



# COLORADO

## Parks and Wildlife

Department of Natural Resources

To: Colorado Parks and Wildlife Commission

From: Mike Quartuch, Ph.D., Human Dimensions Specialist/Researcher IV and Katie Wilson, M.S., Human Dimensions Specialist/Researcher III, Policy and Planning

Date: March 13-14, 2024

Re: Highlights from CPW's Social Science Research Program

### Background

Colorado Parks and Wildlife's Human Dimensions Research Program (HDRP) is comprised of two staff members, Dr. Michael Quartuch (Social Science Researcher IV) and Katie Wilson (Social Science Researcher III) both of whom are part of the Policy and Planning Branch. The work of the HDRP helps ensure the agency is meeting its public trust responsibilities, mission and is addressing critical social science needs across both parks and wildlife programs. Broadly, the HDRP provides internal support to CPW staff, the Parks and Wildlife Commission, and members of the public in the areas of conservation social science (theory, methodology, and application), stakeholder engagement, and public involvement. The majority of the team's work spans the following five categories:

1. Conservation social science research
2. Collaboration and partnership building
3. Subject matter expertise
4. Internal capacity building
5. Involvement and leadership at regional, national, and at international-levels

The purpose of this memo is to illustrate the breadth of work that is addressed within the HDRP and to highlight specific on-going projects and deliverables. Example projects are organized into the five categories listed above and represent current social science inquiries (i.e., 2023-2024). Additionally, we included a list of HDRP publications and presentations below.



## *[1] Conservation social science research*

### Wildlife

- Wolf reintroduction: Qualitative analysis of
  - interviews with Stakeholder Advisory Group (SAG) member's pre- and post-public involvement process exploring procedural criteria and social outcomes of the stakeholder engagement and public involvement process.
  - stakeholders' perspectives about procedural criteria and social outcomes related to the pre- and post-SAG public involvement process.
    - Collaborative studies with CSU faculty/researchers, Dr. Rebecca Niemiec & Dr. Mireille Gonzalez
- Wolf management: Examination of wolf history, biology, and social science/policy in Colorado
  - Manuscript collaboration with CPW wolf researcher, Dr. Ellen Brandell

### Outdoor recreation

- Latino and BIPOC angler motivations/constraints: Examining Latino and BIPOC anglers' psychological motivations, constraints, and constraint negotiations.
  - Collaborative studies with CSU faculty, Dr. Anna Lavoie
- Chronic wasting disease management: Exploring hunters' and Tribal members' perspectives about CWD management
  - Collaborative study with United States Geological Survey social scientists, Dr. Nicholas Cole
- Statewide Comprehensive Outdoor Recreation Plan (SCORP): Three separate inquiries: (1) Statewide public survey of outdoor recreation participation, (2) Statewide survey of land managers to identify priority areas, challenges, and solutions, and (3) Diversity, equity, and inclusion in the outdoors
  - Collaborative study (#s 1 and 3) with CSU faculty, Dr. Brett Bruyere and Dr. Tara Teel

## *[2] Collaboration and Partnership Building*

### *State agency partners/projects*

- Association of Fish and Wildlife Agencies (AFWA): National survey of conservation social scientists (conducted by the Social Science Subcommittee)
- Western Association of Fish and Wildlife Agencies (WAFWA): White paper about conservation social science best practices, methods, and practical implications

### *Federal partners/projects*

- United States Fish and Wildlife Service (National CWD clearinghouse; several special sessions at AFWA and North American Wildlife and Natural Resources conferences)

- United States Geological Survey (National CWD clearinghouse; content analysis research study of state fish and wildlife agencies' CWD response plans; Tribal/hunter perspectives about CWD management-see above)

#### *Academic partners/projects*

- Currently collaborating with 5 faculty members from CSU's Warner College of Natural Resources on multiple studies (see above)
- Served as a partner-mentor to several Master's students in Conservation Leadership program
- Served on both Master's and Ph.D. student committees

#### *[3] Subject Matter Expertise*

- Big Game Season Structure: Development, implementation, and analysis of survey of public attitudes toward OTC regulation alternatives, 2022 Big Game Attitude survey development and implementation
- Reviewed materials for Eldorado Canyon timed entry vehicle reservation system
- Advised on approaches and best practices for public engagement in East Slope Lion Management Planning process

#### *[4] Internal Capacity Building*

- Frequently work with staff in majority of CPW's sections to assist with specific inquiries and building internal awareness/knowledge about social science
  - Working with biologists on herd management planning public involvement processes and questionnaires (e.g., Lance Carpenter's deer and pronghorn HMPs)

#### *[5] Involvement and leadership at regional, national, and at international-levels*

#### AFWA

- Chair of Social Science Subcommittee (Dr. Quartuch)
- Member of Science and Research Committee (Dr. Quartuch)
- Member of National Survey Technical Working Group (Dr. Quartuch)

#### WAFWA

- Chair of the Human Dimensions Committee (Dr. Quartuch)
- Point of contact (for CPW) to the Diversity, Equity, and Inclusion Committee

#### Academia

- Affiliate Faculty member within the Warner College of Natural Resources (Dr. Quartuch)
- Pathways: Human Dimensions of Wildlife and Natural Resources (international) conference, advisory board member (Dr. Quartuch)

## Recent Publications

### *Peer reviewed manuscripts*

1. von Furstenberg, R., Vayer, V. R., Larson, L. R., Nils Peterson, M., Lee, K. J., Stevenson, K., Ahlers, A. A., Anhalt-Depies, C., Bethke, T., Clark, B., ...**Quartuch, M.**, et al., (2023). Evaluating impacts of R3 workshops for first-time hunters at universities across the United States. *Wildlife Society Bulletin* 47:e1482. <https://doi.org/10.1002/wsb.1482>.
2. Niemiec, R., Gruby, R., **Quartuch, M.**, Cavaliere, C., Teel, T., Crooks, K., Salerno, J., Solomon, J., Jones, K., Gavin, M., Lavoie, A., Stronza, A., Meth, L., Enrici, A., Lanter, K., Browne, C., Proctor, J., Manfredo, M. (2021). Integrating social science into conservation planning. *Biological Conservation*, 262, <https://doi.org/10.1016/j.biocon.2021.109298>.
3. Larson, L. R., Peterson, M. N., von Furstenberg, R., Vayer, V., Lee, K. J., Choi, D., Stevenson, K., Ahlers, A., Anhalt-Depies, C., Bruskotter, J., Chizinki, C., Dayer, A., Ghasemi, B., Gigliotti, L., Graefe, A., Irwin, K., Keith, S., Kelly, M., Kyle, G., Metcalf, E., Morse, W., Needham, M., Poudyal, N., **Quartuch, M.**, Rodriguez, S., Romulo, C., Sharp, R. L., Siemer, W., Springer, M., Stedman, R., Stein, T., van Deelen, T., Whiting, J., Winkler, R., & Woosnam, K. (2021). The future of wildlife conservation funding in the United States (through the eyes of college students). *Conservation Letters*.
4. Vayer, V.R., Larson, L.R., Peterson, M.N., Lee, K.J., von Furstenberg, R., Choi, D., Stevenson, K., Ahlers, A., Anhalt-Depies, C., Bruskotter, J., Chizinki, C., Dayer, A., Ghasemi, B., Gigliotti, L., Graefe, A., Irwin, K., Keith, S., Kelly, M., Kyle, G., Metcalf, E., Morse, W., Needham, M., Poudyal, N., **Quartuch, M.**, Rodriguez, S., Romulo, C., Sharp, R. L., Siemer, W., Springer, M., Stedman, R., Stein, T., van Deelen, T., Whiting, J., Winkler, R., & Woosnam, K. (2021). Diverse university students across the United States reveal promising pathways to hunter recruitment and retention. *Journal of Wildlife Management*. DOI: 10.1002/jwmg.22055.

### *Under Review or In-preparation*

5. Niemiec, R., **Quartuch, M.R.**, Gonzalez, M., & Champine, V. (2024). Social outcomes associated with a public and stakeholder engagement process for wolf reintroduction. *Journal of Environmental Management* (under review).

6. **Quartuch, M.R.**, and Studebaker, S.A. (2023). Differences between resident and non-resident hunters' perceptions about CWD and associated implications: A case study from Colorado. *Human Dimensions of Wildlife* (under review, 2<sup>nd</sup> round).
7. **Quartuch, M.R.**, Gramza, A., Crandall, C., Pomeranz, E., Sexton, N., Forstchen, A., Valdez, R., & Jagnow, C. P. (2024). Are we moving the conservation needle (with social science)? Examining social science integration at state and federal fish and wildlife organizations in the United States. *Conservation Biology* (in-prep, abstract submitted to special issue, April 2024).

### ***Peer Reviewed Reports***

1. **Quartuch, M.R.** & Vornholt, M. (2022). Exploring nuances in Colorado's big game license distribution system: Perspectives from resident and nonresident hunters. Colorado Parks and Wildlife, technical report series No. 61.
2. **Quartuch, M.R.**, Vornholt, M., Dorman, K., & Eckert, M. (2022). Connecting Hunting Access and Chronic Wasting Disease: A Case Study from Northeastern, Colorado. Colorado Parks and Wildlife, technical report series No. 62.
3. Filtz, R., Kurtz, J., & **Quartuch, M.R.**, (2022). Conservation at the intersection: Examining residents' perceptions of and preferences for wildlife, outdoor recreation, and development. Colorado Parks and Wildlife, technical report series No. 60. <https://cpw.state.co.us/Documents/Research/SocialScience/22-CPW-Tech-Report-60-Conservation-Intersection-Eagle-MRQ.pdf>.
4. **Quartuch, M.R.** (2020). Measuring hunters' perceptions about chronic wasting disease (CWD), concerns associated with increasing CWD prevalence, and support for CWD management alternatives. Colorado Parks and Wildlife, technical report series #56. <https://cpw.state.co.us/Documents/Research/SocialScience/Quartuch-CPW-TP-56-Chronic-Wasting-Report-1-11-21-B-Final.pdf>.
5. **Quartuch, M.R.** (2018). Statewide Comprehensive Outdoor Recreation Plan (SCORP) public engagement technical report, statewide public and land managers surveys. Colorado Parks and Wildlife, 2019-2023 Statewide Comprehensive Outdoor Recreation Plan, 2018. Appendix D (D1 and D2) pp 62-104.

### **Presentations**

#### ***Professional presentations/facilitated workshops***

**Quartuch, M.R., & Sexton, N. (2023).** Science and research priorities survey: Results overview. Association of Fish and Wildlife Agencies, Science and Research Committee. September 25, 2023. Calgary, Alberta, Canada (Oral).

**Quartuch, M.R., & Sexton, N. (2023).** Social Science Subcommittee (updates/facilitated session). Association of Fish and Wildlife Agencies, Social Science Subcommittee meeting. September 25, 2023. Calgary, Alberta, Canada (Oral).

**Quartuch, M.R., Yamashita, M., McKenna, J., & Gilles, M. (2023).** Eagle County Community Wildlife Roundtable (survey results). Mayor and Manager's meeting. March, 23, 2023 meeting (Oral, virtual).

**Quartuch, M.R., Sexton, N. (2022).** Social Science Subcommittee (updates/facilitated session). Association of Fish and Wildlife Agencies Social Science Subcommittee meeting. Fort Worth, TX (Oral).

**Quartuch, M.R., Sexton, N. (2022).** Social Science Subcommittee Update. Association of Fish and Wildlife Agencies Science and Research Committee meeting. Fort Worth, TX (Oral).

**Quartuch, M.R., Cole, N., & Jagnow, C. (2022).** Accounting for the Human Dimension in Chronic Wasting Disease Management. Pathways: Human Dimensions of Wildlife and Natural Resource conference. Bremerton, WA (Organized Session, Chair).

**Quartuch, M.R., Cole, N., & Jagnow, C., & Smith, K. (2022).** Chronic Wasting Disease Human Dimensions Research Roundtable Discussion. Pathways: Human Dimensions of Wildlife and Natural Resource conference. Bremerton, WA (Organized Session, Co-Chair).

**Quartuch, M.R. (2022).** Big Game Attitude Survey (preliminary results). Parks and Wildlife Commission meeting, June 1-2, 2022 (Oral).

**Quartuch, M.R. (2022).** AFWA Social Science Subcommittee Meeting (Needs Assessment), May 19, 2022 (co-facilitated workshop).

**Quartuch, M.R. (2021).** Working with Social Scientists. The Wildlife Society Human Dimensions Working Group workshop (Oral).

**Quartuch, M.R. (2021).** AFWA Conservation Social Scientist Survey. Association of Fish and Wildlife Agencies, Human Dimensions Working Group presentation, September 8, 2021. Remote meeting (Oral).

**Quartuch, M.R.** (2021). The importance of stakeholder engagement: Overview and best practices. Parks and Wildlife Commission meeting, January 14, 2021. Remote meeting. (Oral). [https://cpw.state.co.us/Documents/Commission/2021/January/Item.28ppt-presentation\\_01.14.2021\\_PWC-Mike\\_Quartuch-DNR.pdf](https://cpw.state.co.us/Documents/Commission/2021/January/Item.28ppt-presentation_01.14.2021_PWC-Mike_Quartuch-DNR.pdf).

**Quartuch, M.R.** (2020). Update from the North American HD session and next steps. Association of Fish and Wildlife Agencies, Social Science Subcommittee. Remote conference. August 10, 2020. (Oral)

**Quartuch, M.R.** (2020). Update from the North American HD session and next steps. Western Association of Fish and Wildlife Agencies, Human Dimensions Committee. Remote conference. July 10, 2020 (Oral)

**Quartuch, M.R.** (2020). Using HD to be responsive to agency needs. North American Wildlife and Natural Resources Conference. Part of an organized panel-presentation session co-organized by **Mike Quartuch**, Ph.D., and Ashely Gramza. Omaha, NE, USA. March 9-13, 2020. (Oral)

**Quartuch, M.R.** (2019). The “human” dimension of natural resource management. Keynote presentation at annual Colorado Parks and Wildlife Interpretation and Volunteer Training. Salida, CO, USA. (Oral)

**Quartuch, M.R.** (2020). Hunter perspectives about chronic wasting disease and CWD testing. Parks and Wildlife Commission meeting, May 7, 2020. Remote meeting. (Oral)

**Quartuch, M.R.** (2019). America’s wildlife values: Research results from Colorado. Parks and Wildlife Commission meeting, May 9, 2019. Denver, Colorado, USA. (Oral)

**Quartuch, M.R.** (2019). Hunter perspectives about chronic wasting disease and management: Preliminary survey results. Parks and Wildlife Commission meeting, January 9, 2019. Denver, Colorado, USA. (Oral)

**Quartuch, M.R.** (2019). The “human” dimension of natural resource management (Mammals Day 2). Part of Colorado Parks and Wildlife, Park Ranger training, September 11, 2019. Barr Lake State Park, Colorado, USA. (Oral) [*same presentation also given during district wildlife manager training*]

**Quartuch, M.R.**, (2019). Social science surveys: Opportunities and research. Western Hunter Education Association annual meeting. Golden, CO, USA. February 27, 2019.

**Quartuch, M.R.**, (2018). Statewide Comprehensive Outdoor Recreation Plan (SCORP) Update. Parks and Wildlife Commission meeting, May 4, 2018. Grand Junction, Colorado, USA. (Oral)



**Quartuch, M.R.**, Stedman, R., Decker, D., Siemer, W., Baumer, M. & Larson, L. (2016). Non-traditional path hunters in New York: Insights & implications for recruitment & retention. New York State Fish and Wildlife Management Board Meeting, March 23, 2016. Hamilton, New York, USA. (Oral)

**Quartuch, M.R.**, Decker, D., Stedman, R., Larson, L., Siemer, W., & Baumer, M. (2014). Recruitment and retention of non-traditional path hunters. New York State Fish and Wildlife Management Board Meeting, September 11, 2014. Pulaski, New York, USA. (Oral)

### **Academic presentations**

**Quartuch, M.R.**, Allred, S., Catanzaro, P., Markowski-Lindsay, M., & Markowitz, E. (2021). Predicting forest landowner legacy planning decisions. University of Kentucky, Department of Forestry Seminar (Oral, virtual).

**Quartuch, M.R.**, (2019). Thirty years of chronic wasting disease (CWD): Exploring deer hunters' concerns about and awareness of CWD in Colorado, disease management preferences, and corresponding intentions to continue hunting deer in the state. Pathways Human Dimensions of Wildlife Conference, Estes Park, Colorado, USA. September 22-26, 2019 (Oral).

Vayer, V., Larson, L., Choi, D., Lee, K. J., Peterson, M. N., Sharp, R., Ahlers, A., Stedman, R., Siemer, W., Irwin, K., Woosnam, K., Keith, S., Farmer, J., Van Deelen, T., Anhalt-Depies, C., Bruskotter, J., Metcalf, E., Springer, M., Graefe, A., Rodriguez, S., Kelly, M., Winkler, R., Romulo, C., & **Quartuch, M.** (2018). Hunting and fishing participation among college students: Implications for wildlife conservation. The Wildlife Society Annual Conference. Cleveland, OH: October 7-11, 2018. (Poster)

**Quartuch, M.R.** (2018). Outdoor Recreation Trends, Issues, and Opportunities in Colorado. Partners in the Outdoors Conference, May 10, 2018, Breckenridge, Colorado, USA. (Oral)

**Quartuch, M.R.**, Stedman, R.C., Decker, D., Siemer, W., Larson, L., & Baumer, M. (2017). Mapping the Non-Traditional Path to Hunting. Pathways Conference 2017, Estes Park, Colorado, USA. September 17-20, 2017. (Oral)

Siemer, W., **Quartuch, M.R.**, Decker, D.J., & Stedman, R.C. (2017). Instructor Cliques: A double-edged sword for hunter education? Pathways Conference 2017, Estes Park, Colorado USA. September 17-20, 2017. (Oral)

**Quartuch, M.R.**, Stedman, R., Decker, D., Siemer, W., Baumer, M., & Larson, L. (2017). Are Non-traditional Path Hunters the Solution to Declining Hunter Numbers? Western Association of Fish and Wildlife Agencies (WAFWA), Annual Conference, July 9. Vail, Colorado, USA. (Oral, Part of the Human Dimensions Committee Meeting)



Allred, S., **Quartuch, M.R.**, Catanzaro, P, Markowski-Lindsay, M., & Markowitz, E. (2017). Applying the Transtheoretical Model of Change to Landowner Legacy Planning Decisions. 23<sup>rd</sup> International Symposium on Society and Resource Management, June -. Umeo, Sweden (Oral)