

Biographical Sketch

Gregg M. Garfin

Professor and Extension Specialist

The University of Arizona

School of Natural Resources and the Environment (SNRE)

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A. PROFESSIONAL PREPARATION

<u>College/University</u>	<u>Location</u>	<u>Major</u>	<u>Degree & Year</u>
University of Massachusetts	Amherst, MA	Geography and Geology	B.S. 1989
University of Massachusetts	Amherst, MA	Geography and Geology	M.S. 1992
University of Arizona	Tucson, AZ	Geosciences	Ph.D. 1998

B. PROFESSIONAL APPOINTMENTS

University of Arizona, School of Natural Resources and the Environment
2021 to present, Professor and Extension Specialist

University of Arizona, School of Natural Resources and the Environment
2014 to 2021, Associate Professor and Associate Specialist

University of Arizona, School of Natural Resources and the Environment
2010 to 2014, Assistant Professor and Assistant Specialist

University of Arizona, Udall Center for Studies in Public Policy
2016-present, Faculty Associate

University of Arizona, Laboratory of Tree-Ring Research
2010 to present, Affiliated Faculty

University of Arizona, Arizona Institute for Resilience (*formerly Institute of the Environment*)
2007 to present, Director of Science Translation and Outreach

University of Arizona, Department of Geography and Regional Development
2005 to present, Affiliated Faculty

University of Arizona, Climate Assessment for the Southwest (CLIMAS)
2017-present, Affiliate
2007 to 2016, Investigator
2003 to 2007, Program Manager and Investigator
2000 to 2003, Assistant Staff Scientist

C. PRODUCTS / PUBLICATIONS (20)

1. Ro, B., & **Garfin, G.** 2023. Participatory risk governance for Seoul, South Korea's flood risk management. *International Journal of Disaster Risk Science*. (*Accepted*)
2. Adeel, Z., Bakkensen, L., Cabrera-Rivera, O., Franco, E., **Garfin, G.M.**, McPherson, R.A., Méndez, K. and Wen, X., 2023. Challenges in and Opportunities for International Collaboration: Costing Flood Damages and Losses across Canada, Mexico, and the United States. *Bulletin of the American Meteorological Society*. <https://doi.org/10.1175/BAMS-D-21-0141.1>

3. Ro, B., & **Garfin, G.** 2023. Building urban flood resilience through institutional adaptive capacity: A case study of Seoul, South Korea. *International Journal of Disaster Risk Reduction* 85, 103474. <https://doi.org/10.1016/j.ijdrr.2022.103474>
4. Freimund, C. A., **Garfin, G. M.**, Norman, L. M., Fisher, L. A., & Buizer, J. L. 2022. Flood resilience in paired US–Mexico border cities: a study of binational risk perceptions. *Natural Hazards*, 1-25.
5. Zhang, W., Hari, V., S-Y Wang, S., LaPlante, M. D., **Garfin, G.**, Affram, G., & Kumar, R. (2022). Fewer troughs, not more ridges, have led to a drying trend in the Western United States. *Geophysical Research Letters*, 49(1), e2021GL097089.
6. **Garfin, G.**, Falk, D.A., O'Connor, C.D., Jacobs, K., Sagarin, R.D., Haverland, A.C., Haworth, A., Baglee, A., et al., 2021. A new mission: Mainstreaming climate adaptation in the US Department of Defense. *Climate Services*, 22, p.100230.
7. Montebalanco, A.D., Vanos, J.K., LeRoy, S., Juarez, P.M. and **Garfin, G.M.**, 2021. An evaluation of a maternal health and extreme heat exposure training. *Journal of Social, Behavioral, and Health Sciences*, 15(1), pp.31-42.
8. O'Connor, C. D., Falk, D. A., and **Garfin, G. M.** 2020. Projected climate-fire interactions drive forest to shrubland transition on an Arizona Sky Island. *Frontiers in Environmental Science*. 8: Article 137., 8, 137
9. Adeel, Z., Alarcón, A.M., Bakkensen, L., Franco, E., **Garfin, G.M.**, McPherson, R.A., Méndez, K., Roudaut, M.B., Saffari, H. and Wen, X., 2020. Developing a comprehensive methodology for evaluating economic impacts of floods in Canada, Mexico and the United States. *International Journal of Disaster Risk Reduction*, 50, p.101861.
10. Carrillo, C. M., Castro, C. L., **Garfin, G.**, Chang, H. I., Bukovsky, M. S., & Mearns, L. O. (2018). Pacific sea surface temperature related influences on North American monsoon precipitation within North American Regional Climate Change Assessment Program models. *International Journal of Climatology*, 38(11), 4189-4210.
11. Enquist, C.A.F., S.T. Jackson, **G.M. Garfin**, F.W. Davis, L.R. Gerber, J.A. Littell, J.L. Tank, A.J. Terando, T.U. Wall, et al. 2017. Foundations of translational ecology. *Frontiers in Ecology and the Environment* 15(10): 541-550.
12. Wall, T.U., E.C. McNie, and **G.M. Garfin**. 2017. Use-Inspired science: making science usable by and useful to decision makers. *Frontiers in Ecology and the Environment* 15(10): 551-559.
13. Parris, A., **G. Garfin**, K. Dow, R. Meyer, and S.L. Close (eds.). 2016. *Climate in Context: Science and Society Partnering for Adaptation*. J. Wiley and Sons, Ltd./AGU, 304 p.
14. **Garfin, G.M.**, C.A. Scott, M. Wilder, R.G. Varady, and R. Merideth. 2016. Metrics for assessing adaptive capacity and water security: common challenges, diverging contexts, emerging consensus. *Current Opinion in Environmental Sustainability* 21: 86-89. <http://dx.doi.org/10.1016/j.cosust.2016.11.007>
15. Star, J., E. Rowland, M.E. Black, C.A.F. Enquist, **G. Garfin**, C. Hawkins Hoffman, H. Hartmann, K.L. Jacobs, R.H. Moss and A.M. Waple. 2016. Supporting adaptation decisions through scenario planning: Enabling the effective use of multiple methods. *Climate Risk Management*. <http://dx.doi.org/10.1016/j.crm.2016.08.001>

16. Cross, M., P. McCarthy, **G. Garfin**, D. Gori, and C. Enquist. 2013. Accelerating climate change adaptation for natural resources in southwestern United States. *Conservation Biology* 27:4-18.
17. **Garfin, G.**, H. Hartmann, M. Crescioni-Benitez, T. Ely, J. Keck, J.W. Kendrick, K. Legg, and J. Wise. 2011. Climate-Friendly Park Employees: The Intermountain Region's climate change training assessment. *Park Science* 28(1): 30-36.
18. M. Wilder, C.A. Scott, N. Pineda Pablos, R.G. Varady, **G.M. Garfin**, and J. McEvoy. 2010. Adapting Across Boundaries: Climate Change, Social Learning, and Resilience in the U.S.-Mexico Border Region. *Annals of the Association of American Geographers* 100(4):917-928.
19. Ray, A.J., **G.M. Garfin**, M. Wilder, M. Vasquez-Leon, M. Lenart, and A.C. Comrie. 2006. Applications of Monsoon Research: Opportunities to Inform Decisionmaking and Reduce Regional Vulnerability. *Journal of Climate* 20(9):1608-1627.
20. K. Jacobs, **G.M. Garfin**, and B.J. Morehouse. 2005. Climate Science and Drought Planning: the Arizona Experience. *Journal of the American Water Resources Association* 41(2): 437-445.

Other Significant Publications (20)

1. Crisman, J.J., Keith, L, Sami, I., and **Garfin, G.** 2023. Designing *Chill City*: An interactive game supporting public learning about urban planning for extreme heat. *The Journal of Environmental Education*, DOI:10.1080/00958964.2023.2183173
2. Murveit, A.M., Delphin-Perez, S., Domingues, C., Bourque, S.D., Faulstich, S.D., **Garfin, G.M.**, Huntly, N., Meadow, A.M., Preston, V. 2023. Stories as Data: Indigenous Research Sovereignty and the “Intentional Fire” Podcast. *Environment and Planning F: Philosophy, Theory, Models, Methods and Practice*. <https://doi.org/10.1177/26349825221142293>.
3. Wen, X., A. M. A. Ferreira, L. M. Rae, H. Saffari, Z. Adeel, L. A. Bakkensen, K. Mendez Estrada, **G.M. Garfin**, R.A. McPherson, E. Franco Vargas, 2022. A Comprehensive Methodology for Evaluating the Economic Impacts of Floods: An Application to Canada, Mexico, and the United States. *Sustainability* 14(21): 14139.
4. Mandal, S.K. and **Garfin, G.M.**, 2021. Climate Change and Sustainable Urbanisation: Building Urban Water Security in a Metro City of India. In *Water Security in Asia* (pp. 443-459). Springer, Cham.
5. Guo, H., Wang, R., **Garfin, G.M.**, Zhang, A. and Lin, D., 2020. Rice drought risk assessment under climate change: Based on physical vulnerability a quantitative assessment method. *Science of The Total Environment*, 751, p.141481.
6. LeRoy, S. R., M. Friggens, **G. Garfin**, R. Gonzalez Villela, S. Havison, K. Hayhoe, S. J. Lite, M. J. Montero Martínez, J. Nielsen-Gammon, J. Renfrow, D. Rissik, J. S. Santana Sepulveda, B. (A. J.) Wickel, and M. Briggs. 2020. Adapting Your Stream Restoration Project to Climate Change. Chapter Four in M. K. Briggs and W. R. Osterkamp (eds.) *Renewing our Rivers: Stream Corridor Restoration in Dryland Regions*. Tucson, AZ: University of Arizona Press, pp. 105-168.
7. Haverland, A. and **G. Garfin**. 2019. *Toward Effective Actionable Science: Stakeholder Needs Assessment Final Report*. Tucson, AZ: Institute of the Environment, University of Arizona.

8. Barbosa, A. C., Stahle, D. W., Burnette, D. J., Torbenson, M. C., Cook, E. R., Bunkers, M. J., **Garfin, G.**, and Villalba, R. 2019. Meteorological Factors Associated with Frost Rings in Rocky Mountain Bristlecone Pine at Mt. Goliath, Colorado. *Tree-Ring Research*, 75(2), 101-115.
9. Gonzalez, P., **G.M. Garfin**, D.D. Breshears, K.M. Brooks, H.E. Brown, E.H. Elias, A. Gunasekara, N. Huntly, J.K. Maldonado, N.J. Mantua, H.G. Margolis, S. McAfee, B.R. Middleton, and B.H. Udall. 2018. Chapter 25: Southwest. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 1101-1184. doi: 10.7930/NCA4.2018.CH25
10. **Garfin, G.**, S. LeRoy, M. Muth, H. Jones, M. Ibarra Ochoa, et al. 2017. Climate Services for Coping with Climate Change, Drought, and Extreme Heat in the México-U.S. Border Region. In Montero Martinez, M.J., and O. F. Ibanez Hernandez (eds.), *La Cuenca del Río Conchos: Una Mirada desde las Ciencias ante el Cambio Climático*. Jiutepec, Morelos, Mexico: Instituto Mexican de Tecnologia del Agua, pp. 23-57. ISBN 978-607-9368-89-0.
11. **Garfin, G.**, S. LeRoy, and H. Jones. 2017. *Developing an Integrated Heat Health Information System for Long-Term Resilience to Climate and Weather Extremes in the El Paso-Juárez-Las Cruces Region*. Tucson: Institute of the Environment, 63 p. <http://doi.org/10.7289/V5930R6Q>
12. **Garfin, G.**, S. LeRoy, B. McMahan, M. Black, and B. Roh. 2016. *Preparing for High Consequence, Low Probability Events: Heat, Water & Energy in the Southwest*. Report to the U.S. Bureau of Reclamation, from the project Enhancing Water Supply Reliability. Tucson, AZ: Institute of the Environment, 30 p. DOI: 10.13140/RG.2.1.4823.3205
13. **Garfin, G.**, G. Franco, H. Blanco, A. Comrie, P. Gonzalez, T. Piechota, R. Smyth, and R. Waskom. 2014. Chapter 20: Southwest. *Climate Change Impacts in the United States: The Third National Climate Assessment*. J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 462-486. doi:10.7930/J08G8HMN.
14. **Garfin, G.**, A. Jardine, R. Merideth, M. Black, and S. LeRoy (eds.), 2013. *Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment*. Washington, DC: Island Press, 509 p.
15. Varady, R.G., C.A. Scott, M. Wilder, B. Morehouse, N. Pineda Pablos, **G.M. Garfin**, 2013. Transboundary adaptive management to reduce climate-change vulnerability in the western US–Mexico border region. *Environmental Science & Policy* 26:102-112.
16. **Garfin, G.**, N. Lee, V. Magana, R. Stewart, T. Rolfe, and J. McEvoy. 2011. International Workshop for CHANGE: Climate and Hydrology Academic Network for Governance and the Environment. *Bulletin of the American Meteorological Society* 92(8):1045-1048. doi:10.1175/2010BAMS2927.1
17. O'Connor, C.D., **G.M. Garfin**, D.A. Falk, T.W. Swetnam, 2011. Human Pyrogeography: A New Synergy of Fire, Climate and People is Reshaping Ecosystems across the Globe. *Geography Compass* 5(6): 329–350. DOI: 10.1111/j.1749-8198.2011.00428.x

18. Ellis, A., G. Goodrich, and **G. Garfin**. 2010. A Hydroclimatic Index for Examining Patterns of Drought in the Colorado River Basin. *International Journal of Climatology*. DOI: 10.1002/joc.1882.
19. Garrick, D., K. Jacobs, and **G. Garfin**. 2008. Models, Assumptions, and Stakeholders: Planning For Water Supply Variability in the Colorado River Basin. *Journal of the American Water Resources Association* 44(2): 381-398.
20. Jacobs, K., **G. Garfin** and M. Lenart. 2005. More Than Just Talk: Connecting Science and Decisionmaking. *Environment* 47(9): 6-21.

D. SYNERGISTIC ACTIVITIES (selected – Since 2011)

- University of Arizona, Climate and Sustainability Action Plan, Research Recommendations Committee (Member, 2023)
- Executive Committee in the Resilience Practice Graduate Interdisciplinary Program (GIDP) (Member, 2023-present)
- Arid Lands Resource Sciences Graduate Interdisciplinary Program, Self-Study Committee (Member, 2023-present)
- U.S. Department of Interior, Briefing for Deputy Assistant Secretary Annalise Blum, (*Liaison from CASC Directors*, 2023)
- National Academies of Science, Engineering, and Medicine, Board on Environmental Change and Society, Aligning Co-Production of Environmental Knowledge with Trust, Justice, and Equity (*Invited Panelist*, 2021)
- Intergovernmental Panel on Climate Change, Sixth Assessment Report (Reviewer, 2020)
- U.S. Fish & Wildlife Service, Gila Topminnow Species Status Assessment (*Consultant*, 2019-2020)
- Bisbee Science Lab, (*Advisory Board Member*, 2019-2021)
- University of Arizona, Arid Lands Resource Sciences GIDP Executive Committee (*Member*, 2019-present)
- USDA Southwest Climate Hub, Advisory Board (Member, 2019-present)
- Fourth California Climate Assessment (*Reviewer*, 2018)
- USGS Southwest Climate Adaptation Science Center (*University Director*, 2017-present) National Research Council/National Academies of Science Committee on Characterizing Risk in Climate Change Assessments, (*Invited participant and presenter*, 2016).
- University of Arizona, Water, Society, and Policy M.S. Program (*Director*, 2015-present) *Frontiers in Ecology and the Environment*, *Special Issue Guest Editor* (2016-2017) *Current Opinion in Environmental Sustainability*, *Special Issue Guest Editor* (2015-2016)
- University of Arizona, Center for Climate Adaptation Science and Solutions, Core Team (Member, 2014-present)

North American Climate Services Partnership, Rio Grande-Rio Bravo Regional Pilot Area (**Co-Lead**, 2014-present)
University of Arizona, Arts, Environment and Humanities Network, (**Director**, 2014-2017)
MaRIUS Drought Project, International Advisory Board, University of Oxford (**Member**, 2014-2016)
Journal of Extension, **Committed Reviewer**, 2014-2022
City of Tucson Climate Change Committee (Member, 2009-2015; **Co-chair**, 2016-2017)
U.S. CLIVAR Panel on Prediction, Predictability and Application Interface (Member, 2010-2014; **Co-chair**, 2014-2015)
North American CORDEX, Executive Committee (**Member**, 2013-2015)
Environmental Science and Policy, **Special Issue Guest Editor** (2011-2013)
Southern Climate Impacts Planning Program, Advisory Board, (**Member**, 2011-2016)
National Research Council/National Academies of Science Committee on A National Strategy for Advancing Climate Modeling. (**Invited participant and presenter**, 2011).
Forests, Woodlands, and Climate E-Extension Community of Practice (**Member**, 2009-2014)

E. AWARDS (Since 2011)

2020, *2020 Fellow, American Association for the Advancement of Science*, Section on Societal Impacts of Science and Engineering
2018, *Global Initiative for Academic Networks (GLAN) Visiting Fellow*, Ministry of Human Resource Development, Government of India, via National Institute of Technology, Patna, Bihar, India
2018, *Letter of Thanks for Service to National Climate Assessment*, Dr. David Reidmiller (NCA Director), U.S. Global Change Research Program
2017, *Letter of Thanks for Service to the City of Tucson Climate Change Committee* (2009-2017; end of 8-year statute of limitations), City of Tucson
2017, *Leadership acknowledgment*, NOAA National Heat Health Information System
2013, *Service Award*, University of Arizona, School of Natural Resources and the Environment
2012, *Innovative Program Gold Award*, Climate and Natural Resource Extension, Association of Natural Resources Extension Professionals
2012, *CALS Outstanding Team Award*, College of Agriculture and Life Sciences Environment and Sustainability Extension Signature Program Team