

## Jeremy L. Weiss, PhD

School of Natural Resources and the Environment, University of Arizona  
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### HIGHER EDUCATION

- 2012            **Doctor of Philosophy**, University of Arizona
- major: geosciences
  - minor: natural resources
  - advisor: Dr. Jonathan T. Overpeck
  - thesis: "Spatiotemporal Measures of Exposure and Sensitivity to Climatic Variability and Change: The Cases of Modern Sea Level Rise and Southwestern U.S. Bioclimate"
- 2002            **Master of Science**, University of New Mexico
- major: earth and planetary sciences
  - foci: climate science; ecosystem science; geographic information systems (GIS)
  - advisor: Dr. David S. Gutzler
  - thesis: "Relating Vegetation Variability to Meteorological Variables at the Sevilleta National Wildlife Refuge, New Mexico"
- 1998            **Bachelor of Science**, Arizona State University, *summa cum laude*
- major: botany
  - minors: horticulture; Spanish; statistics

### HONORS & AWARDS

- 2012            Galileo Circle Scholar
- 2010            Tony Gonzales Excellence in GIS Scholarship
- 2009            William G. McGinnies Scholarship in Arid Lands Studies
- 2002            Master of Science degree examination passed with distinction
- 2002            Geology Alumni Scholarship
- 2001            Jerry Harbour Memorial Scholarship
- 1998            Outstanding Graduating Senior Award, Department of Plant Biology
- 1997-1998     Mike Krantz Memorial Fund Scholarship
- 1996-1998     Dougherty Foundation Scholarship Award
- 1995            Phi Kappa Phi Honor Society
- 1993-1996     Award for Outstanding Scholarship
- 1993-1996     Hudson Achievement Award
- 1993-1996     Northern Arizona University Academic Award

### PROFESSIONAL EXPERIENCE

- 2014-present    **Climate and Geospatial Extension Scientist**, University of Arizona Cooperative Extension, Tucson AZ
- Develop objective and automated techniques in MATLAB to extract and analyze targeted weather events from large, multidimensional atmospheric model datasets
  - Build database of observational and gridded weather data, and evaluate historical variations of weather extremes and thresholds relevant to agriculture and wildland vegetation in GIS, MATLAB, and R environments
  - Increase user numbers and improve user support for geospatial web application utilizing remote sensing data and drought information

- 2013-2014 **Research Scientist**, University of Arizona, Tucson AZ
- Supported interdisciplinary science team in assisting three U.S. Department of Defense installations with environmental risk identification and scientific data needs, including asset vulnerability to erosion and floods
  - Constructed geodatabase of biophysical and land management data to assist project assessing and supporting drought monitoring needs on the Hopi and Navajo Nations
- 2012-2014 **Scientific and Technical Consultant**, Tucson AZ
- Performed geospatial analyses of flood-prone areas to support National Oceanic and Atmospheric Administration Fisheries with development of economic and social indicators for coastal communities
  - Constructed a geodatabase and map application of biophysical and land management data for the U.S. Geological Survey to aid scientists and practitioners in the Southwest U.S. who develop and utilize climate information
- 2002-2013 **Senior Research Specialist**, University of Arizona, Tucson AZ
- Performed risk analyses of environmental systems to sea level rise and weather hazards such as drought in MATLAB and GIS software, leading five publications and developing two popular datasets and first-generation geospatial web applications
  - Launched new focus of research group integrating traditional analysis techniques from the atmospheric and related sciences with geospatial data modeling to investigate climatic hazards and their impacts
  - Managed scientific laboratory with 10 graduate students and four undergraduate assistants, optical and x-ray analytical machines, sample archives, and computing resources
  - Designed and built equipment and sampling instruments for collecting lake sediments in Galápagos, Ecuador
  - Fulfilled over 250 media interviews and figure requests in English and Spanish
- 2000-2002 **Research Assistant**, University of New Mexico, Albuquerque NM
- Designed a database and carried out analysis of weather variations and their effects at a U.S. National Wildlife Refuge, utilizing publicly available observational, remote sensing, and geospatial data
  - Led two peer-reviewed scientific journal articles describing correlation and time series analyses
- 1999-2000 **Biologist**, Taschek Environmental Consulting, Albuquerque NM
- Performed over 10 biological surveys in the context of governmental regulations and guidelines, communicating results with state and federal agencies
  - Determined habitat presence of endangered and threatened species under the Endangered Species Act, and delineated wetlands as per United States Army Corps of Engineers guidelines
- 1998-1999 **Research Technician**, University of Arizona Cooperative Extension, Phoenix AZ
- Assisted with installation and maintenance of six agricultural field research projects, recording plant growth, testing fruit sample acidity, and supervising harvesting crews
- 1997 **Research Assistant**, Arizona State University, Tempe AZ
- Recorded and organized topographical and botanical data from three studies of desert riparian areas

## PUBLICATIONS

### Peer-reviewed

9. Holmgren CA, Betancourt JL, Peñalba MC, Delgadillo J, Zuravnsky K, Hunter KL, Rylander KA, **Weiss JL** (2014) Evidence against a Pleistocene desert refugium in the Lower Colorado River Basin. *Journal of Biogeography*, doi:10.1111/jbi.12337

8. Parris A, Bromirski P, Burkett V, Cayan D, Culver M, Hall J, Horton R, Knuuti K, Moss R, Obeysekera J, Sallenger A, **Weiss J** (2012) Global Sea Level Rise Scenarios for the US National Climate Assessment. NOAA Tech Memo OAR CPO-1, 37pp, [http://cpo.noaa.gov/sites/cpo/Reports/2012/NOAA\\_SLR\\_r3.pdf](http://cpo.noaa.gov/sites/cpo/Reports/2012/NOAA_SLR_r3.pdf)
7. \***Weiss JL**, Betancourt JL, Overpeck JT (2012) Climatic limits on foliar growth during major droughts in the Southwestern USA. *Journal of Geophysical Research*, 117, G03031, doi:10.1029/2012JG001993
6. Strauss BH, Ziemiński R, **Weiss JL**, Overpeck JT (2012) Tidally-adjusted estimates of topographic vulnerability to sea level rise and flooding for the contiguous United States. *Environmental Research Letters* 7, 014033 doi:10.1088/1748-9326/7/1/014033
5. \***Weiss JL**, Overpeck JT, Strauss B (2011) Implications of recent sea level rise science for low-elevation areas in coastal cities of the U.S.A. *Climatic Change* 105, 635-645, doi: 10.1007/s10584-011-0024-x
4. \***Weiss JL**, Castro CL, Overpeck JT (2009) Distinguishing pronounced droughts in the Southwestern United States: Seasonality and effects of warmer temperatures. *Journal of Climate* 22, 5918-5932 doi:10.1175/2009JCLI2905.1
3. **Weiss JL**, Overpeck JT (2005) Is the Sonoran Desert losing its cool? *Global Change Biology* 11, 2065-2077, doi:10.1111/j.1365-2486.2005.01020.x
2. \***Weiss JL**, Gutzler DS, Allred Coonrod JE, Dahm CN (2004) Long-term vegetation monitoring with NDVI in a diverse semiarid setting, central New Mexico, U.S.A. *Journal of Arid Environments* 58, 248-271, doi:10.1016/j.jaridenv.2003.07.001
1. \***Weiss JL**, Gutzler DS, Allred Coonrod JE, Dahm CN (2004) Seasonal and interannual relationships between vegetation and climate in Central New Mexico, U.S.A. *Journal of Arid Environments* 57, 507-534, doi:10.1016/S0140-1963(03)00113-7

#### Other

4. **Weiss J** (2014) Potential Changes in Future Regional Climate and Related Impacts – A Brief Report for the Central New Mexico Climate Change Scenario Planning Project. U.S. DOT-Volpe National Transportation Systems Center
3. **Weiss JL**, Overpeck JT, Cole JE (2012) Warmer led to drier: Dissecting the 2011 drought in the Southern U.S. *Southwest Climate Outlook* 11(3), 3-4, <http://climas.arizona.edu/feature-articles/march-2012>
2. Jordan E, \***Weiss J** (2011) Identifying public perceptions of weather- and climate-related risks in southeast Arizona. A report for the Climate Assessment for the Southwest (CLIMAS), 14pp
1. Overpeck JT, **Weiss JL** (2009) Projections of future sea level becoming more dire. *Proceedings of the National Academy of Sciences of the United States of America* 106, 21461-21462, doi:10.1073/pnas.0912878107

#### Work in progress

6. Sagarin R, Falk D, Garfin G, Haworth A, Jacobs K, O'Connor C, Overpeck J, **Weiss J**, Zuniga-Teran A (in preparation for *Frontiers in Ecology and the Environment*) A new mission: Climate adaptation engagement with the Department of Defense
5. **Weiss J**, Crimmins M, Overpeck J (in review for Machine Learning and Data Mining Approaches to Climate Science) Developing an Event Database for Cut-off Low Climatology over Southwestern North America
4. Sagarin R, Baglee A, Falk D, Galayda J, Garfin G, Haworth A, Khosa B, McNeil S, Overpeck J, Troch P, **Weiss J** (in revision) Climate Risk on Southwest Department of Defense Facilities. Strategic Environmental Research and Development Program (SERDP)
3. Crimmins MA, **Weiss JL** (in preparation for *Journal of Applied Meteorology and Climatology*) Variability of daily precipitation extremes in the Four Corners region of the southwestern United States
2. Crimmins MA, **Weiss JL** (in preparation for the Hopi Department of Natural Resources and the Navajo Nation Water Resources Management Branch) Regional Climatology for the Four Corners Region

1. Falk D, Quijada-Mascareñas A, McClaran M, Koprowski J, Culver M, Drake S, Marsh S, van Leeuwen W, Skroch M, **Weiss JL** (in preparation for *Open Journal of Ecology*) Sky Islands as model systems for effects of climate change on ecology and evolution

\* Publication is based largely on work done as a graduate student

## GRANTS

### Funded

4. Institute of the Environment Graduate Student Travel Award (2011), \$500
3. Graduate and Professional Student Council Travel Grant (2011), \$500
2. Institute of the Environment Graduate Student Travel Award (2009), \$500
1. Graduate and Professional Student Council Travel Grant (2009), \$500

## TEACHING

### Graduate Student Mentor (while at previous University of Arizona position)

Allison Drake (MS 2007)

### Guest Lecturer

GIS Tools Graduate Student Workshop (Frew, University of California Santa Barbara, Spring 2013)

Science, Policy, and Politics of Global Climate Change (Bull, OLLI, University of Arizona, Spring 2012)

Introductory Geology II: Historical Geology (Gest, GLG102IN, Pima College, Fall 2007)

## SCHOLARLY PRESENTATIONS

20. **Weiss J**, Crimmins M, Overpeck J (2014) "Developing an Event Database for Cut-off Low Climatology over Southwestern North America". 4<sup>th</sup> International Workshop on Climate Informatics, Boulder CO. Poster presentation
19. Crimmins M, **Weiss J**, Ferguson D, Meadow A, Faulstich H, Kimbrough A (2013) "Tracking Hydroclimatic Extremes across Tribal Lands in the Four Corners Region". 12<sup>th</sup> Biennial Conference of Science and Management on the Colorado Plateau, Flagstaff AZ. Oral presentation
18. **Weiss JL** (2013) *invited* "Recent Variations in Low-temperature and Moisture Constraints on Vegetation in the Southwestern U.S.". CLIMAS Colloquium, University of Arizona, Tucson AZ. Oral presentation
17. **Weiss JL** (2013) *invited* "Recent Variations in Low-temperature and Moisture Constraints on Vegetation in the Southwestern U.S.". Spring 2013 Water Seminar Series, University of Nebraska-Lincoln, Lincoln NE. Oral presentation
16. Parris A, Obeysekera J, Knuuti K, Moss RH, Horton RM, **Weiss JL** (2012) "Scenario Planning for Coastal Adaptation". 2012 Fall Meeting of the American Geophysical Union, San Francisco CA. Poster presentation
15. **Weiss JL** (2012) *invited* "Climate Model Data for Climate Change VIA". NASA SEDAC/UNEP PROVIA Workshop on Data Gaps for Research and Action on Climate Change Vulnerability, Impacts, and Adaptation, Tucson AZ. Oral presentation
14. **Weiss JL**, Overpeck JT, Betancourt JL (2011) "Spatiotemporal Transitions between Foliar Phenological Limits of Suboptimal Temperatures and Evapotranspirational Demand in Woodlands and Forests of the Southwestern U.S.A. under a Warming Climate". 2011 Fall Meeting of the American Geophysical Union, San Francisco CA. Poster presentation
13. **Weiss JL** (2010) "Using Spatial Analysis and Maps to Communicate Potential Risks of Climate Change". IAI NCAR Colloquium on Knowledge Innovation at the Science-Policy Interface, San José Costa Rica. Oral presentation
12. **Weiss JL**, Ault T, Betancourt JL, Schwartz MD, Macalady A, Pederson GT, Castro CL, Overpeck JT (2009) "The Post-1984 Step Change in Spring Temperatures and Spring Onset in the Western U.S.A.:

- Proximal and Distant Drivers”. 2009 Fall Meeting of the American Geophysical Union, San Francisco CA. Oral presentation
11. **Weiss JL**, Overpeck JT, Betancourt JL (2009) “The Changing Character of Phenology, Drought, and the Seasons in the Southwestern U.S.A.”. GeoDaze 2009, 37<sup>th</sup> Annual Geoscience Symposium, Tucson AZ. Poster presentation
  10. **Weiss JL**, Castro CL, Overpeck JT (2009) “Seasonal Effects of Warmer Temperatures during Drought in the Southwestern U.S.A.”. GeoDaze 2009, 37<sup>th</sup> Annual Geoscience Symposium, Tucson AZ. Oral presentation
  9. **Weiss JL**, Overpeck JT, Betancourt JL (2008) “The Changing Character of Phenology, Drought, and the Seasons in the Southwestern U.S.A.”. 2008 Fall Meeting of the American Geophysical Union, San Francisco CA. Poster presentation
  8. **Weiss JL**, Overpeck JT, Betancourt JL (2008) “The Changing Character of Phenology, Drought, and the Seasons in the Southwestern U.S.A.”. Characterizing the Phenology of Southwest Landscapes, 2<sup>nd</sup> Annual Symposium of the National Phenology Network (NPN) and the Southwest U.S. Region of the American Society of Photogrammetry and Remote Sensing (ASPRS), Tucson AZ. Oral presentation
  7. **Weiss JL**, (2007) *invited* “Sea Level Rise Modeling for the Caribbean”. Developing an Approach for Adaptation to Climate Change in the Insular Caribbean: The Hawksbill Sea Turtle as an Indicator Species, WWF and MacArthur Foundation workshop, Miami FL. Oral presentation
  6. **Weiss JL**, Overpeck JT (2007) “Climate and Phenology during the 1950s and 2000s Droughts in the Southwestern U.S.A.”. Ninth Biennial Conference of Research on the Colorado Plateau, Flagstaff AZ. Poster presentation
  5. Garfin GM, Novak R, **Weiss J** (2007) “Projected Climate Changes and Their Potential Impacts on Native American Lands of the Southern Colorado Plateau”. Ninth Biennial Conference of Research on the Colorado Plateau, Flagstaff AZ. Oral presentation
  4. **Weiss JL**, Overpeck JT (2007) “Climate and Phenology during the 1950s and 2000s Droughts in the Southwestern U.S.A.”. ASPRS ‘Towards a Southwest Phenology Network’ symposium, Tucson AZ. Poster presentation
  3. **Weiss JL**, Overpeck JT (2007) “‘Is the Sonoran Desert Losing Its Cool?’ and Other Global Climate Change Questions for Southwestern Deserts”. Sixth Conference on Research and Resource Management in the Southwestern Deserts: Borders, Boundaries and Time Scales, Tucson AZ. Oral presentation
  2. Garfin G, Morrill J, Comrie A, **Weiss J** (2005) “A Tale of Two Droughts: Changing Temperatures and Southwestern Droughts”. Eighth Biennial Conference of Research on the Colorado Plateau, Flagstaff AZ. Poster presentation
  1. Garfin GM, Crimmins MA, **Weiss JL** (2005) “A Brief History of Southwest Climate Changes and a Glimpse at the Future”. Eighth Biennial Conference of Research on the Colorado Plateau, Flagstaff AZ. Oral presentation

## PROFESSIONAL ACTIVITIES

- |      |   |
|------|---|
| 2011 | <b>selected participant</b> , NCAR ASP Colloquium on Statistical Assessment of Extreme Weather Phenomena under Climate Change, Boulder CO |
| 2010 | <b>selected participant</b> , IAI NCAR Colloquium on Knowledge Innovation at the Science-Policy Interface, San José Costa Rica            |

## PROFESSIONAL SERVICE & OUTREACH

### International/National

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| 2014 | <b>invited presenter</b> , Central New Mexico Climate Change Scenario Planning Project   |
| 2013 | <b>invited presenter</b> , Central New Mexico Climate Change Scenario Planning Project   |
| 2013 | <b>invited reviewer</b> , Climate Risk Information 2013, Observations, Climate Change Projections, and Maps, New York City Panel on Climate Change |

- 2013 **invited panelist**, Carsey-Wolf Center Environmental Media Initiative, Critical Issues in America, Figuring Sea Level Rise: Interactive Visioning, University of California Santa Barbara
- 2011-2012 **invited panelist**, Sea Level Change Scenarios for US National Climate Assessment, Washington DC
- 2012 **invited blogger**, Southwest Climate Change Network (southwestclimatechange.org)
- 2011 **invited blogger**, Skeptical Science (skepticalscience.com)
- 2009 **invited participant**, Ad Hoc Planning Committee for Science Workshop on Sea Level Rise in Florida, Florida Institute for Conservation Science
- 2007 **invited participant**, Developing an Approach for Adaptation to Climate Change in the Insular Caribbean: The Hawksbill Sea Turtle as an Indicator Species, WWF and MacArthur Foundation workshop, Miami FL
- 2006 **invited analyst**, species target list for National Phenology Network Implementation Team, Tucson AZ

### State/Local

- 2013 **invited presenter**, White Mountains Land Trust/Alliance climate scenario planning workshop, Show Low AZ
- 2013 **invited presenter**, Sky Island Alliance climate change adaptation workshop, Tucson AZ
- 2011-2012 STEM workshop facilitator, Arizona K12 Center, Phoenix AZ
- 2011 climate change analyst, City of Tucson's Climate Change Committee, Tucson AZ
- 2011 climate change analyst, Sky Island Alliance, Tucson AZ
- 2007 **invited presenter**, Trinity Presbyterian community workshop, Tucson AZ
- 2007 **invited presenter**, SAMEC Solar Science Workshop, Tucson AZ

### University

- 2014 poster judge, GeoDaze 42<sup>nd</sup> Annual Geoscience Symposium
- 2013 reviewer, CLIMAS Climate and Society Graduate Fellows Program applications
- 2013 **invited guest**, Southwest Climate Podcast, Southwest Climate Change Network
- 2011 reviewer, University of Arizona Graduate and Professional Student Council Travel Grant applications

### Media interviews and figure requests (selected from over 250)

Arizona Public Media, *Audubon Magazine*, *BioScience*, *ClimateWire*, *Cronkite Journalism School*, *ESRI News*, *LA Times*, *National Geographic*, *The New York Times*, *Rolling Stone*, *Thomson Reuters*, *Univision*

### Reviewer (journals)

*Climatic Change*, *Geophysical Research Letters*, *Global Change Biology*, *International Journal of Climatology*, *Journal of Arid Environments*, *Michigan Journal of Sustainability*, *Nature Climate Change*, *Photogrammetric Engineering & Remote Sensing*

### PUBLIC SERVICE

- 2005-2009 volunteer, Sonoran Desert Weedwackers, Pima County AZ
- 2004-2005 volunteer, Tucson Audubon Society, Pima County AZ

### PROFESSIONAL AFFILIATIONS & SOCIETIES

- 2008-present American Geophysical Union
- 2005-present Climate Assessment for the Southwest (CLIMAS)

### TECHNICAL SKILLS

- Programming in MATLAB, R, Python, SQL, XML, and HTML
- ESRI ArcGIS Desktop 10/Server 10 and ArcGIS 9, cartographic design principles, spatial analysis

- Handling of observational, modeled, remotely sensed, and geospatial data from public and other sources
- Statistics and probability, including regression, EOF analysis, time series analysis, and distribution functions
- Microsoft Access, Microsoft Office, SigmaPlot, Adobe Creative Suite, graphic design
- Mac OSX, Windows 7, Windows Server 2008 R2, Linux

### **LANGUAGE SKILLS**

- Reading, writing, and speaking fluency in English and proficiency in Spanish

### **FIELDWORK EXPERIENCE**

2009	dendrochronology sampling, AZ USA
2005	lake coring expedition to Galápagos, Ecuador
1999-2000	biological identification and wetland delineation, NM and TX USA
1998-1999	agricultural research projects, AZ USA
1997	surveying and botanical identification, AZ USA