

CURRICULUM VITAE (7/21/2022)

William Riebsame Travis
Department of Geography
University of Colorado
Boulder, CO 80309-0260
william.travis@colorado.edu

EDUCATION

Florida State University	BS	Geography	1971-75
University of Utah	MS	Geography	1975-78
Clark University	PhD	Geography	1978-81
International Council of Scientific Unions/ Andrew W. Mellon Fellowship	Post-Doc	Climate Impact Assessment	1981-82

RESEARCH & TEACHING

Prof. Travis studies the behavioral dimensions of natural hazards, technological risks, and climate change. His current projects focus on risk and decision-analysis applied to climate adaptation in agricultural, infrastructural, and ecological systems, and risk assessment of extreme events. Prof. Travis teaches classes in environmental geography, natural hazards and risk analysis, and water resources.

POSITIONS

Associate Professor (1991-) Department of Geography, University of Colorado Boulder (UC-B)

University Director (2021-) North Central Climate Science Adaptation Center, Cooperative Institute for Research in Environmental Science/U.S. Geological Survey

Deputy Director (2015-) Earth Lab, CIRES/UCB

Chair (2018-2020) Department of Geography, UCB

Interim Director (2016-17) Western Water Assessment, Cooperative Institute for Research in Environmental Science/National Oceanic and Atmospheric Administration, UCB

Faculty Research Associate (1984-97; 2004-2016) Institute of Behavioral Science, UC-B.

Director (2008-2013), Center for Science and Technology Policy Research, Cooperative Institute for Research in Environmental Science (CIRES)

Interim Director (2009) Western Water Assessment (CIRES)

Fellow (2008-2013) Cooperative Institute for Research in Environmental Science, UC-B

Core Faculty (2008-2012), **Associated Faculty** (2012-) Environmental Studies Program, UC-B

Director (1984-1992) Natural Hazards Center, Institute of Behavioral Science (IBS).

Assistant Professor (1984-1991) Department of Geography, University of Colorado Boulder.

Director (1990-1993) Environmental Conservation Degree Program, College of Arts & Sciences, UC-B.

Assistant Professor (1982-1984) Department of Geography, University of Wyoming.

Andrew W. Mellon Post-Doctoral Fellow (1981-1982) International Council of Scientific Unions (ICSU) / Scientific Committee on Problems of the Environment (SCOPE).

JOURNAL ARTICLES & BOOK CHAPTERS

(* graduate student co-author; **post doc co-author; ***undergraduate student co-author)

(in revise/resubmit) Palasti, L.A.* and **W.R. Travis** "Valuing forecast-informed decision-making in range livestock production." Weather, Climate and Society.

(in revise/resubmit) Dilling, L., M. Daly, **W. R. Travis**, A. Ray, O. Wilhelmi. “The role of adaptive capacity in resilience and transformation of U.S. urban water systems.” Global Environmental Change.

(in revise/resubmit) Iglesias, V., **W.R. Travis**, and J.K. Balch: “Recent droughts in the United States are among the fastest-developing of the last century.” Weather and Climate Extremes.

Shrum, T. and **W.R. Travis** (2022) “Experiments in ranching: Rain-index insurance and investment in production and drought risk management.” Applied Economics Perspectives & Policy.
<https://doi.org/10.1002/aepp.13304>

Iglesias, V., J.K. Balch, Cobian, J., Stefan, L., Nagy, C., Hester, C., Barrett, K., Reid, C., Wiedenmyer, C., Woolner, E., and **Travis, W.** (2022). “Fires that matter: Reconceptualizing fire risk to include interactions between humans and the natural environment.” Environmental Research Letters 17, 045014.
<https://doi.org/10.1088/1748-9326/ac5c0c>

Iglesias, V., Balch, J. K., and **Travis, W. R.** (2022). “U.S. fires became larger, more frequent, and more widespread in the 2000s.” Science Advances 8 (11). <https://doi.org/10.1126/sciadv.abc0020>

Nagy, R. C., Balch, J. K., Bissell, E. K., Cattau, M. E., Glenn, N. F., Halpern, B. S.,... **Travis, W.R.**...Zhu, K. (2021) “Harnessing the NEON data revolution to advance open environmental science with a diverse and data-capable community.” Ecosphere 12, e03833. <https://doi.org/10.1002/ecs2.3833>

Rangwala, I.; Moss, W.; Wolken, J.; Rondeau, R.; Newlon, K.; Guinotte, J.; **Travis, W.R.** (2021) “Uncertainty, complexity and constraints: How do we robustly assess biological responses under a rapidly changing climate?” Climate 9, 177. <https://doi.org/10.3390/cli9120177>

Travis, W.R. (2021) “Impacts and adaptation at the climate risk frontier.” Chapter 11 in C. Rosenzweig, M. Parry and M. De Mel, eds., Our Warming Planet: Climate Change Impacts and Adaptation, pp. 276-293. Singapore: World Scientific.

Iglesias, Virginia**, Anna E. Braswell**, Maxwell B. Joseph, Caitlin McShane*, Matthew W. Rossi**, Megan Cattau**, Michael J. Koontz**, Joe McGlinchy, R. Chelsea Nagy, Jennifer Balch, Stefan Leyk, and **W.R. Travis** (2021): “Risky development: increasing exposure to natural hazards in the United States.” Earth’s Future. <https://doi.org/10.1029/2020EF001795>

[non peer-reviewed invited piece] B.L. Turner II and **W.R. Travis** (2021) “Robert W. Kates, 1929-2018.” Biographical Memoirs of the National Academy of Sciences. Washington, DC. 15 pp.
<http://www.nasonline.org/publications/biographical-memoirs/memoir-pdfs/kates-robert.pdf>

Clifford, K* and **W.R. Travis** (2020): "The New (ab)Normal: Outliers, everyday exceptionality and the politics of data management in the Anthropocene." Annals of the American Association of Geographers, 111:3, 932-943, DOI: 10.1080/24694452.2020.1785836

Clifford, K.*, L. Yung, **W.R. Travis**, R. Rondeau, I. Rangwala, C. Wyborn, N. Burkhardt, and E. Neeley (2020): "Navigating climate adaptation on public lands: how views on ecosystem change and scale interact with management approaches." Environmental Management 66: 614–628 (2020).
<https://doi.org/10.1007/s00267-020-01336-y>

Balch, J. K., Iglesias**, V., A.E. Braswell**, M.W. Rossi**, M.B. Joseph, A.L. Mahood*, T. Shrum, C. White, V. Scholl*, B. McGuire***, C. Karban*, M. Buckland***, and **W.R. Travis** (2020). Social-environmental extremes: Rethinking extraordinary events as outcomes of interacting biophysical and social systems. Earth's Future 8: e2019EF001319. DOI: 10.1029/2019EF001319

Clifford, K.*, **W.R. Travis**, and L.T. Nordgren*** (2020): "A climate knowledges approach to climate services." Climate Services. 10.1016/j.cliser.2020.100155

Williams, T.M.* and **W.R. Travis** (2019): "Evaluating alternative drought indicators in a weather index insurance instrument." Weather, Climate and Society 11: 629-649. DOI: 10.1175/WCAS-D-18-0107.1

Dilling, L., M. Daly, D. Kenney, R. Klein, K. Miller, A. Ray, **W.R. Travis**, O. Wilhelmi (2019): "Drought in urban water systems: Learning lessons for climate adaptive capacity." Climate Risk Management 23: 32-42. DOI: 10.1016/j.crm.2018.11.001

Shrum, T.**, **W.R. Travis**, T. Williams*, and E. Lih*** (2018): "Managing climate risks on the ranch with limited drought information." Climate Risk Management 20: 11-26. DOI: 10.1016/j.crm.2018.01.002

Averyt, K., J. Derner, L. Dilling, R. Guerrero, L. Joyce, S. McNeeley, E. McNie, J. Morissette, D. Ojima, R. O'Malley, D. Peck, A. Ray, M. Reeves, and **W.R. Travis** (2018): "Regional climate response collaboratives: Multi-institutional support for climate resilience." Bulletin of the American Meteorological Society 91(5): 891-898. DOI: 10.1175/BAMS-D-17-0183.1

Travis, W.R., J. Smith and G. Yohe (2018): "Moving toward 1.5°C of warming: implications for climate adaptation strategies." Current Opinion in Environmental Sustainability 31: 146-152. DOI: 10.1016/j.cosust.2018.03.003

Clifford, K.* and **W.R. Travis** (2018): "Knowing climate as a social-ecological-atmospheric construct." Global Environmental Change 49: 1-9. DOI: 10.1016/j.gloenvcha.2017.12.007.

Derner, J., D. Briske, M. Reeves, T. Brown-Brandl, M. Meehan, D. Blumenthal, **W.R. Travis**, D. Augustine, H. Wilmer, D. Scasta, J. Hendrickson, J. Volesky, L. Edwards, and D. Peck (2018) "Vulnerability of grazing and confined livestock in the Northern Great Plains to projected mid- and late-21st century climate." Climatic Change 146: 19-32. DOI: 10.1007/s10584-017-2029-6.

Travis, W.R. (2018) "Robert W. Kates (1929–2018): Grappled with problems of the human environment." Proceedings of the National Academy of Sciences 115 (31) 7844-7845; DOI: 10.1073/pnas.1810131115

McCurdy, A.* and **W.R. Travis** (2018) "Simulated climate adaptation in stormwater systems: Evaluating the efficiency of within-system flexibility." Climate Risk Management 19: 23-34. DOI: 10.1016/j.crm.2017.12.002

McCurdy, A.* and **W.R. Travis** (2017): "Simulated climate adaptation in stormwater systems: Evaluating the efficiency of adaptation pathways." Environment Systems and Decisions 37: 214-229. DOI: 10.1007/s10669-017-9631-z

Travis, W.R. (2016). "Agricultural impacts: Mapping future crop geographies." [Perspective]. Nature

Climate Change 6(6), 544-545. DOI: 10.1038/nclimate2965

Dilling, L., M.E. Daly*, **W.R. Travis**, O.V. Wilhelmi, and R.A. Klein (2015) "The dynamics of vulnerability: why adapting to climate variability will not always prepare us for climate change." Wiley Interdisciplinary Reviews: Climate Change 6, 413-425. DOI 10.1002/wcc.341

Huisenga, M.* and **W.R. Travis** (2015) "Climate Variability and the Sensitivity of Downstream Temperature to Treated Waste Water Discharge: A Simulation Analysis." Environment Systems and Decisions 35: 11-21. DOI: 10.1007/s10669-014-9532-3

Travis, W.R. (2014) "Weather and Climate Extremes: Pacemakers of Adaptation?" Weather and Climate Extremes 5-6: 29-39. DOI 10.1016/j.wace.2014.08.001.

Travis, W.R. and B. Bates (2014) "What is Climate Risk Management?" Climate Risk Management 1, 1-4. DOI: 10.1016/j.crm.2014.02.003.

Travis, W.R. and M. Huisenga* (2013) "The Effect of Rate of Change, Variability, and Extreme Events on the Pace of Adaptation to a Changing Climate." Climatic Change 121: 209–222. DOI: 10.1007/s10584-013-0876-3

Travis, W.R. (2013) "Design of a Severe Climate Change Early Warning System" Weather and Climate Extremes 2: 31-38. DOI: 10.1016/j.wace.2013.10.006

Theobald, D. M., **W. R. Travis**, M. A. Drummond, and E. S. Gordon (2013) "The Changing Southwest." In Assessment of Climate Change in the Southwest United States, edited by G. Garfin, A. Jardine, R. Merideth, M. Black, and S. LeRoy, pp. 37–55. Island Press: Washington, DC.

Overpeck, J., G. Garfin, A. Jardine, D. E. Busch, D. Cayan, M. Dettinger, E. Fleishman, A. Gershunov, MacDonald, K. T. Redmond, **W. R. Travis**, and B. Udall (2013) "Summary for Decision Makers." In Assessment of Climate Change in the Southwest United States, edited by G. Garfin, A. Jardine, R. Merideth, M. Black, and S. LeRoy, pp. 1–20. Island Press: Washington, DC.

Kates, R.W., **W.R. Travis**, and T.J. Wilbanks (2012) "Transformational adaptation when incremental adaptations to climate change are insufficient." Proceedings of the National Academy of Sciences 109(19): 7156-7161. DOI 10.1073/pnas.1115521109

Travis, W.R. (2010) "Going to Extremes: Propositions on the Social Response to Severe Climate Change." Climatic Change 98: 1-19. DOI: 10.1007/s10584-009-9661-8

Gosnell, H.** , J.H. Haggerty and **W.R. Travis** (2006) "Ranchland Ownership Change in the Greater Yellowstone Ecosystem: Implications for Conservation." Society and Natural Resources 19: 743-830.

Haggerty, J.H.* and **W.R. Travis** (2006) "Out of Administrative Control: Absentee Owners, Resident Elk, and the Shifting Nature of Wildlife Management in Southwestern Montana." Geoforum 37: 816-830.

Gosnell, H.** and **W.R. Travis** (2005) "Ranchland Ownership Dynamics in the Rocky Mountain West." Rangeland Ecology and Management 58: 191-198.

Parton, W.J., M.P. Gutman and **W.R. Travis** (2003) "Sustainability and Historical Land Use Change in the

Great Plains: The Case of Eastern Colorado." Great Plains Research 13: 97-125.

Travis, W.R. (2003) "A Changing Geography: Growth, Land Use, and Water in the Interior West." In William M. Lewis, Jr., ed. Water and Climate in the Western United States, pp. 171-181. (Niwot: University Press of Colorado).

Travis, W.R., D.M. Theobald, and D. Fagre (2002) "Transforming the Rockies: Human Forces, Settlement Patterns, and Ecosystem Effects." In Jill S. Baron, ed., Rocky Mountain Futures: An Ecological Perspective, pp. 1-24. (Washington, DC: Island Press).

Dale, V.H., S. Brown, R.A. Haeuber, N.T. Hobbs, N. Huntly, R.J. Naiman, **W.E. Riebsame**, M.G. Turner, and T.J. Valone (2001) "Ecological Guidelines for Land Use and Management." In V.H. Dale and R.A. Haeuber (eds.) Applying Ecological Principles to Land Management, pp. 3-33. New York: Springer Verlag.

Riebsame, W.E. (2001) "Geographies of the New West." In P. Brick, S. Van de Wetering, and D. Snow, eds. Beyond the Great Divide: Collaborative Conservation and the New Environmental Debate. (Washington, DC: Island Press).

Dale, V.H., S. Brown, R.A. Haeuber, N.T. Hobbs, N. Huntly, R.J. Naiman, **W.E. Riebsame**, M.G. Turner, and T.J. Valone (2000) "Ecological Principles and Guidelines for Managing the Use of Land." Ecological Applications 10: 639-670.

Travis, W.R. (2000): "The Topography of Geography: Some Trends in Human Geographic Thinking," in S.W. Bednarz and R.S. Bednarz, eds., Social Science on the Frontier: New Horizons in History and Geography, pp. 17-25. Social Science Education Consortium, Boulder, CO.

D.M. Theobald, N.T. Hobbs, T. Bearly, J. Zack, T. Shenk, and **W.E. Riebsame** (1999) "Incorporating Biological Information into Local Land-use Decision Making: Designing a System for Conservation Planning." Landscape Ecology 15: 35-45.

Riebsame, W.E. (1999) "Subdividing the Rockies: Ranchland Conversion in the New West." In R.K. Olson and T.A. Lyson (eds.) Under the Blade: The Conversion of Agricultural Landscapes, pp. 398-409. Boulder: Westview Press.

Riebsame, W.E. (1998) "Ranching a Changing Landscape: Development, Perception, and the Political Ecology of the Western Range." In K. Hess and J. Baden (eds.) Writers on the Range: Western Writers Exploring the Changing Face of the American West. Niwot, CO: University of Colorado.

Travis, W.R. (1998) "Life in Paradox Valley: Values, Environment and Development in the American West," pp. 193-201 in K.L. Stewart, ed., Symposium on American Values: 1984-1997 (San Angelo State University Press, San Angelo, TX).

Pulwarty, R.S. and **W.E. Riebsame** (1997) "The Political Ecology of Vulnerability to Hurricane-Related Hazards." In H.F. Diaz and R.S. Pulwarty (eds.) Hurricanes: Climate and Socioeconomic Impacts, pp. 185-214. Springer.

Riebsame, W.E., H. Gosnell, and D. M. Theobald (1996) "Land Use and Landscape Change in the U.S.

Rocky Mountains I: Theory, Scale and Pattern." Mountain Research and Development 16: 395-405.

Theobald, D.M., H. Gosnell, and **W.E. Riebsame** (1996) "Land Use and Landscape Change in the US Rocky Mountains II: A Case Study of the East River Valley, Colorado" Mountain Research and Development 16: 407-418.

Bohren, L., W.E. Riebsame, and L.A. Duram (1996) "Central Great Plains Land Use/Cover Modeling Project: A Pilot Study in Northeastern Colorado." High Plains Applied Anthropologist 16(1): 19-28.

Riebsame, W.E. (1995) "Ending the Range Wars?" Environment 38 (May): 4-9, 26-29.

Riebsame, W.E., K.M. Strzepek, J.L. Wescoat, Jr., R. Perritt, G.L. Gaile, J. Jacobs, R. Leichenko, C. Magadza, H. Phien, B.J. Urbiztondo, P. Restrepo, W.R. Rose, M. Saleh, L.H. Ti, C. Tucci, and D. Yates (1995) "Complex River Basin Management in a Changing Climate." In K. Strzepek and J. Smith (eds.) As Climate Changes: International Impacts and Implications, pp. 57-91. Cambridge University Press.

Riebsame, W.E. (1994) "The historical bias for growth and intensification in Great Plains agricultural development." Progress in Rural Policy and Planning 4: 45-53.

Riebsame, W.E., W.B. Meyer, and B.L. Turner II (1994) "Modeling land use and cover as part of global change." Climatic Change 28: 45-64.

With 18-member team (1994) "Toward a Typology and Regionalization of Land Cover and Land Use Change." Chapter 3 in: W.B. Meyer and B.L. Turner II, (eds.) Changes in Land Use and Land Cover: A Global Perspective. Cambridge University Press.

Riebsame, W.E., W. J. Parton, K. A. Galvin, I. C. Burke, L. Bohren, R. Young, and E. Knop (1994) "Integrated Modeling of Land Use and Cover Change." BioScience 44: 350-356.

Riebsame, W.E. and R.G. Woodmansee (1994) "Mapping Common Ground on Public Rangelands." In J. Echeverria and R. Eby (eds.) Let the People Judge: Wise Use and the Property Rights Movement, pp.69-81. Washington, DC: Island Press.

Knight, R.L., G.N. Wallace and W.E. Riebsame (1994) "Ranching the View: Subdivisions versus Agriculture." Conservation Biology 9: 459-461.

NRC Panel on Policy Implications of Greenhouse Warming (1992) Policy Implications of Greenhouse Warming: Mitigation, Adaptation, and the Science Base. Washington, DC: National Academy Press, 918 pp.

Riebsame, W.E. (1991) "Sustainability of the Great Plains in an Uncertain Climate." Great Plains Research 1: 133-151. 287-296.

Riebsame, W.E. and A. Magalhaes (1991) "Assessing the Regional Implications of Climate Variability and Change." In J. Jager and H.L. Ferguson (eds.) Climate Change: Science, Impacts, and Policy, pp. 415-430. Cambridge University Press. [Plenary presentation by lead author, Second World Climate Conference, Geneva].

- Riebsame, W.E. (1991) "Anthropogenic Climate Change and a New Paradigm of Natural Resources Management." Professional Geographer 42: 1-12.
- Riebsame, W.E. and J. Snajdarova (1991) "Climate Intelligence Failures and their Avoidance." Preprints of the Seventh Conference on Applied Climatology, pp. J37-J41. American Meteorological Society.
- Riebsame, W.E. (1991) "Drought: Opportunities for Impact Mitigation." Episodes (March): 62-65.
- Riebsame, W.E. (1990) "The United States Great Plains." In B. L. Turner et al. (eds.) The Earth as Transformed by Human Action, pp. 561-575. Cambridge University Press.
- [With 19 U.S. and Soviet co-authors] (1990) Global Change: Geographical Approaches. Edited by J.R. Mather and G.F. White. Tucson: University of Arizona Press. (co-author of Chapter 4: Hazards, Risk, and Social Impact Assessment).
- Karl, T.R. and W. Riebsame (1989) "The Impact of Decadal Fluctuations in Mean Precipitation and Temperature on Runoff: A Sensitivity Study over the United States." Climatic Change 15: 423-447.
- Riebsame, W.E. (1989) "Reducing Hazards During the 1990s." Natural Hazards 1: 387-389.
- Riebsame, W.E. (1988) "Adjusting Water Resources Management to Climate Change." Climatic Change 13: 69-97.
- Easterling, W.E. and W.E. Riebsame (1987) "Assessing Drought Impacts and Adjustments in Agriculture and Water Resource Systems." In D. A. Wilhite et al. (eds.) Planning for Drought: Toward a Reduction of Societal Vulnerability, pp. 189-213. Boulder, CO: Westview Press.
- Riebsame, W.E. (1986) "The Dust Bowl: Historical Image, Psychological Anchor, and Ecological Taboo." Great Plains Quarterly 6: 127-136.
- Riebsame, W.E., H. Diaz, T. Moses and M. Price (1986) "The Social Burden of Weather and Climate Hazards." Bulletin of the American Meteorological Society 67: 1378-1388.
- Riebsame, W.E. (1985) "Climate Hazards: Lessons from Recent Events in the United States." Disasters 9: 295-300.
- Riebsame, W.E. (1985) "Research in Climate/Society Interaction." Chapter 3 in R. W. Kates, J. Ausubel and M. Berberian (eds.) Climate Impact Assessment: Studies of the Interaction of Climate and Society. New York: John Wiley and Sons.
- Karl, W.E. and W. Riebsame (1984) "The Identification of 10- to 20-year Temperature and Precipitation Fluctuations in the Contiguous United States." Journal of Climatology and Applied Meteorology 23: 950-966.
- Riebsame, W.E. (1983) "News Media Handling of Seasonal Forecasts: The Case of Winter, 1982-83." Bulletin of the American Meteorological Society 64: 1351-1356.

Riebsame, W.E. (1983) "Managing Agricultural Drought: The Great Plains Experience." In R. Platt and G. Macinko (eds.) Beyond the Urban Fringe: Land Use Issues in Non-Metropolitan America, pp. 257-270. Minneapolis: University of Minnesota Press.

Warrick, R.A. and W.E. Riebsame (1981) "Societal Response to CO₂-Induced Climate Change." Climatic Change 3: 387-428. DOI 10.1007/bf02423243

Bowden, M., R. Kates, P. Kay, W. Riebsame, H. Gould, D. Johnson, R. Warrick and D. Weiner (1981) "The Effect of Climate Fluctuations on Human Populations: Two Hypotheses." In M. Farmer, M. Ingram and T. Wigley (eds.) Climate and History, pp. 479-513. Cambridge University Press.

Travis, R. and W.E. Riebsame (1979) "Communicating Environmental Uncertainty: The Nature of Weather Forecasts." Journal of Geography 78: 168-172.

Riebsame, W.E. (1978) "Ski Tourers and the Avalanche Hazard." Great Plains-Rocky Mountain Geographical Journal 6: 288-295.

Riebsame, W.E., W.W. Woodley, and F.E. Davis (1974) "Radar Inference of Lake Okeechobee Rainfall for Use in Environmental Studies." Weatherwise 27(5): 206-211.

BOOKS & MONOGRAPHS

W.R. Travis (2007) New Geographies of the American West: Land Use and Changing Patterns of Place. (Washington, DC: Island Press).

W.E. Riebsame (Editor) and J. Robb (Director of Cartography), with essays by Patricia Nelson Limerick and Charles Wilkinson, and photography by Peter Goin (1997) Atlas of the New West. (New York: W.W. Norton).

W.E. Riebsame, S.A. Changnon and T.R. Karl (1991) Drought and Natural Resources Management in the United States. (Boulder, CO: Westview Press).

W.E. Riebsame (1988) Assessing the Social Implications of Climate Fluctuations: A Guide to Climate Impact Studies. (Nairobi, Kenya: United Nations Environment Program). With second printing and translation into Spanish and Chinese.

RESEARCH GRANTS:

Co-Principal Investigator: "Testing the strength of coupling among climate, natural, and human systems: a big data approach to natural experiments." National Science Foundation, Dynamics of Integrated Socio-Environmental Systems (CNH2), \$598,679, 2020-2022.

Principal Investigator: "Drought Information Services: The Economic Value of Drought Forecasts." National Integrated Drought Information System (NIDIS) Subcontract from the National Drought Mitigation Center, University of Nebraska-Lincoln, \$15,498, 2019-2020 (renewed for five years, thru 2025).

Principal Investigator: "North Central Climate Adaptation Science Center: Driving innovation in co-producing science to help resource managers in the North Central region adapt to a changing world." U.S.G.S., \$4,499,179, 2018-2022.

Co-Principal Investigator: “Earth Lab,” a program of the University of Colorado’s Grand Challenge in Space and Geosciences. Continuing support, approximately \$1.5-2.5M/year, 2015- .

Co-Principal Investigator: “Western Water Assessment: Building Climate Resilience by Design.” Regional Integrated Sciences and Assessment (RISA) program of the NOAA Climate Program Office, approximately \$700,000/year, 2015-2021.

Co-Principal Investigator: “Advancing the Use of Drought Early Warning Systems in the Upper Colorado River Basin.” NOAA SARP program of the NOAA Climate Program Office. \$299,862, 2016-2018.

Principal Investigator: “Building Climate Science into Land and Water Conservation Planning and Decision-Making in the American Southwest.” NOAA Climate Program Office. \$195,500, 2012-2014.

Co-Principal Investigator: “Evaluating adaptive policies for urban water resource management: Interactions between short-term drought responses and long-term climate change adaptation strategies.” NOAA Climate Program Office. \$298,225, 2010-2012

Principal Investigator: “A Drought Impact and Vulnerability Indicator Suite.” \$59,200 from the Western Water Assessment/NOAA-CIRES, 2009-2012.

Co-Principal Investigator: “Human and Ecosystem Responses to Mountain Pine Beetle Outbreaks in the Colorado Front Range.” National Science Foundation, Division of Environmental Biology. \$94,426, 2008-09.

Principal Investigator: "Ranchland Dynamics in the American West." \$150,000 from the William and Flora Hewlett Foundation. \$150,000. 2003-2006.

Co-Principal Investigator (with David McGinnis, David Bennett, Duncan Patten, Jason Shogren): "Complexity Across Boundaries: Coupled Human and Natural Systems in the Yellowstone Northern Elk Winter Range." National Science Foundation, Bio-Complexity Program, \$638,000 (\$83,700 to University of Colorado for first two years, shared with Prof. Mark Williams), 2002-2005.

Principal Investigator: "Use of Geo-spatial data in Land and Water Conservation in the American West." The Wyss Foundation, \$8,500, 2001-2002.

Principal Investigator (2001-2002) Ranchland Dynamics in the Greater Yellowstone Ecosystem. \$70,000 from Yellowstone Heritage Trust, Inc. (extended through May 2003, \$20,000)

Co-Principal Investigator (2000-2002) with Patricia N. Limerick (History). Institutional support, and the Western Futures Program. \$230,000 from the William and Flora Hewlett Foundation.

Principal Investigator (2000-2001) Ranchland Ownership Dynamics in the Rocky Mountains. \$47,000 from The Nature Conservancy.

Co-Principal Investigator with Patricia N. Limerick, History. (1999-2000). Western Citizenship Project, and a Handbook for the New West. \$60,000 from the William and Flora Hewlett Foundation.

Principal Investigator (1995-97), "Land Use and Cover Change in Developing Mountain Valleys:

Mapping and Modeling for S.C.O.P." State of Colorado Division of Wildlife, cooperative agreement with the University of Colorado. \$9,000; renewed in 1995 for \$15,000. Mapping and projecting land use change in mountain areas to assess the transformation of land cover by human action as part of DOW's prototype System for Conservation Planning (SCoP).

Principal Investigator (1993-94), "Development on the Forest Fringe: A Pilot Study of Mountain Land Use Change in Colorado." U.S. Forest Service cooperative agreement with the University of Colorado. \$13,800. An examination of the geographical pattern, and social and ecological effects, of commercial and residential development in mountain valleys.

Principal Investigator (1984-1992), A Clearinghouse on Natural Hazards Research and Applications. National Science Foundation grant to the University of Colorado; \$300,000 in 1984. Resubmitted and renewed 1985, 1986, 1987, 1988, 1989, 1990 and 1991. Approximately \$500,000 in 1991.

Principal Investigator (1989-1992), International River Basin Management in a Changing Climate: A Sensitivity Analysis of Selected Rivers. Three-year project funded by the Environmental Protection Agency (EPA). Year I: \$250,000; Year II: \$250,000; Year III: \$275,000. To design and implement a study of the potential impacts of climate change on selected international river basins, including the Mekong, Indus, Zambezi, Uruguay, and Nile.

Principal Investigator (1991), Climate Impacts and Southern Africa. UNEP. \$55,000. Project to develop information and convene workshop on potential climate change effects in Southern Africa.

Principal Investigator (1991) Travel support from National Science Foundation for the U.S. Delegation to the World Congress on Natural Hazards Reduction, New Delhi, India, February, 1992. Approximately \$20,000 in equivalent U.S. funds (partly in Indian rupees).

Principal Investigator (1991-1992), An Integrated Schema and System for Assessing Human Interactions with Environmental Change and Sustainability in the Great Plains/Rocky Mountains. University of Colorado Global Change Program. \$18,000. Grant to establish a GIS and simulation capacity to assess land use change.

Principal Investigator (1987-1989), The Policy and Economic Implications of Climate Change: A National Assessment and Regional Case Study. Environmental Protection Agency (EPA) Cooperative Agreement CR-814630 with the University of Colorado. \$55,537; supplemented and extended in 1988 and 1989. Analyzed the interaction of climate fluctuation and management of natural resources in the U.S. applying range of choice, perception, and other behavioral concepts. Conducted in-depth case study of potential responses to climate change in Sacramento Basin, California.

Principal Investigator (1988-1989), A Workshop on Natural Hazards Mitigation in the 1990s. NSF Grant to University of Colorado. \$15,000. Designed and conducted a workshop to plan the U.S. activities under the United Nations International Decade for Natural Disaster Reduction.

Principal Investigator (1987-1988), Roving Seminars on Climate Impact Assessment. United Nations Environment Program contract with the University of Colorado. \$37,000. Created and implemented a plan for evaluating and disseminating research methods to inform developing country governments about the social implications of climate change. Conducted seminars on climate impact assessment in India, Nepal and Egypt.

Co-Principal Investigator (with Robert W. Kates and Stanley Changnon): (1985-1987), “The Climate Impacts, Perception and Adjustment Experiment (CLIMPAX), Phase 1.” National Science Foundation grant to Clark University, Illinois State Water Survey, and University of Colorado. Year I, \$150,000; Year II, \$152,000. Developed an approach to identifying particular climate anomalies in the instrumental record and applied case study methods to assess their impacts on natural resources.

Principal Investigator (1985-1986), “Natural and Technological Hazards: Toward an Integrated Assessment.” National Science Foundation grant to University of Colorado. \$44,000.

Principal Investigator (1982-84), “The Usefulness of Long Range Forecasts.” National Oceanic and Atmospheric Administration (NOAA), grant NA82AA-H-00062 to the University of Wyoming. Year 1: \$37,000; Year 2: \$9,500.

TEACHING

Classes taught at UC-B:

Summer faculty (2020, 2021, 2022), Earth Data Science Corps, NSF-sponsored “Lowering Barriers to Teaching Earth Data Science to Undergraduates in Historically Underrepresented Communities Using a Virtual, Cloud-Compute Supported, Student-Directed Learning Environment.”

Geography 1962: Geographies of Global Change (team-taught, three faculty)

Geography 2412 (now GEOG 1972): Environment and Society

Geography 3402: Natural Hazards and Risk Analysis

Geography 3412: Conservation Practice

Geography 3930: Internship

Geography 4501/5501: Western Water Resources

Geography 4173: Research Seminar

Geography 4430: Environmental Conservation Seminar

Geography 4501/5501: Water Resources Management in the Western U.S.

Geography 4742: Environments and Peoples: Hazards and Risk Assessment

Geography 4742: Environments and Peoples: Public Lands

Geography 4742: Environments and Peoples: Human Ecology

Geography 4742: Environments and Peoples: Land Use

Geography 4672/5672: Agro-Ecosystems

Geography 5152: History and Theory of Geography

Geography 5155: Research Design

Geography 6181: Special Topics: Geographic Problems of the American West

CAMW 2001: Introduction to the American West

CAMW 4001: Capstone Seminar on the American West

ARSC 5010/7010: Natural Resources Policy (co-taught)

ARSC 5020/7020: Policy Response to Global Change (co-taught)

Ranching and Culture in the American West, Western Wyoming CC, summers, 1997, 98, 99 (co-taught).

History and Geography of the American West, NEH Teachers’ Summer Institute, 2000 (co-taught).

THESES & DISSERTATIONS DIRECTED

Doctoral Dissertations Chaired (16):

Peter Morrisette, 1987: "Perception, Public Policy, and Societal Adjustment to Fluctuations in Climate: A Case Study of the Rising Level of the Great Salt Lake."

Neil Heywood, 1989: "Backcountry Water: Recreation Resource and Disease Hazard in the Colorado Front Range."

David Diggs, 1990: "Drought Adjustment and the Perception of Long Term Environmental Change in the Northern Great Plains."

Sara Michaels, 1990: "The Processes and Structures of Earthquake Information Exchange in British Columbia and Washington State: A Comparative Study of Policy Communities, Issue Networks and Information Webs."

Paul Carter, 1991: "Climate and Society Interaction: The Perception of Climate and Climate Fluctuation as Revealed in Printed Sources."

Pamela Showalter, 1993: "Prognostications of Doom: Exploring the Response to Predictions of Impending Earthquakes."

Leslie Duram, 1995: "Great Plains Agroecologies: The Transition to Alternative Agriculture in Colorado."

David Theobald, 1995: "Morphology and Effects of Mountain Land Use Change in Colorado: A Multiscale Landscape Analysis."

Gary Wockner, 1997: "Policy Conundrums in the National Park: Nature, Culture, and the Wolves of Isle Royale."

Elizabeth Pike, 2001: "Community, Cows, and Conservation: The Nature Conservancy in Colorado's Yampa Valley."

Andrea Ray, 2004: "Multi-Purpose Reservoir Management in the Gunnison Basin, Colorado: Climate, Sustainability, and Adaptive Capacity."

Julia Haggerty, 2004: "A Ranchland Genealogy: Land, Livestock and Community in the Upper Yellowstone Valley, 1866 - 2004." (Co-chaired with Patricia Limerick, History)

Angela Cunningham, 2018: "The soldiers' return: Linking records of home and front to enable an American Great War geography of militarism."

Lauren Gifford, 2018: "See the forest through the trees: Market-based climate change mitigation, forest carbon offsets, and the uneven power of carbon accounting."

Eugene Longenecker, 2019: "Evaluating the Effects of Induced Development on Flood Hazards and Losses in U.S. Communities with Levees."

Katherine Clifford, 2019: "Fugitive Dust: How Dust Escapes Regulation and Remains Inscrutable."

Masters Theses Chaired (17):

David Smith, 1988: "Methods for Assessing the Social Impacts of Climate Change."

Jolana Machalek, 1992: "The Effect of User Conflict on Water Resources Management Options under Extreme Climate Conditions."

Matthew Wilson, 1994: "Competing Social Visions of the Forest Environment and USDA Forest Service Ecosystems Management: Towards a New Ecological Management Paradigm?"

Hannah Gosnell, 1995: "Rangeland Reform '94 and the Politics of the Old West: An Analysis of Institutional and Ideological Barriers to Reforming Federal Range Policy."

Phil Lidov, 1995: "Monitoring Western Rangelands: Scientific, Institutional and Individual Perspectives on Assessment and Management."

Gabe Preston, 1998: "Housekeeping in Aspen: Second Homes and Workforce Dynamics."

Mark Haggerty, 2000: "Local Government and the ESA: Scale Processes in Endangered Species Conservation Planning."

Jessica Lage, 2005: "Coming into the Country: New Owners of Ranches in the Sierra Valley, California."

Elizabeth Russell, 2006: "Watershed Organizations and Abandoned Hardrock Mines: Perceptions of Liability as Barriers to Cleanups in Colorado."

Geneva Mixon, 2006: "The Morphology of Protected Area Boundaries in Rocky Mountain National Park."

Kevin Sharp, 2008: "The Influence of Landfall Variation on Tropical Cyclone Losses in the United States as Simulated by HAZUS."

Kristin Gangwer, 2011: "Dryness and Desperate Measures: The Implications of Land Tenure on Rocky Mountain Ranchers' Drought Experiences and Behaviors."

Mary Huisenga, 2012: "Exceedance of Colorado Stream Temperature Standards: The Effects of Effluent and a Warming Climate."

Katherine Clifford, 2014: "Knowing Climate: Examining Climate Knowledges in the Gunnison Basin."

Adam McCurdy, 2016: "Simulated Climate Adaptation in Stormwater Conveyance Structures."

Travis Williams, 2018: "Drought Index-Based Insurance for the US Cattle Ranching Industry."

Luca Palasti, 2021: "Assessing the viability of forecast-informed decision-making: The value of information provided by Grass-Cast."

Post-Doctoral Fellows Supervised:

Hannah Gosnell, Center of the American West, regional studies, 2000-2004

Trisha Shrum, Earth Lab, risk and decision analysis, 2016-2018

Virginia Iglesias, Earth Lab, Extremes Project, 2019-20 (co-advised with Jennifer Balch)

PROFESSIONAL & UNIVERSITY SERVICE:

2018-2020 Chair, Department of Geography

2017-2021 member, Graduate School Executive Advisory Council

2019- CU member representative to UCAR (University Corporation for Atmospheric Research).

2015- editorial board, *Climate Risk Management* (Elsevier)

2013-2018 member, Arts and Sciences Fund for Excellence (ASFE) Committee

2005- Honors Representative, Department of Geography

2016-17 member, Academic Affairs Advisory Committee, UC-B

2016-17 member, Research Data Advisory Committee, UC-B

2013-2015 Founding co-Editor-in-Chief, *Climate Risk Management* (Elsevier)

2010-2013 Associate Editor, *Ethics, Policy & Environment* (Taylor and Francis)

2005-2008; 2011-2014 Chair, Undergrad Studies Committee and Assoc. Chair; Dept. of Geography.

2009-2011 Member, Geo-Sciences Initiative Steering Committee

2008-09 Member, Energy Initiative Steering Committee, UC-B

2007-08 Member, Director Search Committee, Center for Sci and Tech Policy Research, CIRES

2005-08 Member, Program Review Panel (PRP), UC-B

2005-06; 2013 Member, Appeals Committee on Academic Rules and Policies (ACARP), College of Arts and Sciences, UC-B

2005 Chair, Search committee, Environment and Society, Department of Geography.

2003 Chair, Search committee, Environment and Society, Department of Geography.

1995-05 Member, Advisory Board of the Natural Resources Law Center, UCB School of Law.

1995-00 Chair, 2000-2005 Member, Faculty Council, Center of the American West, UCB.

1989-00 Member, Global Change Steering Committee, UC-Boulder (now Environmental Program)

1999-01 Project Leader, for Social Science and User Needs Assessment, CIRES/NOAA Western Water Assessment.

1996-97 Member, Board of Directors, Colorado Center for Environmental Management (Governor's appointee).

1995-99 Member, Environmental Studies advisory committee.

1989-99 Member, University Executive Committee on Global Change (multi-campus program)

1989-91 Member, National Academy of Sciences panel: The Policy Implications of Greenhouse Warming.

1990-93 Member, National Academy of Sciences panel: U.S. Committee for the Scientific Committee on Problems of the Environment (SCOPE).

1990-91 Member, Planning Committee for the 1991 Snowmass Global Change Institute, University Corporation for Atmospheric Research: "Global land Use and Cover Change."

1991-92 Member, USDA Western Task Force on Sustainable Agriculture.

1992 Co-Chair, Aspen Global Change Institute, summer session II: Water, Land, and People Interactions.

1993 Member, Science Advisory Committee, Consortium for International Earth Science Information Network (CIESIN), Saginaw, MI.

1984-85, 2003-05; 2013- Member, Graduate Studies and Graduate Admissions Committees, Department

of Geography, UC-B

1985-90 Department Honors Representative

1986-90 Member, Faculty Board of the Space and Geosciences Policy Center, UC-B

1987-91 Editorial Board of *The Professional Geographer*

Editorial Board of *Natural Hazards Journal*

Member, Board of Trustees for the Association of State Floodplain Managers Fellowship Fund 1982-83

Faculty Senate, University of Wyoming

SELECTED CONSULTANTSHIPS, OTHER PROFESSIONAL ACTIVITIES, & COMMUNITY SERVICE:

Member (2005-2014), Board of Trustees, The Nature Conservancy, Colorado Chapter

Consultant (2005 and recent dates), Stratus Consulting, Boulder, CO: prepare and review material on impacts of natural hazards and climate change.

Consultant (2005-6), provide advice on creation of exhibits on geography of the Front Range, Longmont Museum and Cultural center.

Consultant (2005), Prepare a report on water development and land use associated with Forest Service lands in the West, University of Montana and USDA/USFS Forest Experiment Station, Missoula, MT.

Consultant (2001) Prepare an assessment of trends in the Greater Yellowstone Ecosystem. Greater Yellowstone Coalition, Bozeman, MT.

Member (1997-98), Committee on Land Use and Ecology, Ecological Society of America.

Consultant (1998-99) Technical Review Team for an assessment of elk and rangeland ecology relationship, Gunnison, Colo. (Colorado Div. of Wildlife and Habitat Partnership Program).

Consultant (1997), Western Water Policy Review Advisory Commission: prepare a report and deliver a briefing on land use trends in the western US for this presidential commission.

Consultant (1994-95), Grand Canyon Visibility Transport Commission and Science Policy Associates, Secondary Effects Assessment: to evaluate the land use implications of air pollution abatement alternatives in the Colorado Plateau region.

Member (1993) Advisory Committee: Range Management and Monitoring Project, Colorado State University, Colorado Cattlemen's Association, and Colorado Wool Growers Association, and **Secretary** (1992-96), Colorado Resource Round-Table (rancher and environmentalist discussion group), **Member** (1993-94), Colorado Rangeland Reform Working Group (governor and secretary of Interior's panel on grazing regulations); **Member** (1994-95), Rangeland Ecosystems Awareness Program Committee, to create a curriculum on rangeland policy and ecosystems for the Bureau of Land Management.

Presenter: Round-Table on Ecosystems Management, organized by Secretary of Interior Bruce Babbitt with the Smithsonian Institution, the Ecological Society of America, and the Sustainable Biosphere Program. Washington, DC. July 1993.

Delegate: Congress on Renewable Natural Resources: Critical Issues and Concepts for the 21st Century. Vail, CO, August 1992. Renewable Natural Resources Foundation, Washington, DC.

Consultant (1986-1991), United Nations Environment Program, Nairobi, Kenya. (Review and development of methods for climate impact assessment and mitigation and their dissemination in the Third World.)

Congressional Testimony (1989), "Global Change and Third World Development." Joint Senate hearings of the Agricultural Committee and Foreign Operations Subcommittee of the Committee on Appropriations, Washington, DC, May 10.

Consultant (1981), American Association for the Advancement of Science and U.S. Department of Energy project on the Social and Institutional Consequences of a CO₂-induced Climate Change.

SOFTWARE, WEBSITES, CODE, & DATA

www.rwkates.org: An archive of the scholarly work by Robert W. Kates. Built and maintained by W.R. Travis with help from many of Kates associates and family, plus web-designer Ami Nacu-Schmidt.

“The Culverts Model and Testbed,” R code scripts and test-bed data for simulating culvert failure and replacement in a changing climate, data for a test-bed of Colorado culverts. Developed by A. McCurdy and W. Travis. Available at: <http://wwa.colorado.edu>

“Historical High-Impact Weather and Climate Events in Colorado, Wyoming, and Utah, 1862–2015” [v. 5 - Revised 25 July 2016], developed by: J. Lukas, A. McCurdy, W. Travis, and K. Wolter. Available at: <http://wwa.colorado.edu/climate/extremes/database/>

“The Drought, Ranching, and Insurance Response (DRIR) Model” [v. 7_17], developed by W. Travis, A. McCurdy, and M. Roland. Available at: <https://ranchingio.wordpress.com/>

TECHNICAL REPORTS & WORKING PAPERS & MISC.

Travis, W.R. (2016) Using the “Drought, Ranching and Insurance Response Model” (DRIR) (12/5/16). Available at: http://wwa.colorado.edu/themes/projects/drir_model_details.pdf

Travis, W. R., and Z. Johnson. (2013). [Tracking Socioeconomic Impacts of Drought with Rapid Analytics and Dashboards](#). Western Water Assessment White Paper.

Klein, R., and W. R. Travis. (2012). [Socioeconomic Impacts and Adaptation Strategies: Assessing Research on Drought, Climate Change and Recreation](#). Western Water Assessment White Paper.

Travis, W. R., and R. Klein. (2012). [Socioeconomic Impacts and Adaptation Strategies: Assessing Research on Quantification of Drought Impacts](#). Western Water Assessment White Paper.

Travis, W. R., K. Gangwer, and R. Klein. (2011). [Assessing Measures of Drought Impact and Vulnerability in the Intermountain West](#). Western Water Assessment White Paper.

Travis, W.R.: "Geo-engineering the Climate: Lessons from Purposeful Weather and Climate Modification". <http://www.colorado.edu/ibs/pubs/eb/es2008-0002.pdf>

Travis, A, Durant, T. Dickinson, and K. Sharp: "Human Dimensions of the Mountain Pine Beetle Outbreak in the Greater Niwot Ridge LTER Landscape: Specifying Anthropogenic Feedbacks and Socio-Economic Impacts in a Coupled Human-Natural System"

J. B. Smith and W. R. Travis (2010) [Adaptation to Climate Change in Public Lands Management](#). Issue Brief 10-04. Resources for the Future, Washington, DC. Available at: http://sciencepolicy.colorado.edu/admin/publication_files/resource-2814-2010.12.pdf

Travis, W.R. (2009) “Exploring Links between Natural Hazards and Global Warming.” [Natural Hazards Observer](#) 33: 1, 5-6.

Gosnell, H., Henderson, J. Jones, R., Katzenberger, J., Lane, Diana, Lazard, B., Lowsky, J., Preston, G.,

Rice, J., Smith, J., Travis, W., Wigley, T.M.L., Wilby, R., and Williams, M. (2006) Aspen and Climate Change: An Assessment of Impacts and Potential Responses. Aspen Global Change Institute, Aspen, CO. 178 pp. Available at:
http://www.agci.org/library/publications/about/publication_details.php?recordID=16844

W.R. Travis, D. Theobald, G. Mixon, and T. Dickinson (2005) Western Futures: A Look into the Patterns of Land Use and Future Development in the American West. Report from the Center #6. Center of the American West, University of Colorado-Boulder. 19pp.

H.G. Schneider, J.H. Haggerty, T. Dickinson, Geneva Mixon and W.R. Travis (2003) "Ranchland Dynamics in the Greater Yellowstone Ecosystem: Summary Report." Center of the American West, University of Colorado, Boulder. 37 pp.

P.N. Limerick, W.R. Travis and T. Scoggin: Boom and Bust in the American West. Report from the Center No. 1, Center of the American West, University of Colorado, Boulder. 21 pp.

W.R. Travis: "The Geography of Development and Water in the American West." Report to the U.S. Forest Service, Pacific Northwest Research Station, Seattle, WA. 62 pp.

W. Riebsame (with James Wescoat and Peter Morrisette): "Western Land Use Trends and Policies: Implications for Water Resources." Report for the Western Water Policy Review Advisory Commission (U.S. Bureau of Reclamation, Denver).

P. Showalter, W.E. Riebsame, and M.F. Meyers: "Natural Hazard Trends in the United States: A Preliminary Review for the 1990s." Working Paper No. 83. Natural Hazards Research and Applications Information Center, University of Colorado, Boulder.

R. Woodmansee, W. Riebsame, D. Freckman, D. Haynes, and J. Logan (1992) "Achieving Agro-Ecosystem Sustainability: The Research Challenge." USDA White Paper, Western U.S. Task Force on Sustainable Agricultural Systems.

W. Riebsame (1990) "Social Perspectives on Global Climate Change. In S. Rayner, W. Naegeli, and P. Lund (eds.) Managing the Global Commons: Decision Making and Conflict Resolution in Response to Climate Change, pp. 11-26. Global Environmental Studies Center, Oak Ridge National Laboratory.

W. Riebsame with National Floodplain Review Committee (1990) "An Action Agenda for Managing the Nation's Floodplains." Special Publication #25. Boulder, CO: Natural Hazards Center.

J. W. Jacobs and W. Riebsame (1989) "The Greenhouse Effect: Recent Research and Some Implications for Water Resource Management." Working Paper No. 65. Natural Hazards Research and Applications Information Center, University of Colorado, Boulder.

W. Riebsame (1989) "Climate Change as Natural Hazard: Three Perspectives from Natural Hazards Research Useful for Analyzing the Social Implications of Global Warming." In J. C. Topping (ed.) Proceedings of the Second North American Conference on Preparing for Climate Change, pp. 158-162. Washington, DC: Climate Institute.

W. Riebsame and J. W. Jacobs (1989) "Climate Change and Water Resources in the Sacramento-San Joaquin Region of California: Policy Adjustment Options. In J. B. Smith and D. A. Tirpak (eds.) The Potential Effects of Global Climate Change on the United States: A Report to Congress, Appendix J, pp. 2-1 to 2-18. Washington, DC: U.S. Environmental Protection Agency.

W. Riebsame (1989) "Assessing the Social Implications of Climate Fluctuation through Climate Impact Studies." In Climate and Food Security. Manila, Philippines: International Rice Research Institute.

W. Riebsame and S. K. Sinha (1988) "Report of the First Two UNEP 'Roving Seminars' on Climate Impact Assessment: India and Nepal." Project Report. Natural Hazards Research and Applications Information Center, University of Colorado, Boulder.

W. Riebsame (1988) "Social Adaptation to Climate Change: Research and Policy Issues." In D. Abrahamson and P. Ciborowski (eds.) The Greenhouse Effect: Policy Implications of a Global Warming, pp. 189-224. Publication No. CURA 88-8. Minneapolis: Center for Urban and Regional Affairs, Hubert Humphrey Center, University of Minnesota.

W. Riebsame (1987) "Human Response to Climate Change: The Role of Decision-Maker Perception." Proceedings of the Symposium on Climate Change in the Southern United States: Future Impacts and Present Policy Issues. New Orleans, LA, May 28-29, 1987.

W. Riebsame, H. Diaz and T. Moses, editors (1986) An Annotated Bibliography of Weather and Climate Hazards. Topical Bibliography No. 12. Boulder, CO: University of Colorado, Institute of Behavioral Science. 402 pp.

W. Riebsame (1986) "Research Needs in Western Flood Hazards." In Improving the Effectiveness of Floodplain Management in Arid and Semi-Arid Regions, pp. 191-193. Madison, WI: Association of State Floodplain Managers.

W. Riebsame (1985) "Social Perspectives on Climate Hazards: The Case of Great Salt Lake Rise." In P. A. Kay and H. F. Diaz (eds.) Problems and Prospects for Predicting Great Salt Lake Levels, pp. 247-260. Salt Lake City: Center for Public Affairs and Administration, University of Utah.

R. W. Kates, S. A. Changnon, Jr., W. Riebsame, and T. R. Karl (1984) The Climate Impact, Perception, and Adjustment Experiment (CLIMPAX): A Proposal for Collaborative Research. Publications of the Center for Technology, Environment, and Development, Clark University, Worcester, Massachusetts.

W. Riebsame (1982) "Assessing the Impact of Climate on Society: A Research Review." In Proceedings of the Technical Conference on Climate for Africa, Arusha, Tanzania, January 25-30, 1982, pp. 491-520. Publication No. 596. Geneva: World Meteorological Organization.

W. L. Woodley, Joanne Simpson, Alan H. Miller, J. Jose Fernandes-Partagas, and W. Riebsame (1971) Florida Cumulus Seeding Experiment for Drought Mitigation, April-May 1971. NOAA Technical Memorandum ERL OD-9, U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, Environmental Research Laboratories, Boulder, CO.