Matthew M. Kling

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RESEARCH

I investigate how climate shapes the geographic distributions of genes, species, and ecosystems, and how this understanding can inform biodiversity conservation in the face of climate change. I primarily study plants using big data.

EDUCATION

PhD, Integrative Biology *expected 2020*
University of California, Berkeley
Advisor: David Ackerly

BA, Conservation Biology & Environmental Studies *2005*
Middlebury College
Advisors: Stephen Trombulak & Andrea Lloyd

EMPLOYMENT

Graduate Student Instructor—UC Berkeley	*2019–2020*
Consultant in Global Change Biology—NatureServe	*2015–2019*
Bioclimate Analyst—NatureServe	*2013–2015*
Science Analyst—Brighter Planet	*2008–2013*
Supervisory Biologist—Institute for Wildlife Studies	*2007–2008*
Canid Ecology Crew Leader—Yellowstone Ecol. Rsrch. Center	*2005–2006*
Plant Ecology Technician—US Geological Survey	*2005*
Ungulate Ecology Technician—National Park Service	*2005*
Environmental Intern—Administracion Ambiental Cooperativa Chilena	*2004*
Research Assistant—USDA National Wildlife Research Center	*2002*

AWARDS & FELLOWSHIPS

NSF Graduate Research Fellow ($102,000 + tuition)	*2015–2020*
Berkeley Fellow ($60,000 + tuition)	*2015–2020*
NSF NRT Data Science Fellow	*2015–2017*
USGS-NatureServe EcoInforma student app award ($2000 travel)	*2015*
EPA Apps for the Environment (National runner-up)	*2011*
Departmental High Honors & *Magna Cum Laude*, Middlebury College	*2005*

LANGUAGES & SKILLS

Spoken: English (native), French (adv.), Spanish (adv.), German (beg.)
Programming: R (adv.), Python (int.), LaTeX(int.), git (int.)
Geographic information systems: ArcGIS, R
Design software: Illustrator, InDesign, Photoshop

JOURNAL ARTICLES

Kling, M., and D. Ackerly. Global wind patterns and the resilience of wind-dispersed species to climate change. *In review.*

Kling, M., S. Auer, P. Comer, D. Ackerly, and H. Hamilton. Multiple axes of vegetation vulnerability to climate change. *In review.*

Oldfather, M., **M. Kling**, S. Sheth, N. Emery, and D. Ackerly. Range Edges in Heterogeneous Landscapes: Incorporating Realistic Landscapes into Range Dynamics. *In review.*

Stevens, J., **M. Kling**, D. Schwilk, M. Varner, and J. Kane. Biogeography of fire regimes in western US conifer forests: a trait-based approach. *In review.*

Ackerly, D., **M. Kling**, M. Clark, P. Papper, M. Oldfather, A. Flint, and L. Flint. Topoclimates and Biotic Responses to Climate Change: Which locations on the landscape will be most sensitive? Frontiers in Ecology and the Environment: *in press.*

Comer, P., J. Hak, M. Reid, S. Auer, K. Schulz, H. Hamilton, R. Smyth, and **M. Kling**. Assessing climate change vulnerability of major vegetation types of the western interior United States. Land 8(7): 108

Skelton, R., Anderegg, L., Papper, P., Dawson, T., **Kling, M.**, Thompson, S., Diaz, J., Reich, E., and D. Ackerly (*2019*). No local adaptation in leaf or stem xylem vulnerability to embolism, but consistent vulnerability segmentation in a North American oak. New Phytologist, doi: 10.1111/nph.15886

Daru, B., **M. Kling**, E. Meineke, and A. van Wyk (*2019*). Temperature controls phenology in continuously flowering *Protea* species of subtropical Africa. Applications in Plant Sciences 7(3): e1232

Kling, M., B. Mishler, B. Baldwin, A. Thornhill, and D. Ackerly (*2018*). Facets of phylodiversity: evolutionary diversification, divergence, and survival as conservation targets. Philosophical Transactions of the Royal Society B 374: 20170397

Morueta-Holme, N., M. Oldfather, R. Olliff-Yang, A. Weitz, C. Lefine, **M. Kling**, E. Riordan, C. Merow, S. Sheth, A. Thornhill, and D. Ackerly (*2018*). Best practices for reporting climate data in ecology. Nature Climate Change 8:92–94

Thornhill, A., B. Baldwin, W. Freyman, S. Nostratinia, **M. Kling**, N. Morueta-Holme, T. Madsen, D. Ackerly, and B. Mishler (*2017*). Spatial phylogenetics of the native California flora. BCM Biology 15(1): 96

Hammerson, G., **M. Kling**, M. Harkness, M. Ormes, and B. Young (*2017*). Strong geographic and temporal patterns in the conservation status of North American bats. Biological Conservation 212: 144–152

Baldwin, B., A. Thornhill, W. Freyman, D. Ackerly, **M. Kling**, N. Morueta-Holme, and B. Mishler (*2017*). Species richness and endemism in the native flora of California. American Journal of Botany, 104(3): 487–501

Sterner, R., **M. Kling**, S. Schwiff, and D. Slate (*2003*). Oral rabies vaccination: reducing economic uncertainty via response surface analysis. Proceedings of the 10th Wildlife Damage Management Conference (K. Fagerstone, G. Witmer, Eds).

INVITED TALKS

Kling, M. (*2019, Oct*). California plant conservation gaps: an evolutionary perspective. Talk presented at the Half-Earth Day symposium, Berkeley, California.

Kling, M. (*2019, Sep*). Seeds of change: climate-smart seed collection for ecological restoration. Talk presented at the Bay Area National Park Science Symposium, San Francisco, California.

Kling, M. (*2019, May*). Save the trees: informing conservation planning with multiple facets of phylodiversity. Invited talk presented at Hennig XXXVIII symposium, Berkeley, California.

CONTRIB. TALKS

Kling, M. and D. Ackerly (*2019, Jul*). Winds of change: wind connectivity, gene flow, and climate adaptation in trees. Talk presented at Species on the Move, Kruger, South Africa.

Kling, M., B. Mishler, B. Baldwin, A. Thornhill, and D. Ackerly (*2018, Sep*). Conserving the evolutionary diversity of the California flora. Talk presented at Botany Lunch seminar series, Berkeley, California.

Kling, M., B. Mishler, B. Baldwin, A. Thornhill, and D. Ackerly (*2018, Jul*). Conserving the evolutionary diversity of the California flora. Talk presented at the North American Congress for Conservation Biology, Toronto, Canada.

Kling, M., B. Mishler, B. Baldwin, A. Thornhill, and D. Ackerly (*2018, Jun*). Future priorities for conserving the evolutionary diversity of the California flora. Talk presented at the Digital Data in Biodiversity Research Conference, Berkeley, CA.

Kling, M. (*2016, Dec*). Multidecadal historic trends in California's coastal fog. Poster presented at the American Geophysical Union, San Francisco, CA.

Kling, M., E. Burns, P. Cowan, and H. Hamilton (*2016, Sept*). The coast redwood climate envelope: 20th-century trends across space and time. Talk presented at the Coast Redwood Science Symposium, Eureka, CA.

Kling, M., M. Fernandez, and H. Hamilton (*2014, Jun*). The biogeography of recent climate change in coast redwood ecosystems. Poster presented at the Smithsonian Botanical Symposium, Washington, DC.

Kling, M., M. Fernandez, and H. Hamilton (*2014, Jul*). Spatiotemporal patterns in greater sage-grouse exposure to recent climate change. Talk presented at the Society for Conservation GIS Conference, Monterey, CA.

GRAY LITERATURE

EcoAdapt (*2014, multiple authors*). A Climate Change Vulnerability Assessment for Resources of Nez Perce-Clearwater National Forests. Version 3.0. EcoAdapt, Bainbridge Island, WA.

Bureau of Land Management (*2014, multiple authors*). Madrean Archipeligo Rapid Ecoloregional Assessment. US BLM, Washington, DC.

Kling, M. and I. Hough (*2011*). Air travel carbon and energy efficiency: case studies, best practices, industry trends, airline rankings. Brighter Planet, San Francisco, CA. Presented at the 2012 Conference of the Institute for Computational Sustainability, Copenhagen, Denmark.

Kling, M. and I. Hough (*2012*). Hotel carbon and energy efficiency: chain rankings, industry trends, efficiency drivers, market patterns. Brighter Planet, San Francisco, CA

Kling, M. and I. Hough (*2011*). Employee Engagement in Sustainability. Brighter Planet, San Francisco, CA

Kling, M. and I. Hough (*2010*). The American carbon foodprint: understanding your food's impact on climate change. Brighter Planet, San Francisco, CA

Kling, M. (*2005*). The ecophysiology of alpine treeline: spatial patterns in balsam fir (*Abies balsamea*) growth and water relations on Mount Abraham, Vermont. Undergraduate senior honors thesis, Middlebury College.