

DAVID JONATHAN COOPER

EDUCATION

Ph.D. University of Colorado, May 1983. Biology

B.A. University of Colorado, May 1975. Environmental Biology

EXPERTISE

Wetland and riparian ecosystems studies, wetland and riparian restoration, wetland flora and vegetation analysis, wetland hydrology-vegetation interactions

POSITIONS

Current

2003-present. Senior Research Scientist/Professor, Department of Forest and Rangeland Stewardship, Colorado State University, Fort Collins, Colorado USA 80523 Phone: 970-491-5430 David.Cooper@colostate.edu

1996-present. Faculty, Graduate Degree Program in Ecology, Colorado State University, Fort Collins, Colorado USA 80523.

2012-2019. Adjunct Professor, Department of Geography and Environmental Management, University of Waterloo, Waterloo, Ontario, CANADA

2016-2020. Visiting Professor, Departamento de Recursos Hidricos, Facultad de Ingenieria Agricola, Universidad Nacional Agraria la Molina, Lima, PERU

2015-2019. Professorship under the Chinese Academy of Sciences President's International Fellowship Initiative, Beijing and Chengdu, CHINA

Previous

2012-2013. Adjunct Professor, Department of Environmental Biology and Forest Biology, State University of New York, Syracuse, NY 2002.

1998-2003. Senior Research Scientist/Associate Professor, Department of Earth Resources, Colorado State University, Fort Collins, Colorado 80523.

1998-2003. Research Scientist/Assistant Professor. Department of Earth Resources, Colorado State University, Fort Collins, Colorado 80523.

1992-1997. Research Scientist. Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins, Colorado 80523.

1987-1992. Assistant Research Professor. Department of Environmental Sciences and Engineering Ecology. Colorado School of Mines, Golden, CO.

1986-1992. Associate Professor Adjunct. Graduate School of Architecture and Planning, University of Colorado at Denver, Denver, CO. Taught landscape ecology, masters program in landscape architecture, environmental planning.

1984-1986. Summer Faculty; The Center for Northern Studies, Wolcott, Vermont. Environments of south-central Alaska. 1984-1986. Taught field courses in Alaska.

1982-present. Scientific consultant to federal, state, and local government agencies and non-government profit and non-profit organizations. Address: 2680 Lafayette Drive, Boulder, Colorado, 303-588-6246, email: fendjc@gmail.com

1978-1982. Graduate student, University of Colorado, Boulder

1976-1977. Deckhand on commercial crab & halibut fishing boat, Homer, Alaska.

1975-1976. U.S. Forest Service, Rocky Mt. Forest and Range Experiment Station, Laramie, Wyoming, Research technician. Worked on alpine sheep grazing and plains grassland vegetation analyses, Wyoming.

PROFESSIONAL AFFILIATIONS

Ecological Society of America, Society of Wetland Scientists

CURRENT AND RECENT RESEARCH GRANTS & PROJECT FUNDING

I have been principal or co-principal investigator on over 270 sponsored research grants/contracts at CSU totaling more than \$15 million

- 2018-2022 – Fen reclamation in the Alberta Oil Sands. Suncor Energy, Alberta, Canada. \$360,000.
- 2018-2020 – Measuring land use impact to peatland hydrology, water chemistry, and vegetation. Implications for peatland management, restoration and conservation. State of Washington Natural Heritage Program and EPA Region VIII. \$66,000.
- 2018-2020 – Summit Lake, Mount Evans, Colorado wetland study. Colorado Department of Transportation. \$135,000.
- 2017-2021 - LTREB Renewal: Understanding controls and state-transition on Yellowstone's northern range. N.T. Hobbs, D.J. Cooper, D. Smith, G. Sprong. National Science Foundation of the U.S. \$475,000.
- 2016-2017 – Developing a database and concepts for wetland restoration in national park units in the NPS intermountain region. US National Park Service. \$200,000.
- 2016-2017. Analysis of stream diversion effects on riparian vegetation. Great Basin National Park, Nevada. US. National Park Service. \$73,000
- 2016-2017 – Analysis of springs in Colorado National Monument. US National Park Service. \$10,000.
- 2015-2020 – Restoring the carbon accumulation functions of Tuolumne Meadows, Yosemite National Park, California. State of California and Yosemite National Park. \$527,000
- 2015-2018 – Resource assessment, restoration and erosion control at Navajo National Monument, Arizona. US National Park Service. \$98,000.
- 2015-2016. Assessment of stream crossing impacts to ephemeral streams on military lands throughout the southwestern U.S. Department of Defense, Legacy Resource Management Program. \$129,442. Legacy Project 15-774.
- 2016-2019. Assessment of the water needs of streams and riparian vegetation in the southwestern U.S. USDA Forest Service, stream technology team, \$130,000.
- 2015-2016. Developing and evaluating restoration approaches for fen wetlands on the Plumas National Forest, California. \$108,000. U.S. Forest Service.
- 2015-2016. Riparian restoration demonstration on the Howard Cantonment Area of the U.S. Army Yuma Proving Grounds, Arizona. US Department of the Army, \$72,927.
- 2014-2015. Comparing wetlands identified using National Wetlands Inventory maps vs. the Army Corps of Engineers 3 parameter approach. U.S. Army Corps of Engineers, \$162,000.
- 2014-2015. Developing restoration options for Cahoon Meadow, Sequoia National Park, California. US National Park Service \$35,000
- 2014. Restoration concepts for meadows, ditches, & drains in Great Sand Dunes National Park & Preserve, Colorado. \$7,500.
- 2014-2015. Determining the indicator status of wetland plants in the western US. Department of Defense, Corps of Engineers. \$175,000.
- 2014-2017. Restoration of coastal prairie and resacas, Palo Alto Battlefield National Historic Park, Brownsville, TX. US National Park Service, \$330,000.
- 2012-2016. LTREB: Understanding controls on state-transition on Yellowstone's northern range. N. Thompson Hobbs, David J. Cooper, J. Hoeting, M. Kauffman, R. Renkin, D. Smith, Goran Spöng and F. Watson. U.S. National Science Foundation. \$449,978
- 2012-2013. Function of fens in the San Juan Mountains, southwestern Colorado. US Bureau of

- Land Management. \$77,000.
- 2012-2013. Design and implementation of restoration of incised channels, Florissant Fossil Beds National Monument, Colorado. US National Park Service. \$31,000
- 2012-2014. Establishing the relationships between glaciers and wetlands in Glacier National Park. Montana. US National Park Service. \$110,000.
- 2011-2013. Restoration of Weippe Meadows, Nez Perce National Historical Park, Idaho. US National Park Service. \$40,000
- 2012-2013. Restoration of drainage ditches in Drakesbad Meadow, Lassen Volcanic National Park, California. US National Park Service \$25,000
- 2012-2013. Restoration of Papoose Meadow, Lassen National Forest, California. Lassen National Forest. \$25,000
- 2011-2017. Implementation of FEN creation on the SUNCOR oil sands lease, Alberta, Canada. CONRAD (Canadian Oil Sands Network for Research and Development). Collaboration between University of Waterloo, Laurentian University, University of Calgary and Colorado State University. \$696,000
- 2011-2014. Analysis of limitations to natural meadow recovery, Tuolumne Meadows, Yosemite National Park. Yosemite National Park, \$206,000.
- 2010-2012. The effects of climate change on fens in the Southern Rocky Mountains. U.S. Forest Service, Rocky Mt. Forest and Range Experiment Station. Collaboration with Drs. Katherine Dwire and Robert Hubbard, US Forest Service. \$157,000.
- 2011-2012. Pilot project to determine methods for establishing fen bryophytes and vascular plants in Alberta. SUNCOR energy, Calgary, Alberta, Canada. \$25,000.
- 2010-2013. Watershed to local scale characteristics and function of intermittent and ephemeral streams on military lands. Strategic Environmental Research Development Program (SERDP), U.S. Departments of Defense and Energy and EPA. \$1,499,000. Co-PIs E. Wohl, S. Kampf, D. Harry.
- 2010-2011. U.S. Forest Service, Juneau, Pacific Northwest Forest Sciences Center. Characterization of wetlands of SE Alaska. US Forest Service \$20,000.
- 2009-2010. Developing a Wetland and Riparian Delineation and Restoration Plan for Sand Creek, Great Sand Dunes National Park and Preserve, Colorado. National Park Service. \$23,003.
- 2009-2011. Comparative ecology and environmental history (with an emphasis on climate change) of natural and anthropogenic meadows in the Tatra Mountains (Poland and Slovakia) and Rocky Mountains (USA). National Park Service. \$47,700. Mark Fiege co-PI.
- 2009-2012. Hydrologic functioning of trees in an urban area of Colorado. City of Aurora, Colorado. \$276,000.
- 2009-2011. Vanishing marshes in Yellowstone National Park, causes and potential future vegetation. Canon and Yellowstone Foundations. \$50,000.
- 2008-2010. What is a hydrophyte? How conifers can survive in upland and wetland environments in southeastern Alaska. US Army Corps of Engineers, Cold Regions Research and Environmental Lab. \$180,000.
- 2007-2010. Landscape Configurations in Yellowstone National Park: An Alternative State Stabilized by Herbivory?" National Science Foundation, Ecosystem Program. \$412,550 Co-PI's N. T. Hobbs, D. Theobald, J. Hoeting, B. Baker.
- 2008-2010. Development of a regional restoration and protection program for mountain fens in the Southern Rocky Mountains. Funded by EPA, Region VIII. \$142,380. Co-investigators, Dr. R. Chimner and Dr. K. Nydick.
- 2008-2009. Field sampling to determine plant abundance & the use of strata for vegetation characterization: a literature review. US DOD. Army Corps of Engineers \$21,448.
2008. The role of herbivory and hydrologic condition in cottonwood establishment in Yellowstone National Park. NPS \$20,502.

- 2007 Elk impacts on Alpine Willow Communities in Rocky Mt. National Park, Colorado. NPS, \$47,999.
- 2007-2009. Developing a Wetland Restoration Plan for springs in Death Valley National Park, CA. Co-Investigator Dr. D. Sada. \$95,267.
2008. Quantification of water needs for riparian and wetland vegetation. US Forest Service, \$30,000.
2007. Analysis and design of wetland restoration options, Severy Creek wetland, Pikes Peak, Colorado. Funded by Rocky Mountain Field Institute \$28,227.
2007. Developing a monitoring program for riparian areas along the Pecos River, Pecos National Historical Park, New Mexico. National Park Service. \$32,000.
2007. Assessing the condition of the Pecos River corridor prior to implementing a public fishing program. NPS, Pecos National Historical Park. \$37,233.
2006. Effects of the Tioga Pass Road on the hydrologic regime and vegetation in Tuolumne Meadows, Yosemite National Park, California. \$69,770. Funded by Yosemite National Park.
2007. Development and implementation of a long-term meadow monitoring program, Sequoia/Kings Canyon and Yosemite National Parks, California. Funded by National Park Service. \$189,131.
2006. Wetland analysis and restoration planning for Rodeo Lagoon, Golden Gate National Recreation Area, Sausalito, CA. \$34,855.
2006. Restoration plan development, Flagg Ranch, Grand Teton National Park, WY. Funded by National Park Service. \$22,000.
2006. Develop protocol and implement of a long-term monitoring program for Rocky Mt. National Park, Colorado. US National Park Service, Inventory & Monitoring Program, \$229,217.
2005. Analysis, development and implementation of a restoration plan for Halstead Meadow, Sequoia and Kings Canyon National Park, California. \$126,821.
2005. Regional assessment of fen distribution, condition, and restoration Needs, San Juan Mountains. Awarded by EPA Region 8. \$107,000.
2007. Study effectiveness of new fence design that excludes elk and moose. NPS, Rocky Mt. National Park. \$7,000.
2005. Characterization of bofedales (peatlands) in the northern Andes, Cajamarca, Peru. \$33,000. Yanacocha and Newmont Mining.
2005. Developing Concepts for Riparian Habitat and Stream Restoration in western National Parks, Canyon de Chelly National Monument. \$305,208. National Park Service.
2005. Developing a restoration plan for Yosemite Valley, Yosemite National Park, California. \$93,500 Yosemite National Park.
2003. Biodiversity in the fens of Yellowstone National Park. Canon Foundation, Yellowstone Park Foundation, and Yellowstone National Park. \$64,000.
2001. Willow persistence in Yellowstone National Park: interactive effects of climate, hydrology and herbivory. Funded by USGS Biological Resources Division. \$350,000.
2002. Beaver effects on riparian landscape structure and function: hydrology, geomorphology, and vegetation patch dynamics along the Colorado River in Rocky Mountain National Park. Funded by U.S. Department of Interior, Geological Survey. \$95,000.
2005. Update Guidelines for wetland establishment on reclaimed oil sand leases, Alberta Canada. CEMA (Cumulative Environmental Management Association, Fort McMurray, Alberta, Canada. \$20,000. David J. Cooper, P.I.
2004. Developing a protocol for quantifying surface and groundwater requirements of wetland and riparian plant communities. US Forest Service. \$30,000
- 2004-2005. Analysis of the influence of water diversions on wetland and riparian plant communities. US Forest Service, Stream Team. \$35,000.

- 2004-2006. Effects of Flaming Gorge Dam on riparian forests in the canyons of Dinosaur National Monument. Bureau of Reclamation, \$92,000. David J. Cooper, P.I.
2004. Influence of livestock grazing on the sustainability of fens in the South Sierra Nevada range, California. Funded by Inyo National Forest, \$12,000.
2004. Evaluating the effects of ground water pumping on fens and wet meadows in the Crane Flat area of Yosemite National Park, California. \$44,000 Yosemite National Park. David J. Cooper, P.I.
- 2003-2005. Characterization and classification of fens in the Sierra Nevada and Cascade Ranges of California. U.S. Forest Service, Region 2. \$22,000. David J. Cooper, P.I.
- 2003-2006. Historic Range of Variability Assessment for Wetland and Riparian Ecosystems in Forest Service Region 2. U.S. Forest Service, Region 5. \$90,000. David J. Cooper, P.I.
- 2000-2006. Design, planning and monitoring restoration of the Snake River Gravel Pit, Grand Teton National Park, Wyoming. National Park Service, Water Resources Division and Grand Teton National Park. \$94,534. David J. Cooper, P.I.
- 2003-2005. Stream and riparian characterization on intermittent streams, Petrified Forest National Park, Arizona. Funded by National Park Service, Water Resources Division. David J. Cooper, P.I. \$53,000.
- 2002-2005. Beaver effects on riparian landscape structure and function: hydrology, geomorphology, and vegetation patch dynamics along the Colorado River in Rocky Mountain National Park. Funded by U.S. Department of Interior, Geological Survey. David J. Cooper and Bruce Baker, P.I.'s. \$95,000.
- 2002-2005. Analysis of human impacts, and restoration of Drakesbad Meadow, Lassen Volcanic National Park, California. Funded by National Park Service, Water Resources Division. David J. Cooper, P.I. \$57,500.
- 1998-2003. Tamarisk removal & riparian restoration along the Green River, Dinosaur National Monument and Browns Park National Wildlife Refuges, Colorado. Funded by U.S. Department of the Interior, Central Utah Project, David J. Cooper, P.I. \$86,915.
- 2001-2003. Status of Fremont cottonwood in the upper Colorado River basin. Funded by U.S. Department of Interior, Geological Survey. David J. Cooper and Douglas Andersen, P.I.'s \$69,400.
- 1999-2002. Determining the constraints and opportunities for willow establishment and persistence in Rocky Mountain National Park, Colorado. Funded by National Park Service Water Resources Division, and Rocky Mountain National Park. \$85,000.
- 1998-2004. Riparian vegetation studies on the Green and Yampa Rivers. Funded by the US Bureau of Reclamation. This research is investigating the effects of Flaming Gorge Dam on riparian vegetation along the Green River in Dinosaur National Monument, Browns Park National Wildlife Refuge, Ouray National Wildlife Refuge, Canyonlands National Park, and BLM land in Labyrinth and Gray Canyons. David J. Cooper, Principal Investigator. \$252,000.
- 2000-2003. Developing protocols for assessing wetland, aquatic and riparian ecosystems in Forest Service region 2 and Bighorn National Forests Assessment U.S.D.A. Forest Service. Ellen Wohl, David Cooper and LeRoy Poff, Principal Investigators. \$93,000.
- 2000-2002. Analyzing the causes of North Fork of the Gunnison River channel and riparian zone degradation. Funded by State of Colorado, Water Conservation Board. Ellen Wohl and David Cooper, Principal Investigators. \$50,000.
- 2000-2004. Analysis of fens in the Prospect Basin watershed that are potentially impacted by Telluride Ski Area expansion. Funded by Telluride Ski Company. David J. Cooper, Principal Investigator. \$115,000.
- 1996-2002. Restoration of 18 subalpine wetlands in the Telluride Mountain Village. Work with EPA, DOJ and Telluride Ski Company to design and implement restoration projects filled by

- golf course and ski area development. David J. Cooper Principal Investigator. \$120,000, for \$3,500,000 projects.
- 1998-1999. Consultant to U.S. Department of Justice and Army Corps of Engineers. Blue Sky Company vs. U.S. Assisted the DOJ and Corps of Engineers in collecting and analyzing data for the design of a 12 acre wetland restoration and creation project to compensate for an illegal wetland filling operation by a developer in the San Luis Valley in Southern Colorado.
- 1998-2000. Restoration of the Glorietta Creek floodplain. Design and implement a wetland/riparian restoration project at Pecos National Historic Site, New Mexico. Included removal of two reservoirs and levees and grading the entire site. Funded by National Park Service. \$78,000
- 1998-2000. Determining the cause of interdunal wetland and pond disappearance from Great Sand Dunes National Monument. \$29,890. Funded by National Park Service.
- 1996-2004. Determine the patterns of water acquisition and evapotranspiration by native plant communities in the San Luis Valley. Funded by the Rio Grande Water Conservation District. \$400,000.
- 1998-1999. Determining the cause and effects of cattail invasion on prairie wetlands in eastern Colorado. Funded by the State of Colorado Department of Transportation. \$25,000.
- 1998-1999. What is the sediment retention function of western wetlands? Research to analyze sediment erosion and deposition patterns along the Yampa River in NW Colorado. Funded by State of Utah, Department of Natural Resources. \$38,000.
- 1998-2001. Importance of river base flow conditions for supporting riparian forests along the San Miguel River in southwestern Colorado. Research funded by Bureau of Land Management. \$23,000.
- 1996-1998. Effects of water diversions on wetlands in the Colorado River valley, Rocky Mountain National Park, CO. This project focuses on the effects of hydrologic modifications on riparian and peatland ecosystems. Funded by the National Park Service Water Resources Division, and Rocky Mt. National Park. \$75,000
- 1996-1998. Funded by the State of Colorado, Dept. of Natural Resources and EPA Region VIII. A two-part study: (1) Developing a classification of Colorado's wetlands for use in hydrogeomorphic functional evaluation; (2) perform field investigations to document the ecological functions of 5 Colorado wetlands. \$62,508
- 1996-1997. Effects of alluvial ground water pumping on cottonwood forests along the South Platte River. Studies to determine whether ground water pumping in alluvial forests affects cottonwood forests, and design of mitigation measures to deter negative effects. \$85,000 City of Littleton and Centennial Water and Sanitation District.
- 1993-1996. Comparative ecosystem dynamics in riparian zones along regulated and unregulated rivers: the Green and Yampa Rivers. Determined mechanisms allowing cottonwood and tamarisk establishment on these large rivers. \$145,631. Bureau of Reclamation and National Park Service Water Resources Division.
- 1994-1995. Aquatic invertebrate communities in intermountain basin wetland complexes, the San Luis Valley, Colorado. \$38,500. State of Colorado Division of Wildlife.
1993. Restoration of the Beaver Meadows watershed, Rocky Mt. National Park, CO. \$25,000 National Park Service, Water Resources Division.
- 1992-1994. Wetland community development patterns and processes at the Rocky Mountain Arsenal National Wildlife Area, Colorado. \$103,000. U.S. Fish and Wildlife Service.
- 1992-1993. U.S. Fish and Wildlife Service. Recovery Program for the Endangered Fishes of the Upper Colorado River. Restoring floodplain wetlands along the Colorado, Green and Gunnison Rivers (Colorado and Utah) for endangered fishes. \$50,000

HONORS - AWARDS

- 2019 - Warner College of Natural Resources Outstanding Mentorship Award
- 2018 – Society of Wetland Scientists – 2018 Doug Wilcox Award for outstanding associate editor of the journal - *Wetlands*
- 2016 - Outstanding Research Impact Award, Warner College of Natural Resources, Colorado State University, Fort Collins, CO.
- 2015 - Professorship under the Chinese Academy of Sciences President's International Fellowship Initiative, Beijing and Chengdu, China
- 2014 - Stewardship Award, Rocky Mountain National Park, US National Park Service.
- 2013 - President's Operational Excellence Award for Environment & Sustainability (awarded to Suncor Fen Reclamation team) Suncor Energy, Calgary Alberta, Canada,
- 2013 - Project Team Award, Rocky Mountains Cooperative Ecosystems Studies Unit (RM-CESU), US National Park Service
- 2007 - Intermountain Region's 2007 Natural Resources Research Award, National Park Service.
- 2004 - Special Achievement Award, Great Sand Dunes National Monument, National Park Service
- 2004 - Certification of Appreciation, National Park Service, Water Resources Division
- 2004 - Abandoned Mine Reclamation award for restoration of the Snake River Gravel Pit Office of Surface Mining, Grand Teton National Park, Wyoming
- 2003 - Intermountain Regional Director's Award 2003 for research to support natural resource management, National Park Service
- 1993 - Colorado Conservation Award. The Nature Conservancy
- 1993 - Presentation to US Senate Environment Committee during Clean Water Act reauthorization hearings
- 1991 - Presentation to US Senate Environment Committee during wetland delineation hearings
- 1989 - Outstanding Achievement Award. US Environmental Protection Agency, Region 8

CURRENT/RECENT EXPERT PANELS/COMMITTEES/BOARDS

- Expert grant proposal reviewer for Agence Nationale de la Recherche, **France**. 2020.
- Expert Reviewer for John R. Evans Leaders Fund, Innovation CA, **Canada** Foundation for Innovation. 2019.
- Proposal reviewer for **European** Science Foundation, Environmental Commission. 2019.
- Science Advisor, PATRONATO de la Reserva Paisajística Nor Yauyos Cochas, **PERU**.
- Proposal reviewer, **Czech** Science Foundation. 2018
- Expert panel for “tipping point funding proposals” Federal Ministry of Education and Research, Federal Republic of **Germany**, Bonn. 2018.
- External reviewer for dissertation, Canberra University, **Australia**. 2018.
- Executive committee, Graduate Degree Program in Ecology, Colorado State University, 2016-2018.
- NSF site review panel, Jornada LTER program. 2015.
- 2001-2017. Expert for Park County, CO government in reviewing transfer of agricultural water rights to urban use, and dry up of historical wetlands.
- Platte River Recovery Implementation Program, peer review panel. 2015.
- Associate Editor of the journal *WETLANDS*. 2008-present.
- U.S. Army Corps of Engineers, National Technical Committee for Wetland Vegetation. 2007-present.
- Peer Reviewer of EPA's report “Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence”, January 2012.
- Grand Canyon Monitoring and Research Center (GCMRC) 2007-2008, in Cooperation with

the Adaptive Management Program for Glen Canyon Dam (GCDAMP). Terrestrial-PEP II (Protocol Evaluation Panel) Review, panel chairman. USGS and National Park Service.

- Technical reviewer of *integrated habitat assessment of the upper Trinity River, Trinity River Restoration Program, California*, for U.S. Bureau of Reclamation
- American Rivers. Technical Advisory Committee. Sierra Nevada Meadow Restoration Program.
- Expert for Rio Grande Water Conservation District, State of Colorado, and US Fish and Wildlife service in addressing effects of ground water pumping on the San Luis Valley, Colorado 1999-2017,
- CEMA (Cumulative Environmental Management Association, Alberta, Canada). Expert Panel Reviewer of *Guideline for Wetland Establishment in the Oil Sands Region, 2007 Edition. 2008. Fort McMurray, Alberta, Canada*
- SUNCOR Energy, Canada. Expert Panel Reviewer of Fen Restoration Program, Fort McMurray, Alberta, Canada. 2009.
- U.S. Army Corps of Engineers, Panel to develop regional wetland delineation manual for the western mountain and intermountain region of the US. 2007.
- National Park Service, Rocky Mountain Network National Parks, Inventory and Monitoring Program, Science Advisory Panel
- National Park Service, Sierra Network National Parks, Inventory and Monitoring Program, Science Advisor for Meadow Monitoring

PEER REVIEW PUBLICATIONS

(*Graduate students mentored by Cooper)

Books

1. David J. Cooper. 1982. *Brooks Range Passage*. The Mountaineers, Seattle, WA
2. David J. Cooper and David M. Merritt. 2012. *Assessing the water needs of riparian and wetland vegetation in the western U.S.* USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-282
3. Schook*, D. M., D. J. Cooper, J. M. Friedman, S. E. Rice, J. D. Hoover, and R. D. Thaxton. 2020. Effects of flow diversion on Snake Creek and its riparian cottonwood forest, Great Basin National Park. Natural Resource Report NPS/GRBA/NRR—2020/2104. National Park Service, Fort Collins, Colorado.

Peer Review Book Chapters

9. Rolf O. Peterson, Robert L. Beschta, **David J. Cooper**, N. Thompson Hobbs, Danielle Bilyeu Johnston, Eric J. Larsen, Daniel R. MacNulty, Kristin N. Marshall, Luke E. Painter, William J. Ripple, Douglas W. Smith and Evan C. Wolf. **2020**. Chapter 16. Indirect effects of carnivore restoration on vegetation. 25 years of wolves in Yellowstone National Park. IN: *Yellowstone Wolves: Reintroduction, Ecology, Behavior, and Conservation*. Edited by D. Smith, D. Stahler and D. MacNulty. University of Chicago Press. In Press.
8. Gage, Edward and D. J. **Cooper**. **2016**. "Wetlands and Riparian Areas." Colorado Encyclopedia, <http://coloradoencyclopedia.org/article/wetlands-and-riparian-areas>.
7. **Cooper**, D.J., S. Gaucherand, K. Kaczynski*, A. Borkenhagen*, G. McKenna. **2014**. Lessons from Oil Sands and International Wetland reclamation and restoration projects: A selective review. Chapter 4 in: *Guidelines for Wetland Establishment on Reclaimed Oil Sands Leases*, 3rd Ed. CEMA, Calgary, Alberta, CANADA.
6. Westbrook, C.J.*, D.J. Cooper, D. Butler. **2013**. Beaver hydrology and geomorphology. In: *Treatise on Geomorphology - Ecogeomorphology* (Butler, D. and Hupp, C., eds.), Elsevier: San Diego.

5. Hobbs N. T. & **Cooper, D.J. 2013.** Have Wolves Restored Riparian Willows in Northern Yellowstone? In: "Yellowstone's Wildlife in Transition". Edited by P.J. White, R. Garrott, G. Plumb. Harvard University Press. Pp. 179-194.
4. **Cooper, D.J., R. Chimner*, D. Merritt*. 2012.** Western Mountain Wetlands. Chapter 22, In: Wetland Habitats of North America: Ecology and Conservation Concerns. Edited by: Darold P. Batzer and Andrew H. Baldwin, University of California Press. Pages 313-328.
3. Chimner*, R. and D. J. **Cooper. 2011.** Fens of the San Juan Mountains. In: Natural History of the San Juan Mountains, University Press of Colorado.
2. **Cooper, D.J. 2004.** The modern environment, flora and vegetation of South Park. Chapter 3, pages 27-38, In, Barnosky, A. D. (ed.) *Biodiversity response to environmental change in the middle Pleistocene: The Porcupine Cave fauna from Colorado*. University of California Press, Berkeley.
1. **Cooper, D. J. 1986.** Community structure and classification of Rocky Mountain wetland ecosystems. Pages 66-147, in J. T. Windell et al. An Ecological Characterization of Rocky Mountain Montane and Subalpine Wetlands. U.S. D. I. Fish and Wildlife Service, Biological Report 86(11). Washington, D.C.

Peer Review Journal Articles

IN REVIEW/REVISION

148. Bisbing, S. *In review.* Can long-lived species keep pace with climate change? Evidence of plasticity and local adaptation despite high gene flow in a widespread conifer. *Diversity and Distributions*.
147. Jingwen Yang; **David J. Cooper**; Xu Zhang; Wenqi Song; Zongshan Li; Yuandong Zhang; Huiying Zhao; Shijie Han; Xiaochun Wang. *In review.* Shrub growth-climate relationship changes with altitude in a boreal forest". *Forests*
146. Zhu, L., **D. J. Cooper**, D. Yuan, Z. Li, Y. Zhang, H. Liang, X. Wang. *In review.* Regional scale temperature rather than precipitation limits vessel features in earlywood of Manchurian ash in temperate forests. *Journal of Geophysics: Biogeosciences*.
145. Zhu, L., **D.J. Cooper**, Li, Z, Zhang, Y, Liang, H, Wang, X. *in review.* Temperature rather than precipitation limits vessel features in earlywood and radial growth of Manchurian ash (*Fraxinus mandshurica* Rupr.) in temperate forests. *Dendrochronologia*

PUBLISHED OR IN PRESS

2020

144. Yang, Jingwen, D. J. Cooper, Z. Li, W. Song... X Wang. 2020. Differences in tree and shrub growth responses to climate change in a boreal forest in China. *Dendrochronologia* in press.
143. Tendar, Pema, **D. J. Cooper**, Kitichate Sridith. 2020. Wetland plant communities of the eastern Himalayan highlands in Bhutan. *Wetlands*, in press.
142. Cubley, E., H. Bateman, D. Merritt, **D. J. Cooper**. 2020. Using vegetation guilds to predict bird habitat along a desert river. *Wetlands*, In press.
141. Schook, D., J. Friedman, C. Stricker, A Csank, **D. J. Cooper**. 2020. Short- and long-term response of riparian cottonwoods (*Populus* spp.) to flow diversion: analysis of stable carbon isotopes and tree-ring widths. *Science of the Total Environment*
<https://doi.org/10.1016/j.scitotenv.2020.139523>
140. Gage, E*. **D. J. Cooper** & R. Lichvar. 2020. A comparison of USACE three-factor wetland delineations to national wetland inventory maps. *Wetlands* <https://doi.org/10.1007/s13157-019-01234-y>

2019

139. Sueltenfuss, J., T. Ocheltree, **D. J. Cooper**. 2019. The use of experimental transplants to evaluate the hydrologic niche and plant-water relations of wetland species. *Plant Ecology*.
138. Malanson, G. Risto Virtanen, Andrea J. Britton, Borja Jiménez-Alfaro, Hong Qian, Alessandro Petraglia, Marcello Tomaselli, **David Cooper**, Christian Damm, Richard H. Pemble & Robert B. Brett. 2019. Hemispheric and continental scale patterns of similarity in mountain tundra. *Annals of the Association of American Geographers*.
<https://doi.org/10.1080/24694452.2019.1677450>
137. Schook, D*, A. Borkenhagen*, P. McDaniel, J. Wagner, **D.J. Cooper**. 2019. Soils and hydrology drive wet meadow formation and approaches to restoration in the western USA. *Wetlands* <https://doi.org/10.1007/s13157-019-01200-8>
136. Sueltenfuss, J* and **Cooper, D.J.** 2019. Hydrologic similarity to reference wetlands does not lead to similar plant communities in restored wetlands. *Restoration Ecology*
<https://doi.org/10.1111/rec.12964>
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19. **Cooper**, D. J. 1994. Sustaining and Restoring Western Wetland and Riparian Ecosystems Threatened by or Affected by Water Development Projects. pp. 27-33. IN: *Sustainable Ecological Systems: Implementing an Ecological Approach to Land Management*. Proceedings of a Conference July 12-15, 1993. U.S.D.A. Forest Service. General Technical Report RM-247.
18. **Cooper**, D. J. and B. P. Van Haveren. 1994. Establishing felt-leaf willow from seed to restore Alaskan floodplains. *Arctic and Alpine Research* **26**: 42-45.
17. **Cooper**, D. J. 1994. Restoration of placer-mined wetlands in interior Alaska. pp. 130-132. IN: Partnerships & Opportunities in Wetland Restoration. U.S. Environmental Protection Agency. EPA 910/R-94-003.
16. Van Haveren, B. and D. J. **Cooper**. 1992. Rehabilitation potential of riparian systems disturbed by placer mining in interior Alaska. Proceedings 1992 National Meeting of the American Society for Surface mining and Reclamation, Duluth Minn.
15. **Cooper**, D. J. 1991. Additions to the peatland flora of the southern Rocky Mountains: habitat descriptions and water chemistry. *Madrono* **38**: 139-141.
14. **Cooper**, D. J. 1991. The habitats of three boreal fen mosses new to the southern Rocky Mountains of Colorado. *The Bryologist* **94**: 49-50.
13. **Cooper**, D. J. 1990. Typification of associations described in "Arctic-alpine tundra vegetation of the Arrigetch Creek valley, Brooks Range, Alaska". *Phytocoenologia* **18**: 159-160.
12. **Cooper**, D. J. 1990. The ecology of wetlands in Big Meadows, Rocky Mountain National Park, Colorado: the correlation of vegetation, soils and hydrology. *US Department of the Interior, Fish and Wildlife Service*, Biological Report 90(15). October 1990. 45p.
11. **Cooper**, D. J. 1989. Geographical and ecological relationships of the arctic-alpine vascular flora and vegetation, Arrigetch Peaks region, central Brooks Range, Alaska. *Journal of Biogeography* **16**: 279-295.
10. Gildersleeve, R. P., D. J. Williams and D. J. **Cooper**. 1989. Two urban stream reconstruction and wetland restoration/creation projects in Aurora, Colorado. Pp. 345-353, in *Wetlands: concerns and success*. American Water Resources Association.
9. Pollock, P., and D.J. **Cooper**. 1989. Scientific and policy outcomes of the advanced identification of wetlands in the Boulder Valley, Boulder, Colorado. pp. 187-192. In J.A. Kusler. Symposium Chairman. Proceedings of the National Wetland Symposium URBAN WETLANDS. Association of State Wetland Managers. June 26-29, 1988, Oakland, CA.

8. **Cooper, D. J. 1989.** Colorado's Wetlands. The Green Thumb (published by the Denver Botanical Gardens). 45 (2): 38-45.
7. Mutz, K., D. **Cooper**, M. Scott, and L. Miller. **1989.** Technical coordinators. "Restoration, Creation and Management of Wetland and Riparian Ecosystems in the American West". 135 p. Proceedings of a symposium held 13-15 November 1988, Denver, CO. Rocky Mountain Chapter of the Society of Wetland Scientists.
6. Emerick, J. C., W.W. Huskie AND D. J. **Cooper. 1988.** Treatment of discharge from a high elevation metal mine in the Colorado Rockies using an existing wetland. In: proceedings of 1988 meeting of American Society of Surface Mining and Reclamation.
5. **Cooper, D. J., and J. C. Emerick. 1987.** The effects of acid mine drainage on a *Carex aquatilis* fen in the Colorado Rocky Mountains. In. Proceedings of the Eight Annual Meeting of the Society of Wetland Scientists, Seattle, Wa., June 1987. pp. 96-100.
4. **Cooper, D. J. 1986.** White spruce above and beyond treeline in the Arrigetch Peaks region, Brooks Range, Alaska. *Arctic* **39**: 247-252.
3. Rovey, E. W., C. Kraeger-Rovey, and D. J. **Cooper. 1986.** Hydrological and Ecological Processes in a Colorado, Rocky Mountain Wetland: Case Study. *Cold Regions Hydrology Symposium, American Water Resources Association.* Pp. 93-100.
2. **Cooper, D. J. 1986.** The Arrigetch Peaks region of the central Brooks Range, Alaska: Ecosystems and human use. Pp. 94-99 in Proceedings—National Wilderness Research Conference: Current Research. U.S. Dept. of Agriculture, Forest Service, Intermountain Research Station, Ogden Ut., General Technical Report INT-212.
1. **Cooper, D. J. 1986.** Arctic-alpine tundra vegetation of the Arrigetch Creek Valley, Brooks Range, Alaska. *Phytocoenologia* **14**: 467-555.

Peer Reviewed Reports/Books

Published data sets

Cooper, D.J. 2016. Pre-ABOVE: Arctic Vegetation Plots at Arrigetch Peaks, Alaska, 1978-1981. ORNL DAAC, Oak Ridge, Tennessee, USA. <http://dx.doi.org/10.3334/ORNLDAAAC/1358>

Colorado State University

Carsey, K., G. Kittel, K. Decker, **D. J. Cooper**, D. Culver. 2003. Field guild to the wetland and riparian plant associations of Colorado. Natural Heritage Program.

USDA Forest Service General Technical Reports and unpublished reports

6. Gage, E., and D. Cooper. 2013. Evaluating Snow Compaction effects to fen wetlands on Rabbit Ears and Buffalo Pass of the Routt National Forest. Report prepared for US Forest Service, Routt National Forest. 61p.
5. Gage, E. and D. **Cooper.** 2013. Historical Range Of Variation Assessment For Wetland And Riparian Ecosystems, U.S. Forest Service, Rocky Mountain Region. USDA Forest Service, Gen. Tech. Rep. RMRS-GTR286WWW. 246p.
4. **Cooper, D.J. and D.M. Merritt.** 2012. Assessing the water needs of riparian and wetland vegetation in the western United States. Gen. Tech. Rep. RMRS-GTR-282.
3. Kendra Sikes, David **Cooper**, Sue Weis, Todd Keeler-Wolf, Michael Barbour, Diane Ikeda, Deborah Stout, and Julie Evens. 2013. Fen Conservation and Vegetation Assessment in the National Forests of the Sierra Nevada and Adjacent Mountains, California. USDA Forest Service PAC.
2. Dave A. Weixelman, Barry Hill, David J. **Cooper**, Eric L. Berlow, Josh H. Viers, Sabra E. Purdy, Amy G. Merrill, Shana E. Gross. **2011.** Meadow Hydrogeomorphic Types for the

Sierra Nevada and Southern Cascade Ranges, CA. USDA, Forest Service, General Technical Report R5-TP-034. Vallejo, CA. 34p.

1. Weixelman, D. and D. J. **Cooper**. 2009. Assessing Proper Functioning Condition for Fen Areas in the Sierra Nevada and Southern Cascade Ranges, California. A users guide. Gen. Tech. Rep. R5-TP-028. Vallejo, CA. US Department of Agriculture, Forest Service, Pacific Southwest Region, 52 p.

US National Park Service Reports

- Schweiger, E. W., E. Gage, K. Driver, **D. Cooper**, M. Britten, and L. O'Gan. 2014. Rocky Mountain Network wetland ecological integrity monitoring protocol: Narrative, version 1.0. Natural Resource Report NPS/ROMN/NRR—2015/991. National Park Service, Fort Collins, Colorado. 170 p.
- Schweiger, E. William, Ed Gage, Katharine M. Haynes, Erin Borgman, Laura O'Gan, Donna Shorrock, David **Cooper**, Mike Britten. Rocky Mountain Network Wetland Ecological Integrity Monitoring Protocol Standard Operating Procedures, Version 1.0 Natural Resource Report NPS/ROMN/NRR—2015/992

US Army Corps of Engineers, Engineers Research and Development Center, Cold Regions Research and Engineering Center.

1. Gage, E. and D. J. **Cooper**. 2010. Vegetation sampling for wetland delineation. A Review and Synthesis of Methods and Sampling Issues. ERDC/CRREL TR-10. 57p.

U.S.D.A. Forest Service Species Conservation Assessments (peer reviewed)

1. Gage, E. and D. J. **Cooper**. 2006. *Carex diandra* Schrank (lesser panicled sedge): a technical conservation assessment. Report for USDA Forest Service Rocky Mt. Region. <http://www.fs.fed.us/r2/projects/scp/assessments/carexdiandra.pdf>
2. Gage, E. and D. J. **Cooper**. 2006. *Carex leptalea* Wahlenberg (bristly-stalked sedge): A technical conservation assessment. Report for USDA Forest Service Rocky Mt. Region. <http://www.fs.fed.us/r2/projects/scp/assessments/Carexleptalea.pdf>
3. Gage, E. and D. J. **Cooper**. 2006. *Carex limosa* L. (mud sedge): A technical conservation assessment. Report for USDA Forest Service Rocky Mt. Region. <http://www.fs.fed.us/r2/projects/scp/assessments/Carexlimosa.pdf>
4. Gage, E. and D. J. **Cooper**. 2006. *Carex livida* (Wahlenberg) Willdenow (livid sedge): A technical conservation assessment. Report for USDA Forest Service Rocky Mt. Region. <http://www.fs.fed.us/r2/projects/scp/assessments/Carexlivida.pdf>
5. Wolf, E. Gage, E. and D. J. **Cooper**. 2005. *Drosera anglica* Huds. (English sundew): A technical conservation assessment. Report for USDA Forest Service Rocky Mt. Region. <http://www.fs.fed.us/r2/projects/scp/assessments/droseraanglica.pdf>
6. Wolf, E. Gage, E. and D. J. **Cooper**. 2004. *Drosera rotundifolia* L. (Roundleaf sundew): A technical conservation assessment. Report for USDA Forest Service Rocky Mt. Region. <http://www.fs.fed.us/r2/projects/scp/assessments/droserarotundifolia.pdf>

Book Reviews

- Cooper, D. J. 2008. Is Yellowstone on the Brink? Review of *Yellowstone's destabilized ecosystem: elk effects, science, and policy conflict*. Frederic H. Wagner. 2006. New York. Oxford University Press, 371p. Ecology 89:293-295.
- Cooper, D.J., S Bisbing, D. Millar, and E. Gage. **2013**. The biology of freshwater wetlands by Arnold G. van der Valk. The Quarterly Review of Biology.

Educational Books

- Cooper, D. J. and K. Jones. 1994.** Colorado's Wetlands. Colorado Department of Natural Resources. 16p.
- Cooper, D. J. 1994.** Restoring and Creating Wetlands: A Handbook for the Rocky Mountain West. *Environmental Protection Agency Region VIII*. 44p.
- Cooper, D. J. and K. Meiring. 1990.** A Handbook of Wetland Plants of the Rocky Mountains. *Environmental Protection Agency Region VIII*. 125p.
- Cooper, D. J. 1990.** A Citizen's Guide to Wetland Protection in the Rocky Mountain West. Published by *Environmental Protection Agency Region VIII*. 35p.

In Memoriam

- Cooper, D.J. 2003.** In Memoriam: Beatrice E. Willard. *Arctic and Alpine Research* **35**:125-127.
- Cooper, D. J., B. E. Willard, D. Buckner. 1990.** In Memoriam: John Winton Marr. 16 May 1914 – 12 October 1989. *Arctic and Alpine Research* **22**:207-208.

RECENT INVITED TALKS/WORKSHOPS/CLASSES

2018. May. Plenary Speaker for Society of Wetland Scientists Annual meeting, Denver.
2016. December. Measuring carbon dynamics, and wetland characteristics in the Colombian Andes, Pontificia Universidad Javeriana, Bogota, Colombia.
2016. September. Management and restoration of bofedales in the Peruvian Andes. Taught for Centro de Ecología y Biodiversidad (CEBIO), Huaraz, Peru. (cebioperu.org)
2015. March. Wetland Restoration along the American Cordillera. Issues and opportunities. Plenary speaker for High Altitude Revegetation Conference and Southern Rocky Mt. Chapter of the Society of Ecological Restoration.
2015. February. Have wolves saved the willows of Yellowstone? Effects of altered food webs in the American Cordillera. Distinguished Ecologist Speaker Series. Center for Ecology, Southern Illinois University, Carbondale, Illinois.
2014. September. Establishing peatland vegetation on reclaimed wetlands in the Oil Sands Region of Alberta, Plenary Talk at NAIT (Northern Alberta Institute of Technology) Boreal Research Institute workshop, Peace River, Alberta.
2014. February. Conservation and restoration of peatlands along the American Cordillera, Plenary talk at Peatland Ecological Research Group (PERG) annual meeting, Quebec City, Canada.

GRADUATE STUDENTS SUPERVISED (50 total; 34 MS, 16 Ph.D.)

CURRENT graduate students: Colorado State University

*Erin Cubley, PhD student (GDPE 2015-2020)

CURRENT: Post-doctoral fellows and Research Scientists, Colorado State University

- * Dr. Jeremy Shaw, Research Scientist
- * Dr. Edward Gage, Research Scientist
- * Dr. Evan C. Wolf, Research Scientist
- * Dr. John Hribljan, Research Scientist

GRADUATES (Current positions)

- *Lewis Messner, MS (GDPE 2019). Currently, Research Associate CSU.
- *Lydia Baldwin, MS (GDPE 2018). Consulting company, Bellingham, WA.
<https://www.geoengineers.com/people/lydia-baldwin/>
- *Melissa Booher, MS (GDPE 2018). Vegetation ecologist, Yosemite National Park, CA.
- *Jeremy Sueltenfuss, PhD (GDPE 2018). Assistant Professor, Department of Forest and

- Rangeland Stewardship, Colorado State University, Fort Collins, CO 80523.
<https://warnercnr.source.colostate.edu/jeremy-sueltenfuss-becomes-the-newest-frs-faculty-member/>
- *Dana Flett, MS, (GDPE 2018). Plumas Corporation, Quincy, California.
 - *Andrea Borkenhagen, PhD, GDPE (2018). Senior Vegetation Ecologist, Advisian, Calgary, Alberta, Canada. <https://ca.linkedin.com/in/andrea-borkenhagen-ph-d-7b94b63a>
 - *Erick Carlson, PhD GDPE (2017). Assistant Professor of Botany, Marietta College, Marietta, Ohio. <https://www.marietta.edu/person/erick-carlson>
 - *Jeremy Shaw, Ph.D. GDPE (2015). Research Scientist, Department of Forest and Rangeland Stewardship, Colorado State University, Fort Collins, CO.
 - *David Millar, Ph.D. GDPE (2015). USDA, University of Massachusetts, Mass.
 - *Cristina McKernan, MS, GDPE (2015). Ecologist for the Central and South Central Oregon Area Ecology Program, USDA Forest Service, Oregon.
 - *Betsy Harbert, MS, GDPE (2015). California Native Plant Society, Ecologist, California. <https://www.cnps.org/about/people/staff>
 - *Edward Gage, Ph.D. GDPE (2014). A multi-scale analysis of vegetation and irrigation heterogeneity effects on ecohydrological function and ecosystem services in a semi-arid urban area. Research Scientist, Colorado State University.
 - *Sarah Bisbing, PhD. GDPE. (2013). Assistant Professor, Department of Natural Resources & Environmental Sciences at the University of Nevada – Reno. <https://www.unr.edu/eech/people/sarah-bisbing>
 - *Kristen Kaczynski, Ph.D., GDPE (2013). Associate Professor, California State University, Chico, CA. <https://www.csuchico.edu/cwe/faculty-associates/kaczynski-kristen.shtml>
 - *Kristin Marshall, Ph.D., GDPE (2012). Research Scientist NOAA, Seattle, WA.
 - *Joshua Rose, MS GDPE (2012). Oil and Gas Specialist, US Fish and Wildlife Service, Arctic National Wildlife Refuge, AK.
 - *Derek Schook, MS GDPE (2012). Surface water hydrologist, National Park Service Water Resources Division, Fort Collins, CO.
 - *David Schimelpfenig, MS, GDPE (2011). The Effects of Long Term Drainage and Restoration On Soil Properties Of Southern Rocky Mountain Sedge Fens. TNC, Lander, WY.
 - *Jennifer Jones, MS, GDPE (2011). Patterns of Floristic Diversity in Wet Meadows and Fens of the Southern Sierra Nevada, California, USA. Consulting, Bozeman, MT.
 - *Julie Kray, MS GDPE 2010. Groundwater use by native plants in response to changes in precipitation in an intermountain basin. Biologist, USDA Fort Collins, CO.
 - *Katie Driver, MS GDPE 2010. Distinguishing the hydrologic regime and vegetation of fens and wet meadows in the Rocky Mountains. Botanist, Medicine Bow and Routt National Forests, Laramie, WY.
 - *Lindsay Reynolds, Ph.D. GDPE (2009). National Riparian and Wetland Lead, BLM National Operations Center, Bureau of Land Management, Denver, CO.
 - *Joanna Lemly, MS GDPE (2007). Wetland ecologist, Colorado Natural Heritage Program, Fort Collins, CO. <http://people.warnercnr.colostate.edu/?joanna.lemly>
 - *John DeWine, Ph.D. Ecology. 2006. Ecological consultant, Ohio.
 MS, Ecology. 2004. “River regulation and the future of riparian forests in the canyons of the upper Green River, Colorado-Utah”.
 - *Jeremy Shaw, MS Watershed Science 2006. Watershed and stream reach characteristics controlling riparian vegetation in ephemeral stream networks. (John Stednick advisor)
 - *Danielle Bilyeu, Ph.D. Ecology. 2006. Effects of elk browsing and water table on willow growth and physiology: implications for willow restoration in Yellowstone National Park, Wyoming. (Tom Hobbs coadvisor). Researcher, State of Colorado, Division of Wildlife. <https://cpw.state.co.us/learn/Pages/RAV-Danielle-Johnston.aspx>
 - *Cherie Westbrook, Ph.D. Ecology. 2005. Professor, Department of Geography, University of

- Saskatchewan, Saskatoon, Saskatchewan, Canada.
<https://researchers.usask.ca/cherie-westbrook/>
- *Krista Northcott (with Freeman Smith) Watershed MS. 2005. The influence of river regulation and land use on Fremont cottonwood regeneration in the upper Colorado River basin. Consulting company, Colorado.
 - *Lindsay Patterson, MS Ecology. (2005). Natural Resources Program Supervisor, State of Wyoming, Dept of Environmental Quality. <https://www.linkedin.com/in/lindsay-patterson-0a835b31>
 - *Evan Wolf, MS Ecology. 2004. CSU Research Scientist- head scientist for EcoHydrology. <https://appliedecohydrology.org>
 - *Adam Birken, MS, Ecology. 2004. Hydrology Technician, Moab Field Office, USGS, UT. <https://www.usgs.gov/staff-profiles/adam-birken>
 - *Edward Gage, MS Ecology. 2003. “Potential constraints on willow establishment in the elk winter range of Rocky Mt. National Park, Colorado”. Research Scientist, Colorado State University, Fort Collins, CO.
 - *Joyce Dickens, MS Ecology. (with Tom Hobbs, NREL) 2003, “Hydrologic, geomorphic and climatic processes controlling willow establishment in a montane ecosystem”.
 - *Christopher Williams (with Lee MacDonald, M.S. Watershed Science 2000) Associate Professor, Clark University, Massachusetts. <https://www2.clarku.edu/faculty/facultybio.cfm?id=715>
 - *Rodney Chimner. Ph.D. Graduate Degree Program in Ecology 2000. “Carbon dynamics of southern Rocky Mountain fens”. Professor, Michigan Technological University, Houghton, MI. <https://www.mtu.edu/forest/about/faculty-staff/faculty/chimner/>
 - *Scott Woods, with Lee MacDonald, Ph.D. Watershed Science 2001. “Ecohydrology of subalpine wetlands in the Kawuneeche Valley, Rocky Mt. National Park, Colorado”. Formerly, Assoc. Professor, University of Montana, Missoula. *Deceased*.
 - *Fred Wurster (with Freeman Smith, M.S. Watershed Science 2000). “Groundwater surface water interactions at a losing stream: their relationship to interdunal wetland disappearance at Great Sand Dunes National Monument, Colorado”. Currently hydrologist, Great Dismal Swamp, US Fish and Wildlife Service, Virginia. <https://www.linkedin.com/in/fred-wurster-70510a51>
 - *Christopher Arp, (with John Stednick, M.S. in Watershed Science, 1998) “Chemical and water-level influences on litter decomposition in subalpine fens”. Research Professor, University of Alaska, Fairbanks, AK. <http://ine.uaf.edu/werc/people/faculty/chris-arp/>
 - *David M. Merritt (with R. Benke MS in Fishery and Wildlife Biology 1997) “riparian vegetation and geomorphic features on regulated and unregulated rivers: Green and Yampa, NW Colorado”. Riparian ecologist, Forest Service, WO Watershed, Fish, Wildlife, Air and Rare Plants Staff, National Stream and Aquatic Ecology Center, Fort Collins, CO
 - *Donald D'Amico, (with Will Clements, MS in Fishery and Wildlife Biology 1996) “Wetland creation at the Rocky Mt. Arsenal National Wildlife Area: Hydrology, soils and vegetation dynamics”. City of Boulder, Open Space Program.
 - *Shaunda K. Wenger (with K. Wilson MS in Fishery and Wildlife Biology 1995). Evaluation of an impacted riparian wetland’s soil seed bank for use in restoration”. Private wetland consulting company, Logan, UT.
 - *Patsy Barry, with J. Trlica, (MS Range Science 1994).

Departamento de Recursos Hídricos, Facultad de Ingeniería Agrícola, Universidad Nacional Agraria la Molina, Lima, Peru

*Eduardo Ouyage, MS. Currently Director del al Oficina de Transferencia e Innovación, Tacna University, Tacna Peru.

Prescott College, Prescott, Arizona

- * Gay Austin. MS in Environmental Studies. "Fens of Grand Mesa, Colorado: Characterization, Impacts from Human Activities, and Restoration". 2008. Currently Botanist, GMUG National Forest. Retired.

Department of Environmental Sciences, Colorado School of Mines, Golden, CO

- *Craig Severn, MS in Environmental Sciences 1992. "Distribution of aquatic insects at Russell Lakes State Wildlife Area, San Luis Valley, Colorado".
- *Alison Deans, MS in Environmental Sciences 1992. "Environmental factors influencing the natural revegetation of placer mine tailings in interior Alaska"
- *Jennifer McCurdy, MS in Environmental Sciences 1990. "Hydrogeology of a wetland above Elevenmile Reservoir, South Park, Colorado".
- *Brick Smith, MS in Environmental Sciences 1989. "Phosphorus retention functions and interactions at the Chatfield Arboretum wetlands".
- *Kelli Schuter, MS in Environmental Sciences 1988. "Surface and subsurface hydrologic processes in Big Meadows, Rocky Mountain National Park, Colorado".

RECENT EXTERNAL REVIEWER FOR GRADUATE COMMITTEES

- Kimberley Murray, Geography Department, University of Waterloo, Ontario, Canada. 2016.
Matthew Elmes, Geography Department, University of Waterloo, Ontario, Canada, 2014.
Sarah Scarlett, Geography Department, University of Waterloo, Ontario, Canada, 2015.
Scott Severn, State University of New York, Syracuse. 2014.
Emma Bocking, Geography Department, University of Waterloo, Ontario, Canada, 2014.
Colin McCarter, Geography, University of Waterloo, Ontario, Canada 2012,
Kristine Yaeger (Geology, CSU 2009)
Ashley Nielson (University of Colorado – 2008)
Glynnis Hood (University of Alberta – 2007)

EXPERT WITNESS ACTIVITIES AND TESTIMONY

2019. Wetland evapotranspiration from the Forbes Park area. Forbes Park homeowners assoc.
2017. Vegetation of the Bonny Reservoir area, Colorado. State of Colorado Department of Law, for Parks and Wildlife and Trust Lands.
2011. Cottonwood tree death along Wild Horse Creek, Wyoming.
2008. City of Aurora, Colorado. Lawn irrigation return flows.
2008. US Department of Justice and Rocky Mountain National Park. Determining the effects of the Grand River Ditch breach on the Colorado River floodplain in Rocky Mt. National park, Co.
2007. US Department of Justice. Water rights to support ground water fed wetlands in Great Sand Dunes National Monument, Colorado.
2006. Expert for State of Colorado and Rio Grande Water Conservation District. District Court, Water Division No. 3, Alamosa, CO. Concerning the matter of the rules governing new withdrawals of ground water in water division No. 3 affecting the rate or direction of movement of water in the confined aquifer systems *aka* confined aquifer new use rules for Division 3. Case No. 2004 CW 24. Decision won by State of Colorado.
<http://www.courts.state.co.us/supct/watercourts/wat-div3/water3index.htm>
2001-2003. EPA and Department of Justice, investigating Clean Water Act violations at Yellowstone Mountain Club, ski area and golf course, near Bozeman, Montana. Review impact analysis and restoration projects.
2003. The Nature Conservancy, Idaho, to evaluate their monitoring program for ground water and surface water protection, Silver Creek Preserve, Sun Valley, Idaho.

- 2001. EarthJustice Legal Defense Fund, Pikes Peak road erosion and wetland impacts.
- 2001. Snowmass Capitol Caucus, Snowmass, Colorado, determining the impacts of winter snowmaking water diversions from Snowmass Creek, on floodplain ecosystems.
- 2001-2005. Friends of Mount Hood, Oregon a consortium of environmental groups analyzing the effects of Mount Hood Meadows ski area on wetlands. Review and provide input on wetland restoration projects.
- 1998-2005. EPA and Department of Justice providing analysis of impact to wetland from ski area and golf course development at Telluride Ski area, Colorado.
- 2001-2004. Park County, Colorado. Analysis of water rights change and its effect on wetlands in South Park, Colorado. Testify at county hearings.
- 1998-1999. City of Littleton, Colorado. Analysis of the effects of ground water pumping by Centennial Water and Sanitation District, on cottonwood forests along the Platte River in South Platte Park. Testify at City hearings.
- 1993. Testimony before the US Senate subcommittee on Clean Water, Fisheries and Wildlife, Washington, D.C. regarding the functions and values of wetlands in the western US. This testimony was part of the last hearing on the reauthorization of the Clean Water Act. 15 September.
- 1994. Presentation on the ecology of western wetlands to the National Academy of Sciences Committee on wetland delineation in the United States.
- 1993. Environmental Defense Fund. Testimony before the Colorado Water Quality Control Commission regarding the development of regulations for discharges into wetlands.
- 1991. Testimony before the US Senate subcommittee on Environmental Protection, Washington, D.C. regarding proposed changes to the Federal Manual for Identification and Delineation of Jurisdictional Wetlands. November 22.
- 1991. State of Colorado, United States of America (DOJ), and Rio Grande Water Conservation District; On the application of American Water Development, Inc. (AWDI) for water rights in the San Luis Valley, Colorado. November 1991. Testify in Colorado water court.
- 1988. Holy Cross Wilderness Defense Fund. Testimony in US District Court, and Eagle County, Colorado hearings. 1988. Homestake II Water Project.