciplinary curriculum.

Corkery, G., **Miller, A.B.**, Ulrich-Schad, J., Rogers, P. (in preparation). Place identity and perceptions of a declining quaking aspen population: drivers of support for management action.

BOOK CHAPTERS

Cervený, L., **Miller, A.B.** (2019). Public lands, protected areas and tourism: Management challenges and information needs. In: McCool, S.F., Bosak, K. (Eds.), *Information Needs and Research Questions for Enhancing Sustainable Tourism as a Development Goal*. Edward Elgar Publishing.

BRIEFING PAPERS

Smith, J.W., & **Miller, A.B.** (2020). The State of Outdoor Recreation in Utah. Logan, UT: Institute of Outdoor Recreation and Tourism, Utah State University. https://digitalcommons.usu.edu/extension_curall/2153/

Smith, J.W., Wilkins, E.J., & **Miller, A.B.** (2020). Bears Ears and Outdoor Recreation in San Juan County, Utah: The Impact of Bears Ears National Monument on Outdoor Recreation and Industries Related to Outdoor Recreation in San Juan County, Utah. Logan, UT: Institute of Outdoor Recreation and Tourism, Utah State University.
https://digitalcommons.usu.edu/extension_curall/2129/

TECHNICAL REPORTS AND CHAPTERS IN TECHNICAL REPORTS

Miller, A.B., Robinson, T., Edwards, P.B. (2024). Outdoor Recreation Vulnerability and Adaptation to Climate Change in Coastal Oregon. In: Halofsky, Jessica E.; Peterson, David L.; Gravenmier, Rebecca A., eds. In prep. Climate Change Vulnerability and Adaptation in Coastal Oregon. Gen. Tech. Rep. PNW-GTR-1024. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Wheeler, I., **Miller, A.B.**, Freimund, W. (2023). Recreate Responsibly: Visitor trail use behavior GPS track analysis. Report prepared for the Grand County, Utah Office of Economic Development.

Wheeler, I., **Miller, A.B.**, Freimund, W., Carlson, M., Jacobs, A. (2023). Recreate Responsibly: Grant County Trail Ambassador program evaluation; Visitor education and behavior. Report prepared for the Grand County, Utah Office of Economic Development.

Jacobs, A., Freimund, W., **Miller, A.B.**, Wheeler, I. (2023). Utahraport State Park: 2022-2023 Visitor Experience Survey Results. Report prepared for the Grand County, Utah Office of Economic Development.

Miller, A.B., Freimund, W., Wheeler, I., Jacobs, A., Bruck, J. (2023). Lessons learned from a collection of visitor management studies occurring in the Moab, Utah area. (Series of nine factsheets and a synthesis prepared for the Grand County, Utah Office of Economic Development.

Smith, J.W., Miller, Z.D., **Miller, A.B.**, Lamborn, C.C., Beeco, A., Anderson, S. (2023). Characteristics, management preferences, and spending profiles of night sky recreationists in Utah. Logan, UT: Institute of Outdoor Recreation and Tourism, Utah State University.

Miller, A.B., Peterson, D.L., Hand, M., Haukness, L., Peterson, M. (2022). Effects of climate change on outdoor recreation. In: Halofsky, J.E. and D.L. Peterson, eds. Climate change vulnerability and adaptation in the Columbia River Gorge National Scenic Area, Mount Hood National Forest, and Willamette National Forest. General Technical Report PNW-GTR-1001. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Graham, R., **Miller, A.**, & Monz, C. (2021). Post-Experience Survey of Backcountry Anglers and Hikers in Rocky Mountain National Park. All Graduate Plan B and other Reports. 1569. <https://digitalcommons.usu.edu/gradreports/1569>

Miller, A.B., King, D., Rowland, M., Chapman, J., Tomosy, M., Liang, C., Abelson, E.S., Truex, R. (2020). Sustaining wildlife with recreation on public lands: A synthesis of research findings, management practices, and research needs. Gen. Tech. Rep. PNW-GTR-993. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

***Finalist for The Wildlife Society's annual award for Monographs, 2020.**

Miller, A.B., Larson, L., Wimpey, J., Reigner, N. (2020). Outdoor recreation and environmental stewardship: The sustainable symbiosis. In: Selin, S.; Cervený, L.K.; Blahna, D.J.; Miller, A.B., eds. Igniting research for outdoor

recreation: linking science, policy, and action. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: pp. 227–244. Chapter 16.

Helmer, M., **Miller, A.B.**, Barborak, J.R., McCool, S.F., Leung, Y.-F. (2020). Global Dimensions: Trends, lessons and collaborative learning. In: Selin, S.; Cervený, L.K.; Blahna, D.J.; Miller, A.B., eds. Igniting research for outdoor recreation: linking science, policy, and action. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Blahna, D., Kline, J.D., Williams, D.R., Rogers, K., **Miller, A.B.**, McCool, S., Valenzuela, F. (2020). Integrating social, ecological, and economic factors in sustainable recreation planning and decision making. In: Selin, S.; Cervený, L.K.; Blahna, D.J.; Miller, A.B., eds. Igniting research for outdoor recreation: linking science, policy, and action. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Cervený, L.K.; Derrien, M.M.; **Miller, A.B.** (eds.). (2020). A research strategy for enhancing sustainable recreation and tourism on public lands. Gen. Tech. Rep. PNW-GTR-991. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 102 p.

Selin, S.; Cervený, L.K.; Blahna, D.J.; **Miller, A.B.** (eds.). (2020). Igniting research for outdoor recreation: linking science, policy, and action. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 257 p.

Smith, J.W., **Miller, A.B.**, & Leung, Y.-F. (2020). 2019 Outlook and Analysis Letter: The Vital Statistics of America's State Park Systems. A report prepared for the National Association of State Park Directors. 60 p.
https://digitalcommons.usu.edu/extension_curall/2088/

Miller, A.B. (2018). Community-based natural resource monitoring in Namibia: The Event Book System. In Leung, Y.-F., Spenceley, A., Hvenegaard, G., Buckley, R. (Eds.), *Tourism and Visitor Management in Protected Areas: Guidelines for Sustainability* (pp 144-145). IUCN.

Walden-Schreiner, C., **Miller, A.B.** (2018). Monitoring of visitor use and impact indicators in Yosemite National Park, USA. In Leung, Y.-F., Spenceley, A., Hvenegaard, G., Buckley, R. (Eds.), *Tourism and Visitor Management in Protected Areas: Guidelines for Sustainability* (pp 149-151). IUCN.

Leung, Y.-F., Smith, J., & **Miller, A.** (2016). Statistical Report of State Park Operations: 2014-2015. Final report submitted to National Association of State Park Directors.
As project assistant for the National Association of State Park Directors, I published this report 2012-2016.

Lenfant, P., Neveu, R., **Miller, A.**, Defranoux, H., Bay, G., Gabaud, S., Auger, T., Jarraya, M. (2011). Artisanal fisheries catches: from Leucate to Port Vendres (2008-2010). CEFREM Report for the Marine Protected Area Agency (1/3), 48p. (In French).

Lenfant, P., Neveu, R., **Miller, A.**, Defranoux, H., Bay, G., Gabaud, S., Auger, T., Jarraya, M. (2011). Artisanal fisheries catches: from Leucate to Port Vendres (2008-2010). Map atlas. CEFREM Report for the Marine Protected Area Agency (2/3), 18p. (In French).

Lenfant, P., Neveu, R., **Miller, A.**, Defranoux, H., Bay, G., Gabaud, S., Auger, T., Jarraya, M. (2011). Artisanal fisheries catches: from Leucate to Port Vendres (2008-2010). Fishing gear. CEFREM Report for the Marine Protected Area Agency (3/3), 22p. (In French).

Technical Report Chapters in press/review:

Timberlake, T., **Miller, A.B.** (*in review*). Climate change effects on recreation in the White River National Forest. In: TBD, eds. Climate Change Vulnerability and Adaptation in the White River National Forest. General Technical Report PNW-GTR-XXX. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Miller, A.B., Timberlake, T. (*In review*). Effects of Climate Change on Outdoor Recreation in Medicine Bow-Routt National Forests and Thunder Basin National Grassland. In: TBD, eds. Climate Change Vulnerability and Adaptation in the Medicine Bow and Routt National Forests. General Technical Report PNW-GTR-XXX. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

INVITED TALKS AND PANELS

International Conference on Monitoring and Managing of Visitors in Recreational and Protected Areas. September 2024. Outdoor Recreation in a Transforming World: Top-10 Priorities for Future Sustainable Multifunctionality in Peri-urban Landscapes. Invited panelist.

Sisters Trails Alliance. January 2024. Where's the wildlife? Recreating with wildlife in mind. Invited speaker.

The Wildlife Society of Colorado and Utah. Social-ecological systems for outdoor recreation on public lands. March 2023. Invited plenary speaker for the annual meeting.

Washington Recreate Responsibly Coalition. Recreation Ecology: Introduction and research needs. May 2022. Invited speaker.

University of California – Merced. Climate adaptation for outdoor recreation in the western US. Management of Complex Systems departmental seminar series. March 2022. Invited speaker.

Basecamp Workshop and Conference. Women and Leadership in Outdoor Recreation Research and Management. Hosted by Institute of Outdoor Recreation and Tourism. November 2021. Organizer, Moderator, and Panelist.

Oregon Outdoor Recreation Summit. Plenary: A Changing Landscape: How wildfires and climate change are influencing recreation patterns, and what we can do. Hosted by the Oregon Office of Outdoor Recreation. October 2021. Invited speaker.

Climate Change and Human Impacts on Outdoor Recreation in the Northwest. PNW Outward Bound's Circle Up! Alumni gathering. September 2021. Invited panelist.

Adaptation Planning and Practices for Recreation Course. Hosted by the U.S. Forest Service. April 2021. Invited speaker.

PRESENTATIONS

Miller, A.B., Arthur, L., Stone, M., Corkery, G. (October 2024). Social-Ecological Systems: Opportunities for a Linked Approach to Outdoor Recreation Management. Basecamp Conference and Workshop. Moab, UT.

Miller, A.B., Wheeler, I., Freimund, W., Jacobs, A. (September 2024). Communicating Responsible Recreation: Trail Ambassadors in Moab, Utah, USA. International Conference on Monitoring and Managing of Visitors in Recreational and Protected Areas. Schneverdingen, Germany.

Miller, A.B. (October 2022). The Outdoor Recreation Ecosystem: Wildlife conservation in Costa Rica through a social-ecological systems lens. Pathways Europe 2022: Human Dimensions of Wildlife Conference and Training. Wageningen, Netherlands.

Miller, A.B. (November 2021). A social-ecological systems application for recreation ecology highlighting wildlife. Paper presented at the Basecamp Conference and Workshop. Tucson, AZ.

Miller, A.B., Blahna, D.J., Leung, Y-F., Morse, W., Rowland, M. (August 2021). The recreation ecosystem: A social-ecological systems application for recreation ecology highlighting wildlife. Paper presented at the International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas. Virtual Conference.

- Cervený, L., Wilmer, H., Derrien, M., **Miller, A.** (November 2020). Initial findings: recreation, subsistence, and public uses. Presentation at the *Climate Vulnerability and Adaptation Assessment Workshop: Chugach National Forest*. Virtual Workshop.
- Miller, A.B.**, Robinson, T., Edwards, P. (October 2020). Impacts of Climate Change on Recreation in Coastal Oregon. Paper presented at the *Oregon Coastal Adaptation Partnership Workshop*. Virtual Workshop.
- Miller, A.B.**, Robinson, T., Edwards, P. (October 2020). Impacts of Climate Change on Recreation in Coastal Oregon. Paper presented at the *Oregon Coastal Adaptation Partnership Workshop*. Virtual Workshop.
- Cervený, L.K., Derrien, M.D., **Miller, A.B.** (October 2020). Shared stewardship and National Scenic Trails: Learning from trail partnerships. Paper presented at the *National Wilderness Workshop*. Virtual Conference.
- Cervený, L.K., Derrien, M.M., **Miller, A.B.** (June 2020). National Scenic Trails: Challenges and Opportunities in Shared Stewardship. Paper presented at the *International Symposium for Society and Resource Management*. Virtual Conference.
- Miller, A.**, Selin, S., Cervený, L., Derrien, M. (October 2019). Igniting the science of outdoor recreation (ISOR): Introducing a research agenda and strategy developed through a national assessment and multi-stakeholder process. Paper presented at the *IUFRO World Congress*. Curitiba, Brazil.
- Derrien, M., Cervený, L., & **Miller, A.** (October 2019). A new research strategy for sustainable recreation and tourism. National Extension Tourism's Sustainable Tourism & Outdoor Recreation Conference, Astoria, OR. [invited]
- Cervený, L.C.; **Miller, A.B.** (September 2019). Cruise ship impacts on UNESCO Marine World Heritage Areas. Workshop at the UNESCO Marine World Heritage Managers' Conference. Glacier Bay, Alaska.
- Derrien, M.; Cervený, L.; **Miller, A.** (May 2019). A new strategic agenda to "ignite" the science of outdoor recreation. Paper presented at the *National Outdoor Recreation Conference*. Rapid City, South Dakota.
- Miller, A.B.**, Halofsky, J., Peterson, D., Hand, D., Ho, J., Gravenmier, B., Hoyer, R.W., Peterson, M., Haukness, L., Wade, J., Blanchard, B., Thompson, J. (April 2019). Recreation: Adaptation and Vulnerability to Climate Change. *Columbia River Gorge, Mt. Hood and Willamette Adaptation Partnership Workshop*. Salem, OR.
- Miller, A.**, Cervený, L., Derrien, M., Selin, S. (April 2019). Igniting the Science of Outdoor Recreation: Presenting a Research Strategy and Agenda. Paper presented at the *National Environment and Recreation Research Symposium*. Annapolis, Maryland.
- Selin, S., **Miller, A.**, Cervený, L., Blahna, D., Valenzeula, F. (October 2018). Re-imagining Sustainable Recreation Research: Outcomes from a National Workshop. Paper presented at the *Society of American Foresters*. Portland, Oregon.
- Selin, S., **Miller, A.**, Cervený, L., Helmer, M., Blahna, D., McCool, S., Barborak, J. (August 2018). New directions in sustainable recreation research: Results of a U.S. national assessment and multi-stakeholder workshop. Paper presented at *9th International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas*. Bordeaux, France.
- Miller, A.**, Cervený, L., Helmer, M. (June 2018). Priorities for sustainable recreation research: Results from an international inquiry. Paper presented at *International Symposium for Society and Resource Management*. Snowbird, Utah.
- Miller, A.**, Derrien, M., Cervený, L. (May 2018). The National Recreation Research Needs Assessment: What are the Critical Local Knowledge Gaps? Invited presentation at the *2018 Integrated Planning for and Management of Recreation and Wildlife Resources: Building a Shared Understanding of Obligations, Opportunities, and Challenges*.

- Miller, A.**, Helmer, M., Cervený, L. (April 2018). Outcomes of a national inquiry on sustainable recreation: Management challenges, information needs, and developing a community of practice. *Sustainable Recreation Research Workshop*. Golden, Colorado.
- Leung, Y-F., **Miller, A.**, Walden-Schreiner, C., Smith, J., Ledford, L. (June 2017). Long-term monitoring of state park operations in the U.S. Poster presented at *International Symposium on Society and Resource Management*. Umeå, Sweden.
- Leung, Y-F., Walden-Schreiner, C., **Miller, A.**, Burroughs, K., Hastings, C. (April 2017). Exploring new methods and technologies in trail use and impact monitoring for protected areas. Presentation at *George Wright Society Conference*, Norfolk, Virginia.
- Miller, A.** (March 2017). Enhancing the sustainability of recreation and tourism in protected areas: A research agenda. Invited research presentation delivered at University of British Columbia, Canada.
- Miller, A.**, Kays, R., Leung, Y-F. (August 2016). Evaluating the impacts of trail building on wildlife: A before-after control-impact experiment using camera traps. Presentation at the *Ecological Society of America Annual Meeting*. Fort Lauderdale, Florida.
- Miller, A.**, Leung, Y-F., Kays, R. (June 2015). Assessing the Impacts of Trail Building on Wildlife: A Before-During-After Control-Impact Experimental Design Using Camera Traps. Presentation at *International Symposium on Society and Research Management*. Charleston, South Carolina.
- Miller, A.**, Leung, Y-F., Kays, R. (June 2015). Long-term visitor use monitoring: Using camera traps to quantify trail activity. Poster presented at *International Symposium on Society and Research Management*. Charleston, South Carolina.
- Tsai, W.-L., Shedd, J., Smith, C., **Miller, A.**, Walden-Schreiner, C., Leung, Y.-F., Smith, J. (October 2014). ArcGIS online and collector for ArcGIS mobile app. Workshop at the *North Carolina Coastal Technology Workshop*. Wilmington, North Carolina.
- Miller, A.**, Leung, Y-F. (October 2014). Designing sustainable recreational trails for wildlife: GIS analysis of physical and biotic factors. Paper presented at *Pathways: Integrating Human Dimensions into Fisheries and Wildlife Management*. Estes Park, Colorado.
- Miller, A.**, Leung, Y-F. (June 2014). Don't feed the animals: Monitoring recreation impacts on wildlife with camera traps. Paper presented at *International Symposium for Society and Resource Management*. Hannover, Germany.
- Leung, Y-F, Magro, T., Moreira, J., **Miller, A.** (co-organizer). (April 2013). Monitoring Visitor Impacts in Protected areas: A collaborative learning workshop. Workshop at the *IUFRO Protected Areas and Place Making Conference*. Foz do Iguaçu, Brazil.
- Miller, A.**, Leung, Y-F. (March 2013). The role of state parks in providing recreation opportunities: Visitation trends in difficult economic times. Poster presented at the *George Wright Society Conference*. Denver, Colorado.
- Leung, Y-F, Magro, T., Moreira, J., Putnam, J., McCool, S., **Miller, A.** (co-organizer). (March 2013). Developing a Collaborative Learning Network for Visitor Impact Monitoring in Protected Areas: A USA-Brazil Panel. Panel discussion at the *George Wright Society Conference*. Denver, Colorado.
- Conlon, K., Walden-Schreiner, C., Leung, Y-F, **Miller, A.** (February 2013). Monitoring Off-leash Dog Walking Behavior in Protected Areas: Development and Testing of a Protocol. Presentation at the *Southeast Recreational Research Conference*. Athens, Georgia.

Leung, Y.-F., Walden-Schreiner, C., Conlon, K., **Miller, A.** (January 2013). Enhancing visitor impact management and stewardship education at NC coastal reserves through participatory monitoring: Project updates. Presentation at the *Managing Recreational Use of Publicly Accessible Protected Lands Workshop*. Beaufort, North Carolina.

Leung, Y.-F., **Miller, A.**, Smith, C., Walden-Schreiner, C., Conlon, K. (November 2012). Citizen Monitoring of Park Use and Impacts: Exploring Options. Presentation at the *North Carolina Parks and Recreation Association Conference*, Greenville, North Carolina.

Walden-Schreiner, C., Leung, Y.-F., **Miller, A.** August, 2012. Integrating geospatial technology with behavior mapping in monitoring visitor use in open landscapes. Presentation at the *6th International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas*. Stockholm, Sweden.

Miller, A., Leung, Y.-F. August 2012. Community-based monitoring of tourism resources in protected areas: Typology of programs and preliminary review. Poster presented at the *Public Participation in Scientific Research Conference*. Portland, Oregon.

Miller, A., Lenfant, P., Neveu, R. (March 2012). Artificial Reefs May Benefit Artisanal Fisheries: Impact Assessment in Languedoc-Roussillon, France. Poster presented at the *7th Annual NC State University Graduate Student Research Symposium*. Raleigh, North Carolina

Miller, A., Matisoff, C., McFadden, K., LaGuardia, C., Leung, Y.-F. (February 2012). Towards Development of a Sustainable Recreation Strategy for University Forests: A Southeastern U.S. Example. Poster presented at the *34th Annual Southeastern Recreation Research Conference*. Auburn, Alabama.

Leung, Y.-F., **Miller, A.**, Walden-Schreiner, C., Siderelis, C. (February 2012). A Long-term State Park Operations Database for Academic Research: Examples and Suggestions. Poster presented at the *34th Annual Southeastern Recreation Research Conference*. Auburn, Alabama.

Leung, Y.-F., Walden-Schreiner, C., **Miller, A.**, Smith, C., Tsai, W.-L. (January 2012). A Geospatial Approach to Monitoring Recreational Use and Impacts in Open Landscapes: Applications for Managers and Community Volunteers. Presented at the *Managing Recreational Use of Publicly Accessible Protected Lands Workshop*. Beaufort, North Carolina.

RESEARCH FUNDING

Figure 1. Total Research funding awarded, 2021 through present (summative)

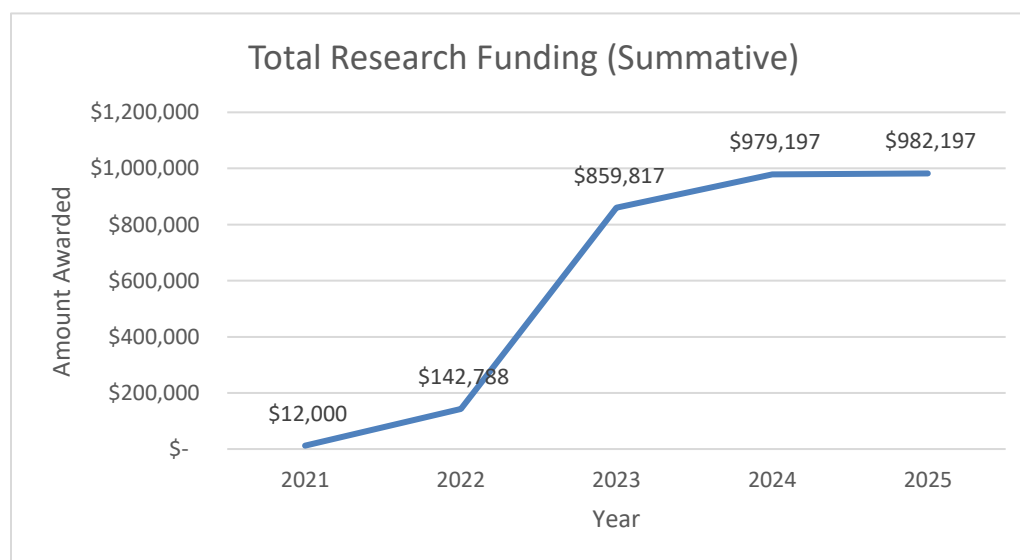


Table 1. Detailed Accounts for Funding Received

Funding agency: Project Title	Amount	Year	Role
Berryman Institute (USU): A Social-Ecological Systems Approach to Understanding Black Bear Management in Michigan	\$3,000	2025	PI
USU Public Lands Initiative: Understanding Recreation in Utah's Wildlife Management Areas to Inform Management	\$59,690	2024	PI
Michigan Department of Natural Resources: Managing the Socio-Ecological System for Human-Black Bear Interactions in the Northern Lower Peninsula	\$648,829	2023	PI
Utah Agricultural Experiment Station: Utah Climate Window - Climate Data for Climate Adaptation	\$48,200	2023	Co-PI
USU Research Catalyst: DataScape - Developing Data Literacy in Upper Elementary Grades	\$20,000	2023	Co-PI
Grand County, UT: Trail Ambassador Evaluation and Visitor Management	\$50,000	2023	PI
Snyderville Basin Special Recreation District: Coupling forest conditions and human interactions to inform the management of an ailing aspen community	\$80,788	2022	Co-PI
National Park Service Cooperative Research and Training Program: Wildlife-Human Incident and Communication Analysis on Federal Public Lands	\$12,825	2021	PI
USU Public Lands Initiative: Tourism in Grand County and Moab, Utah	\$39,206	2021	Co-PI
Central Wasatch Commission: Visitor Use Study, Phases 1 and 2	\$246,906	2020	Co-PI
USU Public Lands Initiative: The Economic Impacts & Visitor Experiences of Utah's Night Skies	\$59,953	2020	Co-PI
USDA Forest Service: Climate Change Vulnerability & Adaptation, Outdoor Recreation	\$45,000	2018	PI
USDA Forest Service: Sustaining Wildlife and Recreation on Public Lands	\$50,000	2018	PI
USDA Forest Service: Igniting the Science of Outdoor Recreation	\$90,000	2017	Co-PI
The School for Field Studies: Characterization of tourism on three niche islands in the Turks and Caicos	\$3,000	2016	PI
Funding in progress:			
UDWR: Recreation and wildlife interactions in Wildlife Management Areas			

TEACHING EXPERIENCE**Utah State University**

Social-Ecological Systems Theory and Applications	2024
Climate Adaptation Science Graduate Studio	2022-2024
Fundamentals of Natural Resource Recreation Management	2020-2024

The School for Field Studies, Turks and Caicos Islands (TCI)

Environmental Policy and Socioeconomic Factors*	2016 - 2017
Directed Research*	2016 - 2017
Tropical Marine Ecosystems: Monitoring and Management	2017

**Led students on class and research trips across four islands of the TCI archipelago.*

North Carolina State University

Analysis and Evaluation in Parks and Recreation (Instructor of Record)	2013
Outdoor Recreation Consortium (co-led with Dr. Roger Moore)	2015

Guest Lectures

Climate Adaptation Science Colloquium, Utah State University	2024
Topic: Co-production and Outdoor Recreation in Climate Adaptation Science	
Environmental Risks and Decision Making, Utah State University	2022, 2023
Topic: Outdoor recreation adaptation to climate change: Risk and communication	
Living with Wildlife, Utah State University	2020
Topic: Wildlife Response to Outdoor Recreation	

Recreation Ecology, University of Sao Paolo - Piracicaba	2020
Topic: Methods for using camera traps to quantify human-wildlife interactions	
Master in Environmental Management, Western Colorado University	2018
Topic: Methods for using camera traps to quantify human-wildlife interactions	
Forest Economics and Policy, University of British Columbia	2017
Topic: Outdoor Recreation and Tourism: Valuing and Managing Protected Areas	
Outdoor Recreation Management, North Carolina State University (NCSU)	2016
Topic: Science-based protected area management: Frameworks and data collection methods	
Parks, Recreation and Tourism Management Senior Seminar, NCSU	2016
Topic: So you think you want to go to grad school?	
Internship Orientation in Parks, Recreation, Tourism, and Sport Management, NCSU	2016
Topic: Interview preparation	
Principles of Recreation Planning and Facility Development, NCSU	2014
Topic: Introduction to Recreation Planning and Facility Development	
Teaching Assistantships; North Carolina State University	
GIS & Spatial Analysis in Parks, Recreation, Tourism, and Sport Management	2014, 2016
Data Management and Applications in Parks, Recreation, and Tourism Management	2016
Internship Orientation in Parks, Recreation, Tourism, and Sport Management	2016
Conceptual Foundations in Parks, Recreation, Tourism, and Sport	2015
Risk Management for Parks, Recreation, Tourism and Sport Organizations	2014
Principles of Recreation Planning and Facility Development	2014
Active Recreation and Community Health	2014
Strategic Marketing Management in Parks, Recreation, Tourism, and Sport	2014
Pali Outdoor Adventures; Running Springs, California	
Outdoor Educator: Science and Ecology	2008
Orange County Outdoor Science School, San Bernardino National Forest, California	
Instructor: Ecology and Wildlife Biology	2007

Table 2. Graduate and Undergraduate Student Mentoring

Student Name	Role	Degree	Status	Date degree started	Date degree completed (*projected)	Committee chair(s)
Georgie Corkery	Co-chair	MS	Graduated	August 2022	May 2024	Anna Miller & Paul Rogers
Andrea Jacobs	Co-chair	MS	In progress	January 2022	May 2025*	Anna Miller & Wayne Freimund
Lane Arthur	Chair	MS	In progress	August 2023	May 2025*	Anna Miller
Taylor Peltier	Chair	PhD	In progress	January 2024	Dec 2027*	Anna Miller
Megan Stone	Chair	MS	In progress	August 2024	May 2026*	Anna Miller
Krystyna Dillard-Crawford	Chair	MNR	In progress	August 2021	TBD	Anna Miller & Jordan Smith
Emily Wilkins	Member	PhD	Graduated	August 2017	August 2020	Jordan Smith
Iree Wheeler	Member	PhD	Graduated	January 2021	May 2024	Wayne Freimund
Trisha Hedin	Member	PhD	Graduated	August 2018	May 2024	Mark Brunson
Caleb Meyer	Member	MS	Graduated	August 2020	May 2022	Jordan Smith
Jessica Bruck	Member	MS	In progress	August 2023	May 2025*	Chris Monz
Chandra Man Rai	Member	PhD	In progress	August 2023	May 2027*	Yong Zhao
Sara Fischer	Member	MS	In progress	January 2024	Dec 2025*	Julie Young
Jared Young	Member	MS	In progress	August 2024	May 2026*	Peter Howe
McKenna	Mentor	BS	Complete	Undergrad Research Spring 2023	N/A	
Ashley Starr	Mentor	BS	In progress	URG: Spring 2025	N/A	
General: Recreation Resource Management Major Faculty Advisor, August 2022 through present						
Mentored/advised approximately 20 students individually during this time						

PROFESSIONAL SOCIETY MEMBERSHIPS

International Union for the Conservation of Nature; World Commission on Protected Areas
 The Wildlife Society
 Ecological Society of America
 International Association for Society and Resource Management (IASNR)

MEDIA CONTRIBUTIONS & PUBLIC COMMUNICATIONS

The following are public communications such as news articles and podcasts written by journalists featuring my work.

Good Housekeeping. Bethany Brookshire. *Forthcoming*. I interviewed for a forthcoming article on the topic of human interactions with black bears in the face of climate change. Interview date: January 27, 2025.

Sierra: The Magazine of the Sierra Club. Alison Harford. June 6, 2024. Climate-Change-Intensified Summer Heat is Already Impacting Outdoor Recreation. <https://www.sierraclub.org/sierra/climate-change-intensified-summer-heat-already-impacting-outdoor-recreation>

I interviewed to contribute toward this article on May 29, 2024.

Western Confluence. Molly Caldwell. October 31, 2023. The Outdoor Recreation Ecosystem: How accounting for human behavior can improve wildlife management.

I interviewed to contribute toward this article on social-ecological systems for recreation and wildlife, on March 15, 2023.

Outrider. Emma Penrod. February 13, 2023. How Many Ski Seasons Do We Have Left? <https://outrider.org/climate-change/articles/how-many-ski-seasons-do-we-have-left>

I interviewed to contribute to this article on November 17, 2022.

High Country News. Kylie Mohr. August 1, 2023. 'We have fire all around us and we can't get out'

<https://www.hcn.org/issues/55.8/north-wildfire-we-have-fire-all-around-us-and-we-cant-get-out-hikers>

I interviewed to contribute toward this longer-term article on October 6, 2022.

UnDisciplined podcast. Ellis Juhlin. April 7, 2022. This impact framework could help us stop wrecking our recreation.

<https://www.upr.org/show/undisciplined/2022-04-07/undisciplined-this-impact-framework-could-help-us-stop-wrecking-our-recreation>

Utah State Today. Lael Gilbert. March 8, 2022. Change of Scenery: New Research Outlines How Recreation Will Shift with Climate Change in the West. <https://www.usu.edu/today/story/change-of-scenery-new-research-outlines-how-recreation-will-shift-with-climate-change-in-the-west>

E&E News Climatewire. Daniel Cusick. March 4, 2022. Outdoor lovers may adapt to warming with their feet — study.

LANGUAGES

English – native
 French – working proficiency
 German – working proficiency
 Portuguese – intermediate