



Barry Baker

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Research interest include bioclimatology, response of terrestrial ecosystems (grassland and alpine) to climate change, and ecosystem modeling of grassland ecosystems.

EDUCATION

Ph.D. Systems Ecology, Colorado State University, Fort Collins, CO.1991
M.Sc. Breeding and Genetics, Colorado State University, Fort Collins, CO 1988
B.S. Animal Science, Colorado State University, Fort Collins, CO 1985

EMPLOYMENT HISTORY

2014 – Present: Senior Research Scientist, Conservation Biology Institute, Fort Collins, CO, USA
2009 - 2014: Director, Canyonlands Research Center, The Nature Conservancy, Moab, UT, USA
2009 – Present: Adjunct Assistant Professor, Department of Environment and Society, College of Natural Resources, Utah State University, Logan, UT, USA.
2002 - 2008: Climate Change Scientist/Systems Ecologist, Global Climate Change Initiative, The Nature Conservancy, Boulder, CO, USA.
2001 – 2002: Ecologist, Western Conservation Science Center, The Nature Conservancy, Boulder, CO, USA.
1997 – 2001: Systems Ecologist/Team Leader Conservation Bioinformatics, Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO, USA.
1997 – 1998: Consultant, United Nations Environment Programme and the Institute for Environmental Studies, Vrije Universiteit, Amsterdam, The Netherlands.
1993 – 1996: Consultant, Mongolian Ministry for Nature and Environment, Ulaanbaatar, Mongolia and United Nations Development Programme, New York, USA.
1993 – 1997: Technical Advisor, Grassland Ecosystem Sector, Country Studies Global Climate Change Program, United States Environmental Protection Agency, U.S. Agency for International Development, Department of Energy, U.S. Department of Agriculture, Washington, DC, USA.
1992 – Present: Affiliate Faculty, Colorado State University, Fort Collins, CO, USA.
1991 – 1994: Systems Ecology Post Doctorate, United States Department of Agriculture, Agricultural Research Service, Fort Collins, CO, USA.



SELECT PROJECT EXPERIENCE

iUTAH EPSCoR Program, National Science Foundation EPS 1208732, The effect of anthropogenic nitrogen and sedimentation on primary producers mediated through tadpole bioturbation. Co-PI

USDA NRCS Digital soil mapping of soil properties and historical aerial photo analysis as tools for developing and testing ecological site concepts. *Co-PI: \$39k*

U.S. Forest Service 10-CS-11041000-029, North Elk Ridge/Cottonwood Ecosystem Condition Assessment. Project Director

National Fish and Wildlife Foundation 99-138, BLM/FS Sensitive Species Information in Colorado. PI

National Science Foundation DBI-9975496, Planning for the development of a distributed, Internet database system for biodiversity data from the International Network of Conservation Data Centers. PI

PROFESSIONAL ORGANIZATION

American Geophysical Union
Ecological Society of America
Society for Range Management

TECHNICAL REVIEW SERVICES

Climatic Change
Climate Dynamics
Erdkunde
Environmental Monitoring and Assessment
Landscape Online

PUBLICATIONS

Relevant Peer Reviewed Journal Articles

Heiner, M., J. Higgins, X. Li, and B. Baker. 2011. Identifying freshwater conservation priorities in the Upper Yangtze River Basin. *Freshwater Biology* 56:89-105.

Kittel T, B. Baker, J. Higgins, J. Haney. 2011. Climate vulnerability of ecosystems and landscapes on Alaska's North Slope. *Regional Environmental Change* 11: 249-264, 10.1007/s10113-010-0180-y.

Löffler, J., K. Anschlag, B. Baker, B. Dieckrüger, O.D. Finch, D. Wundram, B. Schröder, A. Lundberg. 2011. Mountain ecosystem response to global change. *Erdkunde*. 65:189-213.



Baker B., H. Diaz, W. Hargrove, F. Hoffman. 2010. Use of the Köppen–Trewartha climate classification to evaluate climatic refugia in statistically derived ecoregions for the People’s Republic of China. *Climatic Change*. 98:113-131.

Baker, B.B. and R.K. Moseley. 2007. Advancing treeline and retreating glaciers: Implications for conservation in Yunnan, P.R. China. *Arctic, Antarctic, and Alpine Research*. 39:200-209.

Saxon, E., B. Baker, W. Hargrove, F. Hoffman, and C. Zganjar. 2005. Mapping environments at risk under different global climate change Scenarios. *Ecology Letters*. 8:53-60

Eckert, J.B., B.B. Baker, and J.D. Hanson. 1995. The impact of global warming on local incomes from range livestock systems. *Agricultural Systems*. 48:87-100

Baker, B.B., J.D. Hanson, R.M. Bourdon, and J.B. Eckert. 1993. The potential effects of climate change on ecosystem processes and cattle production on U.S. rangelands. *Climatic Change*. 25:97-118

Hanson, J.D., B.B. Baker, and R.M. Bourdon. 1993. Comparison of the effects of different climate change scenarios on rangeland livestock production. *Agricultural Systems*. 41:487-502

Baker, B.B., R.M. Bourdon, and J.D. Hanson. 1992. FORAGE: A simulation model of grazing behavior for beef cattle. *Ecological Modelling*. 60:257-279

Relevant Peer Reviewed Book Chapters

Baker, B.B., D. Bachelet, C. Daly, J. Ma, R.K. Moseley, X.Z. Shi, J.H. Sun, and A. Shlisky. 2006. Effects of climate change and land management practices in the Hengduan Mountains of northwestern Yunnan, PRC: options for alpine conservation. pp. 272-273. in: M. Price, (ed.), *Global Change in Mountain Regions*. Dumfrieshire, Sapiens Publishing.

Hannaway, D.H., C.P.Q. Daly, D.F. Chapman, B.B. Baker, and A.S. Cooper. 2005. Computer-based forage management tools: Historical, current, and future applications. pp. 389-402. In: D. A. McGilloway (ed.), *Grassland: A Global Resource*. Wageningen Academic Publishers, Wageningen.

Baker, B. and E.F. Viglizzo. 1998. Rangeland Livestock Ecosystems. pp. 9.1-9.34. in: I. Burton, J.F. Feenstra, J. Smith, and R.S.J. Tol (eds.), *Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies*. United Nations Environment Programme and Institute for Environmental Studies, Vrije Univrsiteit, Amsterdam, The Netherlands. http://www.vu.nl/IVM/research/climatechange/fb_Handbook.htm



Relevant Manuscripts and Abstracts in Proceedings

Baker, B., R. Gillies, S.Y. Wang, T. Wood. 2012. Climatic implications for restoration of ecosystems on the Colorado Plateau under a changing climate. OOS 28-Restoration of Colorado Plateau Ecosystems: Establishing Resilient Communities in the Face of Climate and Land Use Change. 97th Annual Meeting ESA, Portland, OR. (invited paper)

Baker, B. 2010. Overview of observed and predicted climatic trends in the Intermountain West. Symposium: Managing Montane Wildlife and Habitat in a Changing Climate, 17th Annual Wildlife Society Meetings, Snowbird, UT (invited paper)

Baker, B.B. 2010. Implications for conservation in high mountain ecosystems of Yunnan, China in a changing climate. Symposium: Vulnerability and Resilience of Ecosystem Carbon and Biodiversity to Climate Change and Deforestation in the Asia-Pacific Region 95th Annual Meeting ESA, Pittsburgh, PA (invited paper)

Baker, B. 2009. Climate change and thresholds: Managing for more than changes in mean temperature and precipitation. 10th Biennial Conference of Research on the Colorado Plateau, Flagstaff, AZ (invited paper)

Bachelet, D., B. Baker, J. Hicke, D. Conklin, and McKelvey, 2007. Data gathering and simulation of climate change impacts in mountainous areas. Eos Transactions AGU 88(52), Fall Meeting Supplement, Abstract GC33B-01 (invited paper).

Baker, B., D. Bachelet, J. Lenihan, and R. Drapek, 2007. Simulating the effect of various climate change scenarios on conservation in northwestern Yunnan, PRC. ESA/SER Joint Meeting: Ecological Restoration in Changing World, San Jose, CA (contributed paper).

Relevant Book Chapters and Technical Reports

Baker, B.B., T.G.F. Kittel, J.V. Higgins, C.J. Haney, and E.C. Saxon 2005. Threshold responses to climate change on Alaska's North Slope, Final Report to BP Exploration Alaska, pp. 65. The Nature Conservancy, Arlington, VA

Shafer, W. R., R. M. Enns, B. B. Baker, L. W. V. Tassell, B. L. Golden, W. M. Snelling, C. H. Mallinckrodt, K. J. Anderson, C. R. Comstock, J. S. Brinks, D. E. Johnson, and R. M. Bourdon 2005. Bio-economic simulation of beef cattle production: The Colorado Beef Cattle Production Model. pp. 106. Agricultural Experiment Station, Technical Bulletin, TB05-02, Colorado State University, Fort Collins, CO.

Tuhy, J., P. Comer, D. Dorfman, M. Lammert, B. Neely, L. Whitham, S. Silbert, G. Bell, J. Humke, B. Baker, and B. Cholvin 2002. An ecoregional assessment of the Colorado Plateau. The Nature Conservancy, Moab Project Office

Baker, B.B. 1996. Gap Analysis of Species and Protected Areas. pp. 31-40. in: Biodiversity Conservation Action Plan for Mongolia. UNDP, UNOPS, Ministry for Nature and Environment, Ulaanbaatar, Mongolia.



Baker, B. 1996. Grassland/Livestock Impact and Adaptation Assessments. pp. 5.15-5.26. in: R. Benioff, S. Guill, and J. Lee (eds.), *Vulnerability and Adaptation Assessments: An International Handbook*. Kluwer Academic Publishers, The Netherlands.

Hanson, J.D. and B.B. Baker 1993. Simulation of rangeland production: future applications in systems ecology. pp. 305-315. in: M.F. Goodchild, B.O. Parks, and L.T. Steyaert (eds.), *Environmental Modeling with GIS*. Oxford University Press, New York.

Hanson, J.D., B.B. Baker, and R.M. Bourdon 1992. SPUR2 Documentation and User Guide, GPSRU Technical Report No. 1. pp. 24. USDA-ARS-GPSR, Fort Collins, CO.

INVITED WORKSHOPS/SYMPOSIA/CONFERENCES

Overview of observed and predicted climatic trends in the Intermountain West, Managing Montane Wildlife and Habitat in a Changing Climate, 17th Annual Wildlife Society Meetings, Snowbird, UT September 2010

Climate change and thresholds: Managing for more than changes in mean temperature and precipitation, Application of Threshold Concepts to Management Decision Making, 10th Biennial Conference of Research on the Colorado Plateau, Flagstaff, AZ October 2009

Keynote speaker: *Climate change and landscape response: Challenges into 2050, Global Change and Landscape Response, Geographisches Institut, Universität Bonn, Bonn, Germany October 2008*

Climate change and ecosystem response in Northwestern Yunnan, Workshop on climate change and key ecosystems of China: Impacts and adaptation, Chinese State Environmental Protection Administration, Huhahaote (Hohhot) Inner Mongolia October 2007