TIMOTHY KITTEL

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BIOSKETCH

Dr. Timothy Kittel is a research ecologist and climate scientist with the Institute of Arctic and Alpine Research, University of Colorado, Boulder. He has more than thirty-five years of professional research experience in global change science, with contributions to the science of climate-biosphere interaction, historical climatic change, and regional ecosystem and climate modeling. Dr. Kittel's work on climate change impacts has been included in IPCC and US National Assessments. His current research is on dealing with climate change uncertainty in biodiversity conservation planning and climate change in high mountain regions. Dr. Kittel has published more than 85 peer-reviewed articles and book chapters in ecology and climate dynamics and has contributed over 40 climatic and ecological public-access datasets. He is Editor-in-Chief for the journal *Climate*. Dr. Kittel's teaching emphasizes field instruction in ecology and conservation biology. He currently teaches field ecology courses in the Rocky Mountains and directs a study abroad program on Conservation Practice in Brazil's Atlantic Forest.

EDUCATION

B.S.	1975	University of California, Davis	Environmental Science, Highest Honors
M.S.	1978	University of California, Davis	Ecology (Biological Ecology)
Ph.D.	1986	University of California, Davis	Ecology (Physical Ecology)

AREAS OF INTEREST AND CURRENT RESEARCH

- Conservation Practice and Climate Change – Climate vulnerability assessment in conservation planning
- Climate Analysis & Dynamics – Elevation-dependent climate change in mountain regions forced by atmospheric circulation
- Ecological Dynamics – Biotic responses to climate variability and climate change
- Vegetation Geography

PROFESSIONAL EXPERIENCE

Research *– http://instaar.colorado.edu/~kittel/cv.htm#ResHighlights*

2002-present	*Research Affiliate/Research Associate*, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado at Boulder. Research Affiliate 2002-2004, 2009-2010, 2021-present. Research Associate, 2004-2008, 2011-2021.
2002-2007	*Research Scientist III*, Natural Resource Ecology Laboratory, Colorado State Univ, Ft. Collins
1997-2002	*Scientist II,* Climate and Global Dynamics Division, National Center for Atmospheric Research (NCAR), Boulder, CO
1998-1999/ 1999-2001	*Deputy Section Head / Acting Section Head,* Ecosystem Dynamics and the Atmosphere Section, National Center for Atmospheric Research, Boulder, CO
1991-1996	*Deputy Project Scientist,* Climate System Modeling Program, University Corporation for Atmospheric Research (UCAR), Boulder, CO
1987-1997/ 1997-2002	*Research Associate / Research Scientist I*, Natural Resource Ecology Laboratory, Colorado State University, Ft. Collins
1985-1986/ 1987-1990	*Postdoctoral Fellow / Research Associate*, Cooperative Inst for Research in the Atmosphere (CIRA), Colorado State University, Ft. Collins

Teaching *– http://instaar.colorado.edu/~kittel/Teaching_Exp.htm*

2010-present	*Global Seminar Faculty Director*, Education Abroad Programs, University of Colorado, Boulder
2005-present	*Lecturer*, Mountain Research Station, University of Colorado, Boulder

2000-2018	*Instructor*, Earth Institute Center for Environmental Sustainability, Columbia University, NY
2010-2012	*Lecturer,* University of Nevada, Las Vegas
2005,2007,2016	*Lecturer*, Depts of Geography and Ecology & Evolutionary Biology, Univ. of Colorado, Boulder
2006	*Lecturer,* Semester at Sea, Institute for Shipboard Education, Pittsburgh, PA
1984	*Lecturer*, Dept of Land, Air, and Water Resources, University of California, Davis
1976	*Lecturer*, Sierra Nevada College, Incline Village, NV

***International Experience* –** Professional activities in the Americas, Europe, Asia, Africa, Australasia, Oceania, and Antarctica including overseas workshops, instruction, and field research – *http://instaar.colorado.edu/~kittel/International_Exp.html*

SPONSORED RESEARCH AND PROFESSIONAL SERVICE —

Grants as Principal Investigator – *Including:* NASA-EOS, NOAA, USGS-Global Change Research Program, National Park Service, USDA Forest Service, EPRI, DOE.

Committees and Science Teams (22) – *Including:*

Rocky Mountain Climate Working Group, Greater Yellowstone Network and Rocky Mountain Network, National Park Service Inventory and Monitoring Program. 2009-2010.

British Columbia Central Interior Ecoregional Assessment, Nature Conservancy of Canada, Victoria, BC. Team Lead, Climate Change Working Group; Member, Core Team. 2007-2011.

Journal Editor – Editor-in-Chief, *Climate* (2022-present) https://www.mdpi.com/journal/climate

PUBLICATIONS (peer-reviewed 89; total publications 251) – *Including:*

Kittel, T.G.F. & T. Schulz (eds.). 2023. "Climate System Uncertainty and Biodiversity Conservation." Joint Special Issue of *Climate* and *Earth*. (in progress, 14 articles published online to date). https://www.mdpi.com/journal/climate/special_issues/bio https://www.mdpi.com/journal/earth/special_issues/climate_biodiversity

Kittel, T.G.F., et al. 2015. Contrasting long-term alpine and subalpine precipitation trends in a mid-latitude North American mountain system, Colorado Front Range, USA. *Plant Ecology & Diversity* 8:607-624. http://dx.doi.org/10.1080/17550874.2016.1143536

Kittel, T.G.F. 2013. The Vulnerability of Biodiversity to Rapid Climate Change. Chapt. 15, in: *Vulnerability of Ecosystems to Climate*, T.R. Seastedt and K. Suding (eds.), Vol. 4 in: Climate Vulnerability, R.A. Pielke, Sr. (Series Ed.). Elsevier, Academic Press, Oxford. http://dx.doi.org/10.1016/B978-0-12-384703-4.00437-8

Kittel, T.G.F., S.G. Howard, H. Horn, G.M. Kittel, M. Fairbarns, and P. Iachetti. 2011. A vulnerability-based strategy for incorporating climate change in regional conservation planning: Framework and case study for the British Columbia Central Interior. *BC Journal of Ecosystems and Management* 12(1):7-35. http://journals.sfu.ca/forrex/index.php/jem/article/view/89

Kittel, T.G.F., B.B. Baker, J.V. Higgins, and J.C. Haney. 2011. Climate vulnerability of ecosystems and landscapes on Alaska's North Slope. *Regional Environmental Change* 11:S249–S264. http://dx.doi.org/10.1007/s10113-010-0180-y

Kittel, T. 2009. *The Development and Analysis of Climate Datasets for National Park Science and Management: A Guide to Methods for Making Climate Records Useful and Tools to Explore Critical Questions*. Natural Resource Report. National Park Service, Inventory & Monitoring Program. https://irma.nps.gov/DataStore/Reference/Profile/2169763

Kittel, T.G.F., et al. 2004. The VEMAP Phase 2 bioclimatic database. I: A gridded historical (20th century) climate dataset for modeling ecosystem dynamics across the conterminous United States. *Climate Research* 27:151-170. http://dx.doi.org/10.3354/cr027151

Kittel, T.G.F., P.E. Thornton, J.A. Royle, and T.N. Chase. 2002. Climates of the Rocky Mountains: Historical and Future Patterns. Chapt. 4, in: J. Baron (ed.). *Rocky Mountain Futures: An Ecological Perspective*. Island Press.

Kittel, T.G.F., W.L. Steffen, and F.S. Chapin, III. 2000. Global and regional modeling of Arctic-boreal vegetation distribution and its sensitivity to altered forcing. *Global Change Biology* 6(S1):1-18. http://dx.doi.org/10.1046/j.1365-2486.2000.06011.x