

## LIST OF OUTPUTS

*Resulting from*

**MOVING FORWARD  
Adaptation and Resilience to Climate Change, Drought, and Water Demand in the Urbanizing  
Southwestern United States and Northern Mexico**

Supported by the National Oceanic and Atmospheric Administration  
Sectoral Applications Research Program  
NOAA/SARP Award # NA08OAR4310704  
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*and*

**INFORMATION FLOWS AND POLICY  
Use of Climate Diagnostics and Cyclone Prediction for Adaptive Water-Resources Management  
Under Climatic Uncertainty in Western North America**

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And

University of Arizona (UA)

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## PUBLICATIONS

### 2011 - In Progress

de Raga, G., C.A. Scott, R.G. Varady, B. Luckman, F. Meza, E. Montaña. Author-team comprising multiple IAI project PIs (led . In preparation. Climate risk and water security in the Americas. *For submission to Ambio, or Environment.*

Campbell, A., and **C.A. Scott**. In preparation. Water reuse policy: A decade of residential reclaimed water use in the Southwest United States. *For submission to Environmental Science & Policy.*

Celio, M., **C.A. Scott**. In preparation. Social inequalities and adaptation to climate change: lessons from irrigated agriculture in Andhra Pradesh, South India. *Society and Natural Resources.*

Cross, M., P. McCarthy, **G. Garfin**, D. Gori, C. Enquist. In preparation. Embracing change: climate change adaptation planning for landscapes of the southwestern United States. For submission to *Conservation Biology.*

de Gouvello, B., and **C.A. Scott** (guest editors). In preparation. Manuscripts in review for special issue "Water Governance: The Public-Private Debate." *Water International.*

**Diaz-Caravantes, R.**, and **M. Wilder**. In preparation. Water, Cities, and Peri-Urban Vulnerabilities. For submission to *Geoforum.*

**Garfin, G.**, and **A. Ray** (eds). In preparation. *Climate Research* special issue "Climate Change at the U.S.-Mexico Border."

**Garfin, G.**, **C.A. Scott**, **Coles, A.R.** In preparation. Weather, climate, and water: an assessment of vulnerability and communication on the U.S.-Mexico border. *For submission to Weather, Climate, and Society.*

**Garfin, G.**, **C.A. Scott**, **M. Wilder**, **R.G. Varady**, **N. Pineda**, **J. McEvoy**, **L. Farfan**, **R. Diaz-Caravantes**, **J. Slack**. Submitted, in review. Building Capacity for Adaptation to Climate Change in Arid North America, at the Nexus Between Water, Energy and Environment. Abstract submitted to World Climate Research Programme Open Science Conference, October 2011.

**Garfin, G.**, **R.G. Varady**, and **P. Romero-Lankao**, eds. In preparation. Special issue of *Environmental Science and Policy*, "Rethinking Integrated Assessments and Management Projects in the Americas."

Gerlak, A., and **M. Wilder**. In preparation. Human Right to Water. For submission to *Environment* magazine.

Halper, E., **C.A. Scott**, S. Yool. Submitted, in review. Urban heat island, vegetation, and residential water use in Tucson, Arizona: a multi-scale investigation. *Geographical Analysis.*

Halper, E., R. Bark, **Scott, C.A.**, S. Yool. In preparation. Do green spaces and pools in urban parks provide a substitute for residential outdoor water use? *For submission to Landscape and Urban Planning.*

Halper, E., **Scott, C.A.**, S. Yool. In preparation. Geographies of residential water conservation: intra-urban variation in drought response. *For submission to The Professional Geographer.*

Hoover, J.H., **C.A. Scott**. In preparation. Electrical energy for water and wastewater services in Arizona: Assessing the implications of urban growth. *Journal of American Water Resources Association.*

Kumar, M.D., **C.A. Scott**, O.P. Singh. Submitted, in review. Inducing the shift from flat-rate or free agricultural power to metered supply: Implications for groundwater depletion and power sector viability in India. *Journal of Hydrology*.

**McEvoy, J., and M. Wilder**. Submitted, in review. Discourse, Desalination and (Mal)Adaptive Climate Strategies in the Arizona-Sonora Border Region. Invited submission as part of a special issue on risk and adaptation to *Global Environmental Change*.

Megdal, S.B., **C.A. Scott**. Submitted, in review. The importance of institutional asymmetries to the development of binational aquifer assessment programs: the Arizona-Sonora experience. *Water*.

McKay, J., E. Lopez-Gunn, **C.A. Scott**, G. Keremane, Z. Wu, T. Harter. In preparation. From the ground up: lessons and transferability of pursuing sustainable yield and equitable groundwater access through regional groundwater management plans in Australia, Spain, and the United States. *For submission to Water Policy*.

Ormerod, K.J., **C.A. Scott**. Submitted, in review. Drinking wastewater: public trust in potable reuse. *Science, Technology, and Human Values*.

Ormerod, K.J., **C.A. Scott**. Submitted, in review. The paradox of potable water reuse. *Society & Natural Resources*.

**Pineda Pablos, N., and L.M. Silva Gutiérrez**. "La protección civil en Sonora. El caso del Huracán Jimena". Para *Estudios Sociales* (CIAD), En elaboración.

Schneier-Madanes, G., and **M. Wilder**. In preparation. Changing Paradigm of Water Governance in Latin America. For submission to *Water International*.

**Scott, C.A.** Submitted, in review. The Water – energy – climate nexus: resources and policy outlook for aquifers in Mexico. *Water Resources Research*.

**Scott, C.A.** In preparation. The water-energy nexus in a global context. *For submission to International Journal of Water Resources Development*.

**Scott, C.A.**, A.C. Comrie, S. Yool, E. Halper. In preparation. The evolution of urban heat island and effects on potential evapotranspiration in Tucson, Arizona. *For submission to Bulletin of the American Meteorological Society*.

**Scott, C.A.**, K. Lansey, D. Kang, K.J. Ormerod. In preparation. Resilience of conjunctive water supply and reuse systems with distributed treatment for high-growth, water-scarce regions. *For submission to Journal of Water Resources Planning & Management*.

**Scott, C.A.**, S. Megdal, L.A. Oroz, J. Callegary, P. Vandervoet. Submitted, in review. Assessment of United States – Mexico transboundary aquifers facing climate change and growth in urban water demand. *Climate Research*.

**Scott, C.A.**, K.J. Ormerod, A. Browning-Aiken. In preparation. Water reuse, scarcity and growth: Public perceptions of risk and amenity. *For submission to Growth and Change*.

**Scott, C.A.**, and L. Raschid-Sally. In preparation. The global commodification of wastewater. For special issue "Water Governance: The Public-Private Debate." *Water International*.

**Scott, C.A.**, P.F. Robbins, A.C. Comrie. Revise and resubmit in process. Post-paradigmatic geographies of health: Human-pathogen interactions in changing environments. *Annals of the Association of American Geographers*.

**Scott, C.A.**, H. Tiessen, F.J. Meza, L.M. Farfán, M. Wilder, R.G. Varady, J. McEvoy, G.M. Garfin, N. Pineda Pablos. In preparation. Water security and adaptive management in the arid Americas. Abstract reviewed and paper invited for special issue on water, *Annals of the Association of American Geographers*.

**Slack, J.**, and **M. Wilder**. Submitted, in review. Acceso al agua urbano durante una época de cambio climático. Invited book chapter for volume on border environment. Mexicali: El Colegio de la Frontera Norte.

**Sugg, Z.P.**, M.S. Moran, **C.A. Scott**, W. Van Leeuwen, G. Nearing, C. Holifield Collins, P. Heilman, R. Bryant. In preparation. Hydrologic response to pulse storm events during a native to exotic transition in a semiarid grassland. *For submission to Agricultural and Forest Meteorology*.

Vandervoet, P.L., S.B. Megdal, **C.A. Scott**. Revise and resubmit in process. Los acuíferos transfronterizos Santa Cruz y San Pedro de Arizona y Sonora: Estado actual y creación de bases de datos (*The Santa Cruz and San Pedro transboundary aquifers of Arizona and Sonora: Current status and database creation*) In G. Cordova, J. Dutram, B. Lara, and J. Rodriguez (Eds.) Fortaleciendo el diálogo social: El desarrollo humano transfronterizo en la región Sonora-Arizona (*Strengthening social dialog: Transboundary human development in the Sonora-Arizona region*). Universidad de Sonora. Hermosillo, Sonora.

**Varady, R.G.**, **C.A. Scott**, **M. Wilder**, **G.M. Garfin**, **N. Pineda**. In preparation. Integrated climate and water resources assessment for adaptive management in western North America. For submission to *Environmental Science & Policy*.

**Wilder, M.**, **A. Ray**, A. Cortez-Lara, **R. Diaz-Caravantes**, A. Granados-Olivas, B. Hurd, and **N. Pineda**. In preparation. Triple Exposure: Climate-Related Vulnerability of Water in the U.S.-Mexico Border Region. Invited submission for special issue on border climate-related water issues, *Journal of Climate Research*.

**Wilder, M.**, and **J. Slack**. Fragile Binaries and Hard Grids: Water, Poverty and Climate at the U.S.-Mexico Border. Abstract under review by *Annals of the Association of American Geographers* for special issue on geography of water.

### **2011 - Forthcoming**

Bark, R.H., K. Morino, D. Garrick, **C.A. Scott**. 2011, in press. Climate change, water resources, and adaptive management in the Colorado River Basin. In *Water and Climate Modeling in Large Basins, Volume 1*, edited by R. Vieira, C. Tucci and C.A. Scott. Associação Brasileira de Recursos Hídricos, Brazil.

**Browning-Aiken, A.** 2011, in press. The Gap Between Economic Policy and Sustainable Use of Natural Resources: Water Case Studies in Sonora, Mexico. In *Neoliberalism and Commodity Production in Mexico*. T. Weaver, A. Browning-Aiken, J. Greenberg, and W. Alexander (eds). Colorado State Press.

**Browning-Aiken, A.** and **B. Morehouse**. 2011, in press. Social-Ecological Resilience of Transboundary Watershed Management: Institutional Design and Social Learning. In *Transboundary Waters Management: A Multi-Disciplinary Approach*. Germany: Wiley-VCH.

**Browning-Aiken, A.**, K.J. Ormerod, **C.A. Scott**. 2011, in press. Testing the climate for non-potable water reuse: opportunities and challenges in water-scarce urban growth corridors. *Journal of Environmental Policy & Planning* 13(3).

**Browning-Aiken, Anne Christopher Scott, Oscar Lai**, Delphine Clavreul. 2011, forthcoming. *Vulnerability and Resilience to Climate Change, Variability, and Growth in Tucson, Arizona* (*Vulnerabilidad y Resiliencia en frente del Cambio Climático, Variabilidad y Crecimiento en Tucson, Arizona*). Working Papers on Climate Change and Water Resources, No. 3. Udall Center Publications.

Eden, S., **C.A. Scott**, M.L. Lamberton, S.B. Megdal. 2011, in press. Energy-water interdependencies and the Central Arizona Project. In D. Kenney and R. Wilkinson (eds.) *The Water-Energy Nexus in the American West*, Edward Elgar, Cheltenham, UK.

Ela, W., and **J. McEvoy**. 2011, in press. The Future of Desalination for Arizona. In *Aridity, Scarcity and Shared Water Resources: Arizona, Israeli and Palestinian Perspectives on Solving Water Management Challenges*, ed. by S.B. Megdal, R.G. Varady, and S. Eden. UNESCO Press.

**Garfin, G.**, N. Lee, V. Magaña, R. Stewart, J.T. Rolfe, and **J. McEvoy**. 2011, in press (August). CHANGE: Climate and Hydrology Academic Network for Governance and the Environment. Bulletin of the American Meteorological Society. doi:10.1175/2010BAMS2927.1

Lutz Ley, América, **Nicolás Pineda Pablos**, y **Alejandro Salazar Adams**. 2011, en proceso. “La política hidráulica del Gobierno del Estado de Sonora y el Programa Sonora SI en el año 2010.” En Estudios sobre Sonora 2010, de Eloy Méndez & Alejandro Covarrubias. Hermosillo: Universidad de Sonora y Colegio de Sonora.

Megdal, S. B., **R. G. Varady**, and S. Eden, eds. In final preparation. *Shared Borders, Shared Waters — Israeli, Palestinian and U.S.-Mexican Experiences in Water Resource Management*. UNESCO Press.

**Pineda Pablos, N.**, y **H. Briseño Ramírez**. 2011, en proceso. “¿Por qué son mejores los organismos de agua de Baja California que los de Sonora? Instituciones locales y desempeño de los organismos públicos.” *Región y Sociedad*.

**Nicolás Pineda-Pablos, Christopher A. Scott, Alejandro Salazar-Adams, Rolando Díaz, José Luis Moreno, Luis Brito, Lucas Oroz, Martín Barrón**. 2011, forthcoming. Hermosillo, a City without Water for Growth: Vulnerability and Hydrologic Challenges for Hermosillo in the face of Climate Change (Hermosillo, ciudad sin agua para crecer. Vulnerabilidad y retos hidráulicos de la ciudad de Hermosillo frente al cambio climatic) Working Papers on Climate Change and Water Resources, No. 3. Udall Center Publications.

**Scott, C.A.**, and S.J. Buechler. Accepted with revisions. Environmental and social change in the U.S.-Mexico borderlands: Climate, water, and demographic futures. *Ecosphere*.

**Scott, C.A.**, S.A. Pierce, M.J. Pasqualetti, A.L. Jones, B.E. Montz, J.H. Hoover. Accepted with revisions.. Policy and institutional dimensions of the water-energy nexus. *Energy Policy*.

**Scott, C.A.** J.P. Venot, F. Molle. 2011, in press. Water, land, and development in comparative Arizona – Israeli – Palestinian perspective. Invited contribution by S.B. Megdal, R.G. Varady, S. Eden (eds.) *Aridity, scarcity and shared water resources: Arizona, Israeli and Palestinian perspectives on solving water management challenges*. UNESCO, Paris.

**Varady, R. G., C. A. Scott**, S. B. Megdal, and J. P. McEvoy. 2011 (In press). Transboundary aquifer institutions, policies, and governance: A preliminary inquiry. *Proceedings of the ISARM (Internationally Shared [Transboundary] Aquifer Resources Management Conference*, Paris, France. 6-8 Dec. 2010.

Megdal, S. B., R. Sención, C. A. Scott, F. Díaz, L. Oroz, J. Callegary, R. G. Varady. 2011 (In press). Institutional assessment of the transboundary Santa Cruz and San Pedro aquifers on the United States–Mexico border. *Proceedings of the ISARM (Internationally Shared [Transboundary] Aquifer Resources Management Conference*, Paris, France. 6-8 Dec. 2010.

Vieira, R., C. Tucci, **C.A. Scott** (eds.). 2011, in press. *Water and Climate Modeling in Large Basins, Volume 1*. Associação Brasileira de Recursos Hídricos, Brazil.

**Varady, R.G.**, R. Salmón Castillo, and S. Eden. In press. Key issues, institutions, and strategies for managing transboundary water resources in the Arizona-Mexico border region. In *Shared Borders, Shared Waters — Israeli, Palestinian and U.S.-Mexican Experiences in Water Resource Management*, ed. by S.B. Megdal, R.G. Varady, and S. Eden. UNESCO Press.

### In print

#### 2011

**Browning-Aiken, A., C. A. Scott, R. G. Varady**, S. B. Megdal. 2011. Cooperation for transboundary water management. *INBO (International Network of Basin Organizations) Newsletter*. N° 19: 20.

Colby, B.G., and **G.B. Frisvold** (eds.). 2011. *Adaptation and Resilience: The Economics of Climate, Water and Energy Challenges in the American Southwest*. Resources for the Future Press.

Gerlak, A., **R. G. Varady**, O. Petit, and A. Haverland. 2011. Hydrosolidarity and beyond: Can ethics and equity find a place in today's water resource management? *Water International* 36, 3 (May 2011): 251–265.

**House-Peters, L.**, and Chang, H. 2011. Urban water demand modeling: review of concepts, methods, and organizing principles. *Water Resources Research* 47, W05401 (doi:10.1029/2010WR009624)

Megdal, S.B., R. Sención, **C.A. Scott**, F. Díaz, L. Oroz, J. Callegary, R.G. Varady. 2011 in press. Institutional assessment of the transboundary Santa Cruz and San Pedro aquifers on the United States – Mexico border (also in translation as: *Evaluación institucional de los acuíferos transfronterizos Santa Cruz y San Pedro en la frontera México – Estados Unidos*). In Proceedings of the *Internationally Shared Aquifer Resources Management (ISARM) Conference*, UNESCO-IAH-UNEP, Paris, Dec. 6-8.

**Scott, C.A.** for Inter-American Institute for Global Change Research (IAI). 2011. Groundwater use in agriculture risks aquifer over-exploitation: Managing water at the local level in Mexico to buffer against global change. *Science Snapshots* 9 (in Spanish as *Riego con agua subterránea y sobreexplotación de acuíferos: Manejo local del agua en México para amortiguar el cambio global. Instantáneas de la Ciencia* 9).

**Scott, C.A.**, P. Silva-Ochoa. 2011. Collective action for sustainable water harvesting irrigation. In *Resources, Rights, and Cooperation: A Sourcebook on Property Rights and Collective Action for Sustainable Development*. International Food Policy Research Institute, Washington, DC. pp. 80-83.

**Scott, C.A., A. Browning-Aiken**, K.J. Ormerod, **R.G. Varady**, C.D. Mogollon, C. Tessmer. 2011. Guidance on Links between Water Reclamation and Reuse and Regional Growth. WateReuse Research Foundation Report 06-016-1. WateReuse Research Foundation, Arlington Virginia. 67 pp.

**Scott, C.A.**, and **N. Pineda Pablos**. 2011.. Innovating resource regimes: water, wastewater, and the institutional dynamics of urban hydraulic reach in northwest Mexico. *Geoforum* doi:10.1016/j.geoforum.2011.02.003.

**Sugg, Z.P.** 2011. Review of Water Policy in Texas: Responding to the Rise of Scarcity. Griffin, R.C. (Ed.). *Water Alternatives*, 4(2).

**Wilder, M.** 2011, Promises under construction: The evolving paradigm for water governance and the case of Northern Mexico, in A. Garrido and H. Ingram, eds., *Water for Food in a Changing World*. New York: Routledge, pp.22-240.

**Wilder, M., J. McEvoy, R. Beaty and E. McGovern.** 2011. Water and Urban Development: Coastal Vulnerability in Puerto Peñasco (Agua y desarrollo urbano: Vulnerabilidad costera in Puerto Peñasco). Working Papers on Climate Change and Water Resources, No. 2. Udall Center Publications. 49p.

**Wilder, M., Jeremy S., R.G. Varady, O. Lai, R. Beaty and E. McGovern.** 2011. Urban Water Vulnerability and Institutional Changes in Ambos Nogales (Vulnerabilidad de agua urbana y desafíos en Ambos Nogales). Working Papers on Climate Change and Water Resources, No. 1. Udall Center Publications. 42p.

## **2010**

Akhter M, Ormerod KJ, **Scott CA.** 2010. Lost in translation: resilience, social agency, and water planning in Tucson, Arizona. *Critical Planning* 17:47-65.

**Brito-Castillo, L.,** L.C. Méndez Rodríguez, S. Chávez-López, B. Acosta Vargas. 2010. "Groundwater Differentiation of the Aquifer in the Vizcaino Biosphere Reserve, Baja California Peninsula, Mexico." *Geofísica Internacional* 49(4):167-179.

**Brito-Castillo, L.,** E.R. Vivoni, **D.J. Gochis,** A. Filonov, I. Tereshchenko, C. Monzon, 2010. "An Anomaly in the Occurrence of the Month of Maximum Precipitation Distribution in Northwestern Mexico." *Journal of Arid Environments* 74:531-539. doi:10.1016/j.jaridenv.2009.10.014

Cole, K., K. Ironside, J. Eischeid, **G. Garfin,** P. Duffy, C. Toney. 2010. Past and ongoing shifts in Joshua tree support future modeled range contraction. *Ecological Applications* e-View. doi: 10.1890/09-1800

**Coles, R., C.A. Scott, G.M. Garfin.** 2010. Communicating risk and vulnerability: Weather, climate, and water on the U.S.-Mexico border. NOAA Climate Program Office, *white paper solicitation*.

Ellis, A., Goodrich, G., **Garfin, G.** 2010. A Hydroclimatic Index for Examining Patterns of Drought in the Colorado River Basin. *International Journal of Climatology*. DOI: 10.1002/joc.1882.

**Garfin, G.,** J. Eischeid, M. Lenart, K. Cole, K. Ironside, and N. Cobb. 2010. Downscaling Climate Projections in Topographically Diverse Landscapes of the Colorado Plateau in the Arid Southwestern United States. The Colorado Plateau IV: (Proceedings of the 9<sup>th</sup> Biennial Conference on Colorado Plateau Research, October, 2007). Charles Van Riper III, B. F. Wakeling and T.D. Sisk (eds.), University of Arizona Press, pp. 21-44. (peer-reviewed)

**Garfin, G.** 2010. CLIMAS Needs, Assets, Gaps, Regional Partnerships. Report to the NOAA Climate Program Office (Includes materials from SARP project workshops in Arizona and Northern Mexico). 3 May, 2010. (Submitted to Caitlin Simpson and Adam Parris).

Gutiérrez-Ruacho, O.G., **L. Brito-Castillo,** S.C. Díaz-Castro, **C.J. Watts.** 2010. "Trends in Rainfall and Extreme Temperatures in Northwestern Mexico." *Climate Research* 42:133-142. doi: 10.3354/cr00874

López-Hoffman, L., **R.G. Varady,** K.W. Flessa, and P. Balvanera. 2010. Transboundary ecosystem services on the México-U.S. border: Policy options for shared services. *Frontiers in Ecology and the Environment* 8, 2: 84-91 (online version March 2009).

Milman, A., **C.A. Scott**. 2010. Beneath the surface: intranational institutions and management of the United States – Mexico transboundary Santa Cruz aquifer. *Environment and Planning C: Government and Policy* 28: 528-551.

Ormerod, K.J., **C.A. Scott, A. Browning-Aiken**. 2010. Public attitudes toward expanding reclaimed water use in Arizona. In Proceedings of *14th Annual Water Reuse & Desalination Research Conference*, Tampa, FL, May 24-25.

**Pineda Pablos, N., A. Salazar Adams** and M. Buenfil Rodríguez. 2010. Para dar de beber a las ciudades mexicanas: el reto de la gestión eficiente del agua ante el crecimiento urbano. In: *El agua en México: Cauces y encauces*, edited by Blanca Jiménez, María Luisa Torregrosa and Luis Aboites Aguilar, México, D.F.: Academia Mexicana de Ciencias.

**Romero Lankao, P.** 2010: Water in Mexico City: what will climate change bring to its history of water-related hazards and vulnerabilities? *Environment and Urbanization*, 22.

**Salazar, A., and N. Pineda**. 2010. Escenarios de Demanda y Políticas para la administración del agua en la ciudad de Hermosillo, Sonora." *Región y Sociedad*. El Colegio de Sonora. (Vol. XXII, no. 47, enero-abril 2010) pp. 105-122

**Salazar, A., and N. Pineda** 2010. Factores que afectan la demanda de agua para uso doméstico en México. *Región y Sociedad*. El Colegio de Sonora. (Vol. XXII, no. 49, septiembre-diciembre 2010) pp. 3-16.

**Scott, C.A.**, M.J. Pasqualetti. 2010. Energy and water resources scarcity: Critical infrastructure for growth and economic development in Arizona and Sonora. *Natural Resources Journal* 50(3): 645-682.

**Scott, C.A.** 2010. "Groundwater." *Encyclopedia of Geography* (invited contribution). Thousand Oaks, CA: SAGE Publications.

**Scott, C.A.**, S. Dall'erba, **R. Díaz**. 2010. Groundwater rights in Mexican agriculture: Spatial distribution and social and economic determinants. *Professional Geographer*. 62(1): 1-15.

**Scott, C.A.**, S. Megdal, L.A.Oroz., M. Mexía, H. Ramos. 2010. Building shared vision: assessment of transboundary aquifers along the United States – Mexico border. In Proceedings of *International Conference on Water Scarcity, Global Changes, and Groundwater Management Responses*, University of California – Irvine, UNESCO, USGS, Irvine, CA, 1-5 Dec.

**Wilder, M.** 2010. Water governance in Mexico: political and economic apertures and a shifting state-citizen relationship. *Ecology and Society* 15(2): 22. [online] URL: <http://www.ecologyandsociety.org/vol15/iss2/art22/>

**Wilder, M., 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.

**Wilder, M., and G.M. Garfin**. 2010. Drought Risk and Hazard, in B. Warf (ed.) *Sage Encyclopedia of Geography*. Los Angeles/London: Sage Publications.

## **2009**

**Bravo, A.** 2009. La competencia entre ciudad de Hermosillo y la agricultura por el acceso al agua. *Sonárida* 27, Enero-Junio, Hermosillo, Sonora, Mexico. <http://www.iesa.gob.mx/sonarida/default.htm>.

- Briseño, H.** 2009. La gestión eficiente del agua frente al cambio climático. *Sonárida* 27, Enero-Junio, Hermosillo, Sonora, Mexico. <http://www.iesa.gob.mx/sonarida/default.htm>.
- Coles, A.R., and Scott, C.A.** 2009. Vulnerability and adaptation to climate change and variability in semi-arid rural southern Arizona, USA. *Natural Resources Forum* 33(4):297-309.
- Coles, A.R., C.A. Scott, and G.M. Garfin.** 2009. Weather, climate, and water: An assessment of risk, vulnerability, and communication on the U.S.-Mexico border. In Proceedings of *The Annual Meeting of the American Meteorological Society*. Phoenix, AZ. 11-15 Jan. [http://ams.confex.com/ams/89annual/techprogram/paper\\_149938.htm](http://ams.confex.com/ams/89annual/techprogram/paper_149938.htm)
- Diaz-Caravantes, R.E., and C.A. Scott.** 2009. Water management and biodiversity conservation interface in Mexico: A geographical analysis. *Applied Geography*. doi:10.1016/j.apgeog.2009.10.003.
- Farfán, L.M.** 2009. Ciclones tropicales en el Pacífico oriental. *Resumen del Clima de la Frontera, University of Arizona*, Oct. (Tropical cyclones in the eastern Pacific. *Border Climate Summary*, University of Arizona, Oct.) [http://www.climas.arizona.edu/forecast/ResumendelClimadelaFrontera\\_Oct08.pdf](http://www.climas.arizona.edu/forecast/ResumendelClimadelaFrontera_Oct08.pdf) [http://www.climas.arizona.edu/forecasts/BorderClimateSummary\\_Oct08.pdf](http://www.climas.arizona.edu/forecasts/BorderClimateSummary_Oct08.pdf)
- Farfán, L.M.** 2009. Una reseña de la entrada a tierra del Huracán Norbert en Baja California. *Resumen del Clima de la Frontera*, University of Arizona, Enero (An overview of Hurricane Norbert landfall in Baja California. *Border Climate Summary*, University of Arizona, Jan.) [http://www.climas.arizona.edu/forecasts/ResumendelClimadelaFrontera\\_Jan09.pdf](http://www.climas.arizona.edu/forecasts/ResumendelClimadelaFrontera_Jan09.pdf) [http://www.climas.arizona.edu/forecasts/BorderClimateSummary\\_Jan09.pdf](http://www.climas.arizona.edu/forecasts/BorderClimateSummary_Jan09.pdf)
- Frisvold, G.** 2009. Strategic behavior in transboundary water and environmental management. Pp. 279-300 in *Policy and Strategic Behaviour in Water Resource Management*, edited by A. Dinar and J. Albiac. London: Earthscan (ISBN: 9781844076697).
- Garfin, G.** 2009. Dry heat: An overview of climate changes and their impacts on North America's arid regions. *Sonárida* 27, Enero-Junio, Hermosillo, Sonora, Mexico. <http://www.iesa.gob.mx/sonarida/default.htm>.
- Garfin, G., N. Lee, V. Magaña, R. Steward, and J. McEvoy.** 2009. "International Workshop for CHANGE (Climate and Hydrology Academic Network for Governance and the Environment)." Project Report for Foreign Affairs and International Trade Canada (DFAIT). Available in English and Spanish: [http://www.environment.arizona.edu/files/env/change/2009\\_workshop/report\\_english.pdf](http://www.environment.arizona.edu/files/env/change/2009_workshop/report_english.pdf) (or [\\_spanish.pdf](http://www.environment.arizona.edu/files/env/change/2009_workshop/report_spanish.pdf))
- Garfin, G., C. Scott, A. Coles, A. Ray, D. Gochis, L. Farfan, T. Cavazos, K. Sammler, R. Varady, M. Wilder, N. Pineda, M. Montero, and A. Browning-Aiken.** 2009. Information flows and policy: Climate, cyclones, and adaptive water-resources management at the U.S.-Mexico border. *American Meteorological Society* Extended Abstract J3.5. [http://ams.confex.com/ams/89annual/techprogram/paper\\_146039.htm](http://ams.confex.com/ams/89annual/techprogram/paper_146039.htm)
- Garfin, G.M.,** 2009. Drought and Climate Services in Arizona. Extended Abstract for *The Socio-Economic benefits of National Hydro-Meteorological Services: Making a Business Case for Support*. 2009 NWS International Session – 89th AMS Annual Meeting, January 9, 2009 – Phoenix, AZ, USA. 8 pp.
- Gerlak, A., **R.G. Varady**, and A. Haverland. 2009. Hydrosolidarity and international water conflict. *International Negotiation* 14, 2: 311-328. Special issue, "Negotiating International River Disputes to Avert Conflict & Facilitate Cooperation," A. Gerlak and N. Zawahari, eds.
- Gochis, D.J.,** W. Shi, J. Schemm, L. Williams, and R.W. Higgins. 2009. A community forum for evaluation and use of seasonal forecasts of the North American Monsoon: The NAME forecast forum. *Eos*.

Hutchinson, C. F., **R.G. Varady**, and S. Drake. 2009. Old and new: Changing paradigms in arid lands water management. In *Water and Sustainability in Arid Regions*, ed. by G. Schneier-Madanes and M. F. Courel. Dordrecht, Neth.: Springer. pp. 311-332.

Lopez-Hoffman, L., **E.D. McGovern**, **R.G. Varady**, and K. Flessa. 2009. Introduction. In *Conservation of Shared Environments: Learning from the United States and Mexico*. Lopez-Hoffman, L., E. McGovern, R.G. Varady, and K.W. Flessa, eds. UA Press. pp. 1-4.

López-Hoffman, L., **R.G. Varady**, and P. Balvanera. 2009. Finding mutual interest in shared ecosystem services: New approaches to transboundary conservation. In *Conservation of Shared Environments: Learning from the United States and Mexico*. Lopez-Hoffman, L., E. McGovern, R.G. Varady, and K.W. Flessa, eds. UA Press. pp. 137-153.

Lopez-Hoffman, L., **E.D. McGovern**, **R.G. Varady**, and K. Flessa. 2009. Guiding principles for framing transboundary conservation (Conclusion). In *Conservation of Shared Environments: Learning from the United States and Mexico*. Lopez-Hoffman, L., E. McGovern, R.G. Varady, and K.W. Flessa, eds. UA Press. pp. 293-298.

Lopez-Hoffman, L., **E.D. McGovern**, **R.G. Varady**, and K. Flessa. 2009. Energizing transboundary conservation – Three easy steps (Afterword). In *Conservation of Shared Environments: Learning from the United States and Mexico*. Lopez-Hoffman, L., E. McGovern, R.G. Varady, and K.W. Flessa, eds. UA Press. pp. 299-301.

**Pineda, N.** 2009. El manejo urbano del agua: Del círculo vicioso a la participación ciudadana, la autosuficiencia y la sustentabilidad. Notas para una agenda de investigación. *Memoria de la Primera Reunión de la Red Nacional del Agua*. 22 Jan.

**Pineda, N.**, and F. Flores Félix. 2009. ¿Cómo mejorar la observación meteorológica terrestre en México? *Sonárida 27*, Enero-Junio, Hermosillo, Sonora, Mexico. <http://www.iesa.gob.mx/sonarida/default.htm>.

**Pineda, N.**, and **A. Salazar**. 2009. "Cities in the Desert: Growth, Climate Change and Urban Water Management in Mexico's North Borderland." In *Water and Sustainable Development in Arid and Semi-Arid Zones*, edited by G. Schneier-Madanes and M-F. Courel. United Kingdom: Springer Books.

**Pineda, N.**, and **A. Salazar**. 2009. "Urban Water Management: From a vicious cycle to that of public participation, self sufficiency, and sustainability." In *Water Research in Mexico: Scarcity, Degradation, Stress, Conflict, Management and Policy*, edited by Ursula Oswald Spring. United Kingdom: Springer.

**Pineda, N.**, and **A. Salazar**. 2009. El ciclo de centralización y descentralización del servicio de agua potable en Hermosillo, 1896-2002. *Boletín del Archivo Mexicano del Agua*.

Richter, H., **A. Browning-Aiken**, **R.G. Varady**, and D.C. Goodrich. 2009. Collaborative learning processes – adopting an adaptive management framework. Box 15.11 of *Water in a Changing World*, United Nations *World Water Development Report 3*. Paris: UNESCO Publishing and Earthscan. pp. 276-77.

Richter, H., D.C. Goodrich, **A. Browning-Aiken**, and **R. Varady**. 2009. Integrating Science and Policy for Water Management. Pp. 388-406 in *Ecology and Conservation of the San Pedro River*, edited by J.C. Stromberg and B. Tellman. Tucson, AZ: University of Arizona Press.

Satterthwaite, D., S. Huq, M. Pelling, A. Reid, and **P. Romero-Lankao**, 2009: Introduction. *Adapting to Climate Change in Urban Areas: The Possibilities and Constraints in Low-and Middle-income Nations*, J. Bicknell, D. Dodman, D. Satterthwaite, editors, *Earth Scan*, 3-47

**Scott, C.A.**, E.B. Halper, S.R. Yool, and A. Comrie. 2009. The evolution of urban heat island and water demand. In *Proceedings of the 89th Annual Meeting of the American Meteorological Society, Eighth Symposium on the Urban Environment*, Phoenix, AZ, 11-15 Jan. [http://ams.confex.com/ams/89annual/techprogram/paper\\_150343.htm](http://ams.confex.com/ams/89annual/techprogram/paper_150343.htm)

**Scott, C.**, M. Pasqualetti, J. Hoover, G. Garfin, **R. Varady**, S. Guhathakurta. 2009. *Water and Energy Sustainability with Rapid Growth and Climate Change in the Arizona-Sonora Border Region*. Report to the Arizona Water Institute. 13 pp.

Serrat-Capdevila, A., **A. Browning-Aiken**, K. Lansey, T. Finan, and J. B. Valdes. 2009. Increasing social-ecological resilience by placing science at the decision table: The role of the San Pedro Basin decision support system model (Arizona). *Ecology and Society* 14(1):37. [online] URL: <http://www.ecologyandsociety.org/vol14/iss1/art37/>

**Silva, L. M.** 2009. Las inundaciones en Sonora: un reto para la protección civil. *Sonárida* 27, Enero-Junio, Hermosillo, Sonora, Mexico. <http://www.iesa.gob.mx/sonarida/default.htm>

**Varady, R.G.** 2009. The North American Free Trade Agreement (NAFTA) and environment in the U.S.-Mexico border region. *Encyclopedia of Environment and Society*. Ed. by P. Robbins. SAGE Reference, Produced by Golson Books, Ltd. Thousand Oaks, CA: Sage Publications. Volume 5: 3 pp.

**Varady, R.G.**, and E. Ward. 2009. Transboundary conservation in context: What drives environmental change? In *Conservation of Shared Environments: Learning from the United States and Mexico*. Lopez-Hoffman, L., E. McGovern, R.G. Varady, and K.W. Flessa, eds. UA Press. pp. 9-22.

**Varady, R.G.**, and **E. McGovern**. 2009. Paradigmas para la gestión del agua en el siglo XXI (Paradigms for water management in the 21<sup>st</sup> century). *Revista Hydria* (Argentina; October) 25: 11-14.

**Varady, R.G.**, **C.A. Scott**, **G.M. Garfin**, and **M. Wilder**. 2009. The water sector and adaptation to climate change in Latin America and the Caribbean. IAI (Inter-American Institute for Global Change Research) *Newsletter* 2: 9-11.

**Varady, R.G.**, **C.A. Scott**, et al.. 2009. *Information Flows and Policy: Use of Climate Diagnostics and Cyclone Prediction for Adaptive Water-Resources Management Under Climatic Uncertainty in Western North America* (HD 005). Final report to Inter-American Institute for Global Change Research (IAI). Tucson: Udall Center. 29 pp.

**Varady, R.G.**, **M. Wilder**, **C.A. Scott**, et al. 2009. *Moving Forward: Adaptation and Resilience to Climate Change, Drought, and Water Demand in the Urbanizing Southwestern United States and Northern Mexico*. Annual Report (July 2008-Apr. 2009). NOAA Sector Application Research Prog. (SARP). 16 pp.

**Wilder, M.** 2009. Political and economic apertures and the shifting state-citizen relationship: Reforming Mexico's national water policy. In *Water Policy Entrepreneurs: A Research Companion to Water Transitions Around the Globe*, edited by D. Huitema and S. Meijerink. Cheltenham, UK: Edward Elgar.

## **2008**

Ela, W., C. Graf, T. Poulson, J. Baygents, J. Theron, P. Fox, and **C.A. Scott**. 2008. Salinity management and desalination technology for brackish water resources in the arid West. Summary report of workshop on "Improving Salinity Management and Desalination Technology for Brackish Resources in the Arid West" Sponsored by Arizona Water Institute, Bureau of Reclamation. June. <http://www.azwaterinstitute.org/media/Ela%20Final%20Report>

**Frisvold, G.**, and K. Emerick. 2008. Rural-urban water transfers with applications to the U.S. Mexico border region. Pp. 155-180 in *Game Theory and Policy Making in Natural Resources and the Environment*, edited by A. Dinar, J. Albiac, and J. Sanchez-Soriano. New York: Routledge Press.

**Gochis, D.J.** 2008. The North American Monsoon Experiment: A research program for improving predictions of monsoon rainfall. *Border Climate Summary*, University of Arizona, July.

**Gochis, D.J.** 2008. Early review of the 2008 North American Monsoon. *Border Climate Summary*, University of Arizona, Oct.

Hoover, J., and **C.A. Scott**. 2008. Water, electric power and growth in southern Arizona. In Proceedings of *American Institute of Professional Geologists and Arizona Hydrological Society Symposium on "Changing Waterscapes and Water Ethics for the 21<sup>st</sup> Century."* Flagstaff, AZ. 20-24 Sept.

Jones, J. 2008. With significant contribution from **G. M. Garfin, A.J. Ray, C.A. Scott, R.G. Varady, and M. Wilder**. Water and border area climate change: An introduction (issued in translation as: Agua y cambio climático en el área fronteriza: Una introducción). Special Report for the XXVI Border Governors Conference. California Department of Water Resources, Sacramento, CA.

**Morehouse, B.J.**, D. Ferguson, G. Owen, **A. Browning-Aiken**, P. Wong-Gonzales, **N. Pineda, and R.G. Varady**. 2008. Science and socio-ecological sustainability: Examples from the Arizona-Sonora border. *Environmental Science and Policy* 11(3): 272-84.

**Pineda, N., and A. Salazar**. 2008. De las juntas federales a las empresas de agua: La evolución institucional de los servicios urbanos de agua en México 1948-2008. Págs. 57-76 en *El Agua potable en México. Historia reciente, actores, procesos y propuestas*, coord. R. Olivares y R. Sandoval. México D.F.: Asociación Nacional de Empresas de Agua.

**Pineda, N.** 2008. Nacidos para perder dinero y derrochar agua. El inadecuado marco institucional de los organismos operadores de agua en México. Págs. 121-150 en *La gestión de los recursos hídricos: realidades y perspectivas Tomo*, editado por D. Soares, S. Vargas y M.R. Nuño. Jiutepec, Morelos: Instituto Mexicano de Tecnología del Agua; Guadalajara, Jalisco: Universidad de Guadalajara.

**Romero Lankao, P.**, 2008: "Urban Areas and Climate Change: Review of Current Issues and Trends" Issues paper prepared for *Cities and Climate Change: Global Report on Human Settlements 2011*, 101 pp.

**Scott, C.A.** 2008. Data management and exchange: Challenges in a multi-national and multi-disciplinary environment (El manejo y el intercambio de datos: Desafíos en un ambiente multinacional y multidisciplinario). *Inter-American Institute for Global Change Research Newsletter*, 1: 25-26.

**Scott, C.A.**, and J.M. Banister. 2008. The dilemma of water management "regionalization" in Mexico under centralized resource allocation. *International Journal of Water Resources Development* 24(1): 61-74, DOI: 10.1080/07900620701723083.

Wilbanks, T.J., P. Kirshen, D. Quattrochi, **P. Romero-Lankao**, C. Rosenzweig, M. Ruth, W. Solecki, and J. Tarr, 2008. Effects of global change on human settlements. *Analyses of the effects of global change on human systems*, edited by Janet Gamble, Synthesis Product 4.2, US Climate Change Science Assessment.

**Wilder, M.** 2008. Equity and water in Mexico's changing institutional landscape. Pp. 95-116 in *Water, Place, and Equity*, edited by R. Perry, H. Ingram, and J. Whiteley. Cambridge: Massachusetts Institute of Technology (MIT) Press.

## **2007**

Banister, J.M., and **C.A. Scott**. 2007. Descentralización de los recursos hidráulicos de México: Por qué tiene importancia la historia (Decentralizing Mexico's water resources: Why history matters). *Sonárida* 12(23): 20-23.

**Browning-Aiken, A., B. Morehouse, A. Davis, M. Wilder, R. Varady, D. Goodrich, R. Carter, D. Moreno, and E.D. McGovern.** 2007. Climate, water management, and policy in the San Pedro basin: Results of a survey of Mexican stakeholders near the U.S.-Mexico border. *Climatic Change* 85(Dec.): 323-341.

**Díaz, R.** 2007. La demanda de agua en las ciudades fronterizas: El caso de Nogales, Sonora. (Water Demand in Border Cities: The case of Nogales, Sonora). *Sonárida* 12(23).

**Pineda, N.** 2007. Construcciones y demoliciones: Participación social y deliberación pública en los proyectos del acueducto de El Novillo y de la planta desaladora de Hermosillo, 1994-2001. *Región y Sociedad XIX Número Especial*, 89-115.

**Pineda, N., A. Browning-Aiken and M. Wilder.** 2007. Equilibrio de bajo nivel y manejo urbano del agua en Cananea, Sonora. *Frontera Norte* 19(37).

**Ray, A.J., G.M. Garfin, M. Wilder, M. Vásquez-León, M. Lenart, and A.C. Comrie.** 2007. Applications of monsoon research: Opportunities to inform decision making and reduce regional vulnerability. *Journal of Climate* 20(9): 1608-1627.

**Ray, A.J., G.M. Garfin, L. Brito-Castillo, M. Cortez-Vázquez, H.F. Diaz, J. Garatuza-Payán, D. Gochis, R. Lobato-Sánchez, R.G. Varady, and C. Watts.** 2007. Monsoon region climate applications: Integrating climate science with regional planning and policy. *Bulletin of the American Meteorological Society* 88(6): 933-35.

Rosenberg, N.J., V.M. Mehta, J. R. Olsen, H. von Storch, **R.G. Varady**, M.J. Hayes, and D. Wilhite. 2007. Societal adaptation to decadal climate variability in the United States. CRCES Workshop on Adaptation to Decadal Climate Variability in the United States. Waikoloa, Hawaii. 26-28 Apr. 2007. *Eos* 88(43): 444.

**Scott, C.A., F. Flores-López, J.R. Gastélum.** 2007. Appropriation of Río San Juan water by Monterrey City, Mexico: Implications for agriculture and basin water sharing. *Paddy & Water Environment*, special issue on "Transfer of Water from Irrigation to Urban Uses: Lessons from Case Studies." 5(4): 253-262, DOI 10.1007/s10333-007-0089-3.

**Scott, C.A., R.G. Varady, A. Browning-Aiken, and T.W. Sprouse.** 2007. Water and energy management challenges on the Arizona-Mexico border. In Proceedings of *Southwest Hydrology and Arizona Hydrological Society Regional Water Symposium* "Sustainable Water, Unlimited Growth, Quality of Life: Can We Have It All?" Tucson, AZ. 29 Aug. – 1 Sept.

**Scott, C.A., R.G. Varady, A. Browning-Aiken, and T. W. Sprouse.** 2007. Water and energy resources in the Arizona-Sonora border region. *Southwest Hydrology* 6 (5): 26-27, 31.

**Varady, R.G., A. Browning-Aiken, G. Garfin, D. Goodrich, B. Morehouse, and M. Wilder.** 2007. Use of climate-information products by water managers and other stakeholders in two GCIP/GAPP watersheds in Arizona/Sonora and Oklahoma. Final Report to NOAA OAR Climate Program Office (CPO). Tucson, AZ: Udall Center for Studies in Public Policy.

## PRESENTATIONS & PARTICIPATION

**A. Browning-Aiken.** 2011. Assessing the Role of Socio-ecological Learning in Participatory Governance: Building Resilience in six Brazilian River Basin Committees. XIV IWRA World Water Congress, Recife, PE, Brazil, Sept. 25-29.

**Browning-Aiken, A.** 2010. Participation in UNESCO's International Hydrological Programme task force on Water Dependencies: Systems Under Stress and Societal Response Strategies. Paris, France 20-24 April.

**Browning-Aiken, A., C.A. Scott** and K.J. Ormerod 2010. Urban Core Vulnerabilities to Climate Change: Potential of Regional Integrated Water and Wastewater Planning. Society for Applied Anthropology. Merida, Yucatan 23-27 March.

**Browning-Aiken, A.** 2009. The Potential for increasing social ecosystem resilience: Collaborative planning and institutional assessment. UNESCO HELP Program Seminar, Lisbon, Portugal 23-26 June.

**Browning-Aiken, A., and Scott, C.A.** 2009. Drought and adaptive water-resources management in southern Arizona. In Proceedings of the *Arizona Hydrological Society & American Institute of Hydrology*, Scottsdale, AZ, Aug. 31 – Sept. 2.

**Browning-Aiken, A.** 2008. The Interplay between water institutions and practices in the U.S.-Mexico Upper San Pedro Basin: Is economic development sustainable where transboundary and regional policies conflict? IV International Symposium on Transboundary Waters Management. Thessaloniki, Greece. Oct. 15-18.

**Browning-Aiken, A.** 2008. Opportunities and challenges in Arizona for nonpotable water use. Arizona Hydrological Society - 21st Annual Symposium, Flagstaff, AZ. 24-25 Sept.

**Browning-Aiken, A.** 2007 Retos para implementar planeación hidrológica transfronteriza: Cambios de políticas recientes, regímenes de gestión, y practicas institucionales en EEUU y México. WWF4 FT 2.33 Advancing Local Actions in Basins, sub-Basins and Aquifers through Comprehensive IWRM Learning and Global Networks. 4th World Water Forum. Mexico City, Mexico. 16-22 March.

**Browning-Aiken, A.** 2007. A river running in the desert: Lessons for IWRM from the San Pedro HELP Basin on the U.S.-Mexico border. HELP Southern Symposium: HELP in Action -- Local Solutions to Global Water Problems -- Lessons from the South. South Africa, Gauteng. 4-9 Nov.

**Browning, A., D. Goodrich, R. Varady,** and H. Richter. 2007. Lessons for integrated water resources management from the San Pedro HELP Basin on the U.S.-Mexico border. Eos Trans. Fall AGU Meeting. Supplement, Abstract H21F-0809. San Francisco, CA. 10-14 Dec.

**Farfán, L.M.** 2011 Tropical Cyclone Impacts Over the Baja California Peninsula. NWS Virtual Border Conference. El Paso, TX, 10 March.

**Farfán, L.M.,** R. Romero-Centeno and G.B. Raga, 2010. Characteristics of landfalling tropical cyclones in the eastern North Pacific basin. In session Hurricanes II: Historical Records/Vulnerability. Association of American Geographers Annual Meeting, Washington, DC. 14-18 April.

**Farfán, L.M.,** and G.B. Raga. 2009. Training on Eastern Pacific tropical cyclones for Latin American students. American Geophysical Union, Spring Assembly. Toronto, Canada. 24-27 May.

**Farfán L.M.** 2008. Update on border climate-related research. Research Group Meeting on Border Water, Growth and Climate Projects. University of Arizona, Tucson, AZ. 26 Sept.

**Farfán, L.M.,** R. Romero-Centeno, G.B. Raga, and J. Zavala-Hidalgo. 2008. Landfalling tropical cyclones in the Eastern Pacific. Part I: Case studies from 2006 and 2007. Extended Abstract, American Meteorological Society, 28<sup>th</sup> Conference on Hurricanes and Tropical Meteorology. Orlando, FL. 28 April - 2 May. [http://ams.confex.com/ams/28Hurricanes/techprogram/paper\\_138010.htm](http://ams.confex.com/ams/28Hurricanes/techprogram/paper_138010.htm)

**Farfán, L.M.**, D. Pozo, G.B. Raga, R. Romero-Centeno, and J. Zavala-Hidalgo. 2008. A training course on tropical cyclones over the eastern Pacific Ocean. American Geophysical Union Spring Assembly, Ft. Lauderdale, FL. 27-30 May.

**Farfán, L.M.**, and M.A. Cosio. A weather analysis system for the Baja California peninsula: Tropical cyclone season of 2007. American Geophysical Union Spring Assembly, Ft. Lauderdale, FL. 27-30 May.

Flores Felix, F. 2009. Efectos de la entrada a tierra e los ciclones Norbert y Lowell. Dimensiones Humanas de Ciclones Tropicales (Landfall effects of cyclones Norbert and Lowell. Human Dimensions of Tropical Cyclones), presented at Monsoon Workshop organized by Centro de Ciencias de la Atmósfera, Universidad Nacional Autónoma de México. Acapulco, Mexico. 13 March.

**Garfin, G.** 2011. National Workshop on Climate and Forests. Flagstaff, AZ, May 18-19, 2011. Co-organizer. Organizing institutions: University of Arizona Cooperative Extension, USDA-NIFA, Society of American Foresters, USDA-Forest Service, Northern Arizona University.

**Garfin, G.** 2011. "Southwest Climate Change Initiative Jemez Mountains Climate Adaptation Case Study" presentation at Between a Rock and a Hot Place: Climate Change Adaptation and Resource Management for the Sky Island Region, a workshop by Sky Island Alliance, EcoAdapt, CLIMAS, UA Institute of the Environment, DOI Desert Landscape Conservation Cooperative. Tucson, AZ, April 13-14, 2011.

**Garfin, G.** 2011. Border Climate Summary. National Weather Service Virtual Border Workshop, March 10, 2011. Workshop web page - <http://www.srh.noaa.gov/epz/?n=vbcpresentations>. Garfin presentation - [http://www.srh.noaa.gov/media/epz/2011VBC/Garfin\\_BCS\\_10Mar2011.pdf](http://www.srh.noaa.gov/media/epz/2011VBC/Garfin_BCS_10Mar2011.pdf)

**Garfin, G.** 2011 "Impacts of Climate Change in the Southwestern U.S." at The Arctic is Melting and the Desert is Burning: Impacts Globally and Locally (sponsored by Clean Air-Cool Planet, Avalon Trust, and Ambassador of Norway to the United States, His Excellency Wegger Chr. Strommen), February 9, 2011, Santa Fe, NM.

**Garfin, G.** 2011 "Hands across the water: an integrative approach to uncertainty and decision-making" at the 91<sup>st</sup> American Meteorological Society Annual Meeting, Seattle, WA, January 24, 2011.

**Garfin, G.** 2010 "Collaborative Research for Water Resource Management under Climate Change Conditions" at the 2010 American Geophysical Union Fall Meeting, San Francisco, CA, December 13, 2010. (on behalf of Katja Brundiers et al.; invited)

**Garfin, G.** 2010 "Getting Beyond First Base: Science-Society Communication for Climate Adaptation" at the 2010 American Geophysical Union Fall Meeting, San Francisco, CA, December 16, 2010, session on Priorities and Pitfalls: Pathways for Effective Science Communication. (invited)

**Garfin, G.** 2010. Presentation at the Restoring Rivers in the Southwestern U.S. and Northern Mexico: a Bi-National Conference on Learning from the Past for the Benefit of the Future. "Overview of Climate Change in the Southwest." Tucson, AZ, December 7-9, 2010. (invited)

**Garfin, G.** 2010. Climate Adaptation Partnerships: Examples from the Ground. Presentation at the CAMNet (Collaborative Adaptive Management Network) Annual Rendezvous, March 8-10, 2010, Tucson, AZ.

**Garfin, G.** 2010. Participant in "Improving the Coordination of Federal Climate and Water Resource Science Efforts (with a focus on the Colorado River)," March 17-18, 2010, Boulder, CO.

**Garfin, G.** 2010. Presentation at Association of American Geographers on "Across Borders: Moving Toward Sustainable Resource Management at the Nexus of Water, Climate, Environment, and Governance in the Americas." Washington, DC. 16 Apr.

**Garfin, G.** 2010. Presentation at Association of American Geographers on “Translational Environmental Research to Provide Decision and Discussion Support in North America’s Border Regions.” Washington, DC. 16 Apr

**Garfin, G.** 2010. North American Seasonal Assessment Workshop, Boulder, CO. The workshop will bring together climate scientists and fire managers from Canada, the U.S., and Mexico to predict fire potential for May-October 2010. 20-22 Apr.

**Garfin, G.** 2010. "A Plausible Range: Some Observations on How Resource Managers Are Tackling Climate Change Uncertainties" at MtnClim Workshop. Blue River, OR. 7-9 June

**Garfin, G.** 2010. Applications of Seasonal-to-Interannual and Decadal climate predictions; Discussion leader. 2010 U.S. CLIVAR Annual Summit, Denver, CO, July 7-9, 2010.

**Garfin, G.** 2010. International Drought Symposium, Riverside, CA. 24-26 March.

**Garfin, G.** 2010. “Climate Adaptation Partnerships in Semiarid North America” at the American Meteorological Society 90<sup>th</sup> Annual Meeting, session on The Emergence of New Scientific Partnerships. January 18, 2010, Atlanta, GA.

**Garfin, G.** 2009. Climate Change Panelist at The Colorado River: Building a Sustainable Future. Water Education Foundation, Colorado River Symposium. September 16-18, 2009, Santa Fe, New Mexico.

**Garfin, G.** 2009 “Climate Change Challenges and Solutions for Water Managers” at the Arizona, Israeli, and Palestinian Water Management and Policy Workshop: Economic, Environmental, and Community Implications of Expanding Reuse and Desalination for Future Water Supplies. 1 September 2009, Tucson, Arizona (invited).

**Garfin, G.** 2009. Resumen del clima de la frontera/Border climate summary and online drought tools. 2009 Border Governors Conference Water Work Table Binational Drought Science Conference. San Diego, CA (invited talk). 26-27 March. <http://www.watereducation.org/doc.asp?id=1187>.

**Garfin, G. N. Pineda, M. Barron.** 2009. “Comportamiento y previsiones del clima en el Desierto de Sonora” at the Panel sobre Hermosillo y el clima. Comportamiento, amenazas, perspectivas. 22 Octubre 2009, El Colegio de Sonora, Hermosillo, Sonora, México (invited).

**Garfin, G., C. Scott, R. Varady, K. Jacobs, M. Wilder, N. Pineda, R. Diaz, A. Coles, and K. Sammler.** 2009. Adaptation to climate change: Addressing challenges in the U.S.-Mexico border region. ASLO Aquatic Sciences Meeting: Session 100: Eutrophication and Water Management. International Comparisons of Water Quality Challenges and Policy. Nice, France. 28 Jan.

**Garfin, G., A. Coles, J. McEvoy, K. Sammler, R. Varady, M. Wilder, C.A. Scott, T. Cavazos, A. Ray, D. Gochis, N. Pineda, L. Farfán, and R. Díaz.** 2009. Improving information flows to enhance drought and climate change resilience in northern Mexico. Poster presented at the NOAA Climate Prediction and Applications Workshop. Norman, OK. 24-27 March. <http://climate.ok.gov/cpasw/presentations.php#G>

**Garfin, G.** 2009 “A Perspective on Applied Water Resources Research for Use by Decision Makers: The Case of Drought in Semiarid North America” at Water Resources in Developing Countries: Planning and Management in a Climate Change Scenario. Abdus Salam International Center for Theoretical Physics, Trieste, Italy. 29 April 2009. (invited)

**Garfin, G.** 2008 “The State of Drought: Local, State, Regional” at the Tucson Water Citizen’s Water Advisory Committee. June 4, Tucson, AZ (invited).

**Garfin, G., R. Varady, and A. Ray.** 2007. Establishing an ongoing binational U.S.-Mexico border diagnostic summary: Developing a prototype and navigating the institutional landscape. Presented at AGU Joint Assembly. Acapulco, Mexico. 23 May.

Goodrich, D., **A. Browning-Aiken, R.G. Varady,** and H. Richter. 2007. Lessons for integrated water resources management from the San Pedro HELP Basin on the U.S.-Mexico border. AGU Meeting. San Francisco, CA. 10-14 Dec.

Goodrich, D. H. Richter, **R. Varady, A. Browning-Aiken,** and J. Shuttleworth. 2007. The Upper San Pedro Partnership: A case study of successful strategies to connect science to societal needs. Presented at AGU Joint Assembly. Acapulco, Mexico. 25 May.

**House-Peters, L. and C.A. Scott.** 2011. Assessing the Impacts of Land Use Change on Water Availability, Management and Resilience in Arid Region Riparian Corridors: A Case Study of the San Pedro and Rio Sonora Watersheds in Southern USA and Northern Mexico. XIV IWRA World Water Congress, Recife, PE, Brazil, Sept. 25-29.

**House-Peters, L.** 2011. Resilience in Riparian corridors: Understanding Contributions of Ecohydrological Change and Social Process in System Collapse and Reorganization. Resilience Alliance, Phoenix, Arizona, March 11.

**Lai, O.** 2010. International Visitor Leadership Program- Lower Mekong Initiative: Watershed Management a Sub-Regional Project for Cambodia, Laos, Thailand, and Vietnam. Presentation: "U.S.-Mexico Transboundary Water Management along the Ambos Nogales Border Region." United States Department of State. Washington D.C. 15 July.

Lansey, K., R. Arnold, G. Bayraksan, C. Choi, S. Davis, **C.A. Scott.** 2010. Optimization of conjunctive water supply and reuse systems with distributed treatment for high-growth, water-scarce regions. National Science Foundation, Emerging Frontiers in Research Innovation, Arlington, VA, March 18-19, 2010.

**Marra, Ralph.** 2011. Municipal Water Management Planning for Climate Uncertainty. Presented at Climate Risk and Water Security in the Americas Stakeholder Workshop, San Jose del Cabo, BCS, Mexico, March 1, 2011.

**McEvoy, Jamie.** 2011. Association of American Geographers Annual Meeting, Seattle, WA. Organized session on Urban Political Ecology and Science and Technology Studies: Complimentarity, Intersections, and Disjunctures. Paper presentation: "Connecting Theory and Method: How to Investigate a Water Infrastructure Network." April 2011.

**McEvoy, Jamie.** 2011. WRRC Annual Conference: Salinity and Desalination in the Southwest: Challenges and Solutions. Yuma, AZ. Poster Presentation: "Desalination in the Gulf of California: Priorities and Perspectives from Water Managers and Regional Stakeholders." April 2011.

**McEvoy, Jamie.** 2011. Institute for the Environment's GradBlitz Conference. Tucson, AZ. "Desalination and Development: The Technological Transformation of the Gulf of California in the Face of Climate Change." February 2011.

**McEvoy, J., and M. Wilder.** 2010. Initiative on Climate Adaptation Research and Understanding through Social Sciences (ICARUS), Writeshop on Climate Change and Its Narratives: Manufacturing (In)Equities, Univ. of Michigan. Paper presentation: "Raising Risk: Discourse, Technology and the Production of Maladaptive Climate-Related Water Policies." Ann Arbor, MI. June 2010.

**McEvoy, J., and M. Wilder.** 2010. Association of American Geographers Annual Meeting, Organized session on *Power, Politics and Water Resource Technologies*. Paper Presentation: "Political Ecologies of Desalination: Augmentation and Adaptation in Spain and Mexico." Washington, D.C. 16 April.

**McEvoy, J., and M. Wilder.** 2010. Initiative on Climate Adaptation Research and Understanding through Social Sciences, Climate Vulnerability and Adaptation Workshop: Theories and Cases, Univ. of Illinois at Urbana Champaign. Paper presentation: "Technology and Adaptation: Framing Desalination in Northwestern Mexico". February 2010.

**McEvoy, J., and M. Wilder.** 2008. Avanzando adelante: Adaptación y resiliencia al cambio climático, la sequía y la demanda del agua en los centros urbanizantes del suroeste de EEUU y el noroeste de México. Arizona-Mexico Commission Fall Plenary Session. Hermosillo, Sonora, Mexico. 8 Dec.

Megdal, S.B., **C.A. Scott**, P. Vandervoet, J. Callegary, A.H. Prichard (hosts and coordinators). *Arizona-Sonora Transboundary Aquifer Assessment Workshop*, Tucson, AZ, November 3-4, 2009.

Megdal, S.B., R. Sención, **C.A. Scott**, F. Díaz, L. Oroz, J. Callegary, **R.G. Varady**, 2010. Institutional assessment of the transboundary Santa Cruz and San Pedro aquifers on the United States–Mexico border. Presented at ISARM (Internationally Shared [Transboundary] Aquifer Resources Management. Paris, France. 6-8 Dec.

Mott-Lacroix, K. Assessing Water Supply Vulnerability in a Water Scarce State: The Arizona Water Sustainability Evaluation. XIV IWRA World Water Congress, Recife, PE, Brazil, Sept. 25-29.

**Pineda, N.** (session moderator). 2011. Adaptation and Economic Growth in Arid and Semiarid Regions of Developing Countries. XIV IWRA World Water Congress, Recife, PE, Brazil, Sept. 25-29.

**Pineda, N., and A. Salazar Adams.** 2011. XIV Growth with no water? The challenges of urban water management in Mexican arid regions vis-à-vis economic growth and climate change. IWRA World Water Congress, Recife, PE, Brazil, Sept. 25-29.

**Pineda Pablos, N., A. Salazar Adams**, A. Lutz Ley, **L.M. Silva Gutiérrez**, O. López Salido, V. Arvizu Cano, I. Carpio Montañó, W. Castro García, F.A. Rivas Paz. 2011. Vivienda precaria y grupos vulnerables al clima en la ciudad de Hermosillo, Sonora: Un estudio exploratorio. Primer avance de reporte de investigación. 25 mayo 2011

**Pineda, N., and A. Salazar.** 2009. Notas para la historia de los servicios urbanos de agua potable en Sonora. Simposio de la Sociedad Sonorense de Historia, Hermosillo, Sonora, Mexico. 25 Feb.

**Pineda, N., y A. Salazar.** 2008. Taller: Los flujos de información climática en la costa oeste de América del Norte. Hermosillo, Sonora, Mexico. 7 Nov.

**Pineda, N.** 2008. Agua potable en México: Historia reciente, actores, procesos y propuestas. XXII Convención anual de la Asociación Nacional de Empresas de Agua (ANEAS). Guadalajara, Jalisco, Mexico. 5 Nov.

**Pineda, N.** 2008. Los enfoques actuales del desarrollo regional. II Semana Académica. ITSON. Empalme, Sonora, Mexico. 23 Oct.

**Romero-Lankao, P.** 2009. Societal and environmental challenges to water management and use, lessons and insights from Mexico City. ASLO Aquatic Sciences Meeting. Nice, France. 28 Jan.

**Scott, C.A.** 2011. Localizing Decision-making in the Binational U.S.-Mexico Upper San Pedro River. XIV IWRA World Water Congress, Recife, PE, Brazil, Sept. 25-29.

**Scott, C.A.** 2011. Chair, International Scientific Committee. XIV World Water Congress ([www.worldwatercongress.com](http://www.worldwatercongress.com)), International Water Resources Association and Secretaria de Recursos Hídricos e Energéticos (Pernambuco), Porto de Galinhas, Brazil, 25-29 September, 2011.

**Scott, C.A.** 2011. Environmental and social change in the U.S.-Mexico borderlands: Climate, water, and demographic futures, *Sustainability on the Border: Water, Climate, and Social change in a Fragile Landscape*, El Paso, Texas, May 16-18, 2011.

**Scott, C.A.** 2011. The climate-groundwater-energy nexus in Mexico, *Workshop on Water, Climate, and Society in Mexico*. Guanajuato and San Miguel de Allende, Guanajuato, Mexico, May 11-12, 2011.

**Scott, C.A.** 2011. Strengthening resilience of transboundary riparian corridors, *School of Natural Resources & Environment Seminar Series*, University of Arizona, May 6, 2011.

**Scott, C.A.** 2011. Water resources and institutions in arid lands (series of four lecture/discussion sessions), *The arid and semiarid lands (ARL 564)*, University of Arizona, April 4, 6, 11, 13, 2011.

**Scott, C.A.** 2011(Presented by James Callegary, USGS, on behalf of multiple authors). Linking hydrology, geology, chemistry, and biology in the Upper Santa Cruz River Basin, *Santa Cruz River Researcher's Day*, Tucson, Arizona, March 29, 2011.

**Scott, C.A.** 2011. Host, *Climate Risk and Water Security in the Americas*, San José del Cabo, Baja California Sur, México, Feb. 27 – Mar. 2, 2011.

**Scott, C.A.** 2011. Groundwater as a strategic resource: managing overdraft or planned depletion? *School of Geographical Sciences and Urban Planning Colloquium Series*, Arizona State University, Tempe, Arizona, Feb. 9, 2011.

**Scott, C.A.** 2011. Host, *Inception Workshop: Strengthening Resilience of Arid Region Riparian Corridors: Ecohydrology and Decision-Making in the Sonora and San Pedro Watersheds*, Tucson, Arizona, Jan. 28, 2011.

**Scott, C.A.** 2011.Co-host, *Workshop on Infrastructure Sustainability, Resilience, and Robustness*, Tucson, Arizona, Jan. 13-14, 2011.

**Scott, C.A.** 2010. Keynote speaker "Gestão adaptativa de água em mudança de clima: EUA-México experiência transfronteiriça," *Northeast Water Resources Symposium*, Fortaleza, Brazil, November 16-20, 2010.

**Scott, C.A.** 2010. Adaptive water management in the context of urban growth and climate change, *Graduate Planning Society*, University of Arizona, October 15, 2010.

**Scott, C.A.** 2010. Session chair: Arizona-Sonora Transboundary Aquifer Assessment, Management, and Policy. *Arizona Hydrological Society – International Association of Hydrogeologists Symposium*, Tucson, Arizona, September 1-4, 2010.

**Scott, C.A.** 2010. Science, policy, and non-governmental organizations, *Making the Connection between Science and Decision Making (GEOG 696J) seminar*, University of Arizona, Sept. 29, 2010.

**Scott, C.A.** 2010. Water and place: the Santa Cruz River (guest lecture and field trip on Tucson's water resources and Santa Cruz River, *Place and Context: Social-Scientific Perspectives on Community (INDV102H) honors undergraduate seminar*, University of Arizona, September 7 & 14, 2010.

**Scott, C.A.** 2010. Host, *Water Reuse and Growth Workshop* (in association with 14<sup>th</sup> Annual Water Reuse and Desalination Research Conference), Tampa, FL, May 26, 2010.

**Scott, C.A.** 2010. Arizona – Sonora transboundary aquifer assessment, *University of Arizona Maricopa County Cooperative Extension*, May 27, 2010.

**Scott, C.A.** 2010. Vulnerabilidad y resiliencia al cambio climático, variabilidad, y crecimiento urbano en Tucson, Arizona (Vulnerability and resilience to climate change, variability, and growth in Tucson, Arizona). *IV Taller Binacional - Agua y Clima: Gestión Urbana de Agua, Cambio Climático y Estrategias Adaptativas para la Región Sonora y Arizona* (IV Binational Water and Climate Workshop—Urban Water Management, Climate Change, and Adaptive Strategies for the Arizona-Sonora Region), Hermosillo, Son., May 7, 2010.

**Scott, C.A.** 2010. Wastewater irrigation and health in low-income countries, *ADVANCE Data Blitz on Infectious Disease, University of Arizona, Bio 5*, April 26, 2010.

**Scott, C.A.** 2010. Optimization of conjunctive water supply and reuse systems with distributed treatment for high-growth, water-scarce regions. National Science Foundation, Emerging Frontiers in Research Innovation, Arlington, VA, March 18-19, 2010.

**Scott, C.A.** 2009. Co-host, *Arizona-Sonora Transboundary Aquifer Assessment Workshop*, Tucson, AZ, November 3-4, 2009.

**Scott, C.A.** 2009. Fortaleciendo el diálogo entre científicos-investigadores y gerentes-tomadores de decisión (Strengthening dialogue between scientist-researchers and manager-decisionmakers). *III Taller sobre Variabilidad y Cambio Climático en la Costa Oeste de América del Norte* (III Workshop on Climate Change and Variability in Western North America), Puerto Peñasco, Mexico, October 2, 2009.

**Scott, C.A.** 2009. Urban heat island and residential outdoor water demand. *Water Resources Research Center Seminar Series*, University of Arizona, October 21, 2009.

**Scott, C.A.** 2009. Physical environments in Arizona, Israel, and Palestine: landscape, physiography, climate, and current water availability. *Symposium on Water Policy in Semi-Arid Regions: Lessons from Arizona, Israel, and Palestine*, Tucson, AZ, August 31 – September 2, 2009.

**Scott, C.A.** 2009. Implicaciones de la sobre-explotación de aguas subterráneas para la adaptación y mitigación del cambio climático (Groundwater depletion implications for adaptation and mitigation of climate change). *II Taller sobre Variabilidad y Cambio Climático en la Costa Oeste de América del Norte* (II Workshop on Climate Change and Variability in Western North America), Instituto Mexicano de Tecnología del Agua, Cuernavaca, Mexico, July 22, 2009.

**Scott, C.A.** 2009. (Co-host and lead, research team presentation), *Researcher-Managers Workshop on Water and Energy Sustainability with Rapid Growth in the Arizona-Sonora Border Region*, Arizona Water Institute, Tucson, AZ, June 1, 2009.

**Scott, C.A.** 2009. Adapting to water scarcity and changing climate. *University of Arizona Environmental Summit*, April 22, 2009.

**Scott, C.A.** 2009. Panelist, Integrated Water Resources Management, *Best Practices for Stakeholder Engagement in Water Resources Planning*, Water Resources Research Center 2009 Annual Conference, University of Arizona, March 17, 2009.

**Scott, C.A.** 2009. Flujo de información a tomadores de decisión. *Dimensiones Humanas de Ciclones Tropicales* (Information flows to decision-makers. *Humans Dimensions of Tropical Cyclones*), organized by Centro de Ciencias de la Atmósfera, Universidad Nacional Autónoma de México, Acapulco, March 13, 2009.

**Scott, C.A.** 2009. U.S. – Mexico Border Water Policy: The Transboundary Aquifer Assessment Program Case, *Arizona Water Policy (SWES 596B) seminar*, University of Arizona, March 6, 2009.

**Scott, C.A.** 2009. The global commodification of wastewater. Panel on *New Trends in Regulation*, Symposium on *Water Governance: the Public-Private Debate*, organized by Unité Mixte Internationale (University of Arizona and Centre National de la Recherche Scientifique), University of Arizona, February 4, 2009.

- Scott, C.A.** 2009. Geography and international development. *Departmental Colloquium (Geography & Regional Development)* "Life After Graduate School" panel, University of Arizona, January 16, 2009.
- Scott, C.A.** 2008. The United States – Mexico Transboundary Aquifer Assessment Program. *Water Resources Research Center Seminar Series, University of Arizona*, December 8, 2008.
- Scott, C.A.** 2008. Perceptions of wastewater: users and institutions for beneficial use. Wastewater Irrigated Food: Consumer Health Risk Assessment, On-farm and Off-farm Options for Health Risk Mitigation, and Wastewater Governance in Low-income Countries. Symposium organized by International Development Research Centre, International Water Management Inst., World Health Organization, Accra, Ghana, Oct. 6-9, 2008.
- Scott, C.A.** 2008. Session chair: Energy and Water Ethics. *American Institute of Professional Geologists and Arizona Hydrological Society Symposium* "Changing Waterscapes and Water Ethics for the 21<sup>st</sup> Century." Flagstaff, Arizona, September 20–24, 2008.
- Scott, C.A.** 2008. Adaptive water resources management under climatic uncertainty in western North America (and member of workshop organizing committee). *Regional Climate Forum for Northwest Mexico and the Southwest United States* (Centro de Investigación Científica y de Educación Superior de Ensenada and NOAA), Ensenada, Baja California, April 10-11, 2008.
- Scott, C.A.** 2007. Water and energy management challenges on the Arizona-Mexico border. *Southwest Hydrology and Arizona Hydrological Society Regional Water Symposium*, Tucson, AZ, August 31, 2007.
- Scott, C.A.** 2007. Session chair: Coupled water and energy demand in the Southwest and U.S.-Mexico border region. *Southwest Hydrology and Arizona Hydrological Society Regional Water Symposium*, Tucson, AZ, August 31, 2007.
- Scott, C.A.** 2007. Irrigated area mapping in heterogeneous landscapes with MODIS time series, ground truth and census data, Krishna Basin, India. *Remote Sensing for the Study of Planet Earth (OPTI 590) seminar*, University of Arizona, April 26, 2007.
- Scott, C.A.** 2007. The water-energy nexus in Mexico: groundwater sustainability along the border with the United States. *Departmental Seminar Series (Hydrology & Water Resources)*, University of Arizona, February 21, 2007.
- Scott, C.A.** 2007. Wastewater use in irrigated agriculture: closing the rural-urban-rural water loop. *Departmental Seminar Series (Soil, Water & Environmental Science)*, University of Arizona, February 19, 2007.
- Scott, C.A.** 2007. Conjunctive management of surface and groundwater. *Arizona Water Policy (SWES 596B) seminar*, University of Arizona, January 19, 2007.
- Scott, C.A.** 2006. Mapping root zone soil moisture using remotely sensed optical imagery. *Physical Geography (GEOG 696C) seminar*, University of Arizona, September 21, 2006.
- Slack, J.** 2010. Acceso al agua durante la época del cambio climático: Nogales, Sonora. Presented at Primer Congreso de la Red de Investigadores Sociales Sobre el Agua Sede centro de capacitación del Instituto Mexicano de Tecnología del Agua Jiutepec, Morelos, Mexico March 2010.
- Slack, J., and M. Wilder.** 2010. Niveles de acceso al agua en Nogales, Sonora durante la época del Cambio Climático. Presented at the Binational Colloquium on Transborder Human Development in the Arizona-Sonora Region. Nogales, Sonora, Mexico. May 2010.
- Smith, R.E., and **A. Browning-Aiken.** 2011. Aplicação do Modelo de Governança da Água e do Território Para a Criação de Unidade de Conservação Emitapema, Santa Catarina, Brasil. XIV IWRA World Water Congress, Recife, PE, Brazil, Sept. 25-29.

**Sugg, Z.P.** 2011. A legal-geographical perspective on regulating the groundwater commons. Association of American Geographers Annual Meeting, Seattle, WA, April 12-16, 2011.

**Sugg, Z.P., Scott, C.A.,** Moran, M.S., van Leeuwen, W.J.D., Hamerlynck, E.P., Holifield Collins, C.D. 2010. Aerial Photo Classification for Monitoring the Spread of *Eragrostis lehmanniana* in a Semiarid Arizona Grassland. Poster presented at the Phenology Research and Observations of Southwest Ecosystems (PROSE) Symposium, University of Arizona, Tucson, AZ, October 1, 2010.

**Varady, R.G.** (session moderator). 2011. Governance and Management of Transboundary Waters. XIV IWRA World Water Congress, Recife, PE, Brazil, Sept. 25-29.

**Varady, R.G.** 2011. Groundwater Policy and Governance: Ideas for a White Paper. Presented at GEF Project on "Groundwater Governance," First Experts Meeting. UNESCO IHP. Paris, France. 29 April 2011.

**Varady, R.G.** 2011. Ideas for ISARM's (Internationally Shared Aquifer Resources Management) Vision for Good Policies and Governance. Presented at ISARM Experts Meeting "Lessons Learnt and Ways Forward." UNESCO IHP. Paris, France. 28 April 2011.

**Varady, R.G.** 2011. Confronting aridity and transboundary issues. Presented at workshop, "Water: Managing a Precious Resource – Transatlantic Views." The French-American Foundation/France and the U.S. Embassy in France. Paris, France. 23 Mar.

**Varady, R.G., G.M. Garfin, C.A. Scott, M. Wilder, N. Pineda.** 2010. Integrated climate and water resources assessment for adaptive management in western North America. Presented at symposium, "Rewriting water history, reconstructing water politics, exploring water institutions in Israel/Palestine." French Research Centre in Jerusalem (CFRJ). Jerusalem, Israel. 28-29 Nov.

**Varady, R.G., C.A. Scott,** S.B. Megdal, and **J.P. McEvoy.** 2010. Transboundary aquifer institutions, policies, and governance: A preliminary inquiry. Presented at ISARM (Internationally Shared [Transboundary] Aquifer Resources Management. Paris, France. 6-8 Dec.

**Varady, R.G.** 2010. Findings from project, "Information flows and policy: Use of climate diagnostics and cyclone prediction for adaptive water-resources management under climatic uncertainty in western North America." Presented at Synthesis Meeting of the Inter-American Institute for Global Change Research (IAI). Buenos Aires, Arg. 5 Aug.

**Varady, R.G.** 2010. Global water governance: Confronting aridity, climate change, and transboundary conflict. Presented as part of Roy F. Weston Distinguished Global Sustainability Lecture Series, "Balancing Global Water Demands for Food, Sanitation, Energy, and Ecosystems." Center for Sustainability and the Global Environment, Gaylord Nelson Institute for Environmental Studies, University of Wisconsin-Madison. 29 Apr. (invited).

**Varady, R.G.** 2010. Environmental change and institutions in the U.S.-Mexico border region. Presented at UC MEXUS Colloquium, "Perspectives on the U.S.-Mexico Border Wall." Riverside, CA. 22 Feb. (invited).

**Varady, R.G.,** I. Aguilar Barajas, and G. Mejía Velázquez. 2010. Environment and security in the U.S.-Mexico border region: Water and air issues. Presented at the Puentes Consortium Mexico-U.S. Higher Education Leadership Forum. Houston, TX. 14 Jan. (invited).

**Varady, R.G. C.A. Scott, M. Wilder,** and **G.M. Garfin.** 2010. Integrated Climate and Water Resources Assessment for Adaptive Management in Western North America. To be presented at AGU Conference of the Americas. Iguazu, Brazil. 8-13 Aug. 2010.

**Varady, R.G.** 2009. Information flows and policy: Use of climate diagnostics and cyclone prediction for adaptive water-resources management under climatic uncertainty in western North America. Presented at Joint Principal Investigators' Meeting of the Inter-American Institute for Global Change Research (IAI). Montevideo, Uruguay. 24 June.

**Varady, R.G.** 2009. Navigating institutional challenges to cross-border climate research. Presented at International Workshop for CHANGE (Climate and Hydrology Academic Network for Governance and the Environment). Mexico City, D.F., Mexico. 5 Mar. (invited).

**Varady, R.G.** 2009. Member of panel on: Challenges posed by climate change and drought and their impacts on water availability and society in North America. Workshop on Climate-Related Water Constraints and Their Implications for Relations Across North American Boundaries. México City, D.F., Mexico. 5-6 Mar.

**Varady, R.G., R. Salmón Castelo, and S. Eden.** 2009. Key issues, institutions, and strategies for managing transboundary water resources in the Arizona-Mexico border region. Presented at "Arizona-Israeli-Palestinian Water Management and Policy Workshop: Economic, Environmental, and Community Implications of Expanding Reuse and Desalination for Future Water Supplies." Tucson, AZ. 1 Sept.

**Varady, R.G., M. Wilder, C.A. Scott, N. Pineda, B.J. Morehouse, and G. Garfin.** 2009. Institutions and societal impacts of climate in the Arizona-Sonora portion of the U.S.-Mexico border region. Presented (by M. Wilder) at Open Meeting of the International Human Dimensions Program (IHDP). Bonn, Germany. 26-30 Apr.

**Varady, R.G., M. Wilder, C.A. Scott, G. Garfin, N. Pineda, B. Morehouse, A. Coles, J. McEvoy, K. Sammler.** 2009. Climate, society, and information flows in the U.S.-Mexico border region. Poster presented at the International Alliance of Research Universities: International Scientific Congress on Climate Change. Copenhagen, Denmark. 10-12 Mar.

**Varady, R.G.** 2008. Water in the U.S.-Mexico border region: A look at hotspots. Presented at Colloquium at North-West University. Gauteng, South Africa. 29 April. Also presented at Séminaire Interdisciplinaire sur le Développement Durable (SIDDD). Lille, France. 18 Sept.

**Varady, R.G.** 2008. Information flows and policy: Use of climate diagnostics and cyclone prediction for adaptive water-resources management under climatic uncertainty in western North America. Presented at Joint Principal Investigators' Meeting of the Inter-American Institute for Global Change Research (IAI). Panama City, Panama. 21 Feb.

**Varady, R.G., G. Garfin, B. Morehouse, and M. Wilder.** 2007. Institutions and societal impacts of climate in the Lower Colorado and San Pedro Basins of the U.S.-Mexico Border region. Presented at AGU Joint Assembly. Acapulco, Mexico. 25 May.

**Wilder, M.** 2010. Water and Climate Change in Border Cities: Binational Collaboration Toward Adaptive Governance. Paper accepted for presentation at the Urbanization and Global Environmental Change conference, Arizona State University, Tempe, Arizona. October 15-17, 2010.

**Wilder, M.** 2010. Research, Networks, and Collaboration: Shaping Governance Strategies for the Colorado Delta. Invited presentation at Toward a Sustainable 21st Century: Marine Conservation, Law and Governance--Mexico's Northwest Coast. Newkirk Center, University of California, Irvine, May 14, 2010.

**Wilder, M. (Session Organizer).** 2010. El Agua en las Regiones Fronterizas: gestion y politica. Primer Congreso, Red de Investigadores de Ciencias Sociales acerca del Agua (ISSA), Mexican Institute of Water Technology, Jiutepec, Morelos, 19 March.

**Wilder, M., C.A. Scott, N. Pineda Pablos, R.G. Varady, G. Garfin, and J. McEvoy.** 2010. Vulnerability and Adaptation in a Transboundary Context: Binational Approaches to Assessing Urban Vulnerability and Adaptation in the U.S.-Mexico Border Region. Association of American Geographers Annual Meeting, Washington, D.C. 16 April, 2010.

**Wilder, M., C.A. Scott, N. Pineda Pablos, R.G. Varady, G. Garfin, and J. McEvoy.** 2010. Adaptando al Cambio Climático: El Agua y la Vulnerabilidad Urbana and la Frontera México-EEUU. Primer Congreso, Red de Investigadores de Ciencias Sociales acerca del Agua (ISSA), Mexican Institute of Water Technology, Jiutepec, Morelos, 19 March.

**Wilder, M., R.G. Varady, C.A. Scott, N. Pineda, G.M. Garfin, J. McEvoy, and J. Slack.** 2010. Water and vulnerability: Building adaptive capacity in urban areas of the U.S.-Mexico border. Presented at Global Land Project Open Science Meeting 2010. Tempe, AZ. 18 Oct.

**Wilder, M., C.A. Scott, N. Pineda Pablos, R.G. Varady, G. Garfin, and J. McEvoy,** 2009. Adapting across boundaries: Knowledge, social learning and resilience in the US-Mexico border region. Paper presented at Earth Systems Governance Conference. Amsterdam, Netherlands. 3 Dec.

**Wilder, M.** with **R. Díaz.** 2009. Communities, conservation and climate change: New geographies of climate change governance in the binational Colorado Delta Region (juried selection of papers). Presented at the International Human Dimensions of Global Change (IHDP) Open Meeting. Bonn, Germany. 26-30 Apr.

**Wilder, M.** with **R. Díaz.** 2009. Water, cities, and peri-urban vulnerabilities in Northwest Mexico. Association of the American Geographers Annual Meeting. Las Vegas, NV. 22-27 Mar.

**Wilder, M.** 2008. Una sobre-vista de los proyectos NOAA-SARP y CLIMAS. Inter-American Institute on Global Change Research (IAI) Stakeholders' Workshop. Universidad de Sonora. Hermosillo, Sonora, Mexico. 7 Nov.

**Wilder, M.** 2008. Sobre agua, ciudades y gestión adaptativa. Inter-American Institute on Global Change Research (IAI) Stakeholders' Workshop. Universidad de Sonora. Hermosillo, Sonora, Mexico. 7 Nov.

**Wilder, M.** 2008. Overview of NOAA-SARP and CLIMAS projects on water, cities, and adaptive management. Institute for the Study of Planet Earth and Udall Center for Studies in Public Policy, University of Arizona. Tucson, AZ. 26 Sept.

**Wilder, M.** 2008. Political and economic apertures: The shifting state-society relationship and national water policy transition in Mexico. Invited paper for International Water Transitions workshop, University of Amsterdam. Amsterdam, The Netherlands. 3-4 July.

**Wilder, M.** 2008. Promises under construction: The evolving water governance paradigm and the case of northern Mexico. Invited participant at the Rosenberg International Forum for Water Policy. Zaragoza, Spain, 23-28 June.

**Wilder, M.** 2008. How does the public fit in? Climate change, adaptation and social stakeholders in the Southwest US and Northwest Mexico. Guest lecture, Department of Political Science, University of Redlands. Redlands, CA. 16 May.

**Wilder, M.** 2008. New geographies of environmental governance: Communities, conservation and climate change in the Colorado Delta and border region. Spaces and Society Lecture Series, Department of Political Science, University of Redlands. Redlands, CA. 15 May.

**Wilder, M.** 2008. New geographies of environmental governance: Communities, conservation and climate change in the Colorado Delta and border region. Association of the American Geographers Annual Meeting. Boston, MA. 17 April.

**Wilder, M.** 2008. The environment for water: 21<sup>st</sup>-Century transitions in Mexican water policy and implications for Sonora. Rocky Mountain Council on Latin American Studies (RMCLAS) 2008 Meeting. Flagstaff, AZ. 11 Apr.

**Wilder, M.** 2008. Transboundary water: Problems and challenges. Presented to Mexican Migration Scholarship Meeting, Consortium of North American Higher Education (CONAHEC), University of Arizona. Tucson, AZ. 9 Apr.

**Wilder, M.** 2008. Water governance in Mexico. Presented to the International Water History Association (IWA) Board. Tucson, AZ. 19 Mar.

**Wilder, M.** 2008. Communities, conservation, and climate change: New geographies of environmental governance in the binational Colorado Delta Region. Department of Geography and Regional Development Colloquium, University of Arizona. Tucson, AZ. Feb.

**Wilder, M., R.G. Varady, N. Pineda, A. Browning-Aiken, R. Díaz, and G. Garfin.** 2007. New water management institutions in Mexico's 'new culture of water': Emerging opportunities and challenges for effective use of climate knowledge and climate science. Presented at AGU Joint Assembly. Acapulco, Mexico. 23 May.

## LEVERAGED FUNDING

The research team has built synergies with the following leveraged awards:

2011-2013. Managing Demand and Rethinking Supply: Adaptation, Conservation, and Planning in the Drought-prone Southwestern United States and Northwest Mexico. NOAA Climate-Societal Interactions grant. PI M. Wilder, Co-PI's: G.M. Garfin & R.G. Varady.

Total award amount: \$300,000 (contract is pending, expected Aug. 2011).

2002-07. Variability, social vulnerability, and public policy in the southwestern United States (Climate Assessment of the Southwest, CLIMAS). (J. Overpeck, Institute for the Study of Planet Earth, PI M. Wilder, Co-PI, National Oceanic and Atmospheric Administration (NOAA)). University of Arizona. Tucson, AZ. Total award amount: \$5,910,447. Wilder percentage: 8.37 %

2003-06. Use of Climate-Information Products by Water Managers and Other Stakeholders in Two GCIP/GAPP Watersheds in Arizona/Sonora and Oklahoma. (R. Varady, PI, M. Wilder, Co-PI, National Oceanic and Atmospheric Association (NOAA) Office of Global Programs (OGP), 2003-2006). Total award: \$236,000.

2007-12. CLIMAS Integrating climate science for decision-support, mitigating risk and promoting resilience: Climate assessment for the southwest. NOAA Climate Program Office (\$4,000,000 over 5 years). (J. Overpeck - PI; G. Garfin, M. Wilder, B. Morehouse – co-PIs). NOAA Climate Program Office. Approx. \$50,000/year for 3 years.

2007-11. Information flows and policy: Use of climate diagnostics and cyclone prediction for adaptive water-resources management under climatic uncertainty in western North America (C.A. Scott - PI; R. Varady, G.M. Garfin, N. Pineda, M. Montero – co-PIs). \$147,286 + \$119,000 (phase 2), Inter-American Institute for Global Change Research.

2007-08. Geospatial analysis of urban thermal gradients: Application to Tucson, Arizona's projected water demand (C.A. Scott – PI; S. Yool, A. Comrie – co-PIs). \$12,000. United States Geological Survey 104B administered by University of Arizona Water Resources Research Center.

2007. Coupled water and energy demand in the Arizona-Sonora border region: Groundwater pumping, municipal water services, and electrical power interactions (C.A. Scott – PI, R. Varady – co-PI). \$10,000, Arizona Water Institute.

2007. Rural and environmental water gradients under rapid urban expansion in water-scarce basins (C.A. Scott – PI). \$51,000, International Water Management Institute.

2008. Border-area climate change impacts and water sector adaptation workshop (G. Garfin - PI). \$13,000, California Department of Water Resources.

2008. Travel funding for two graduate student research assistants (J. McEvoy and A. Coles) to attend the joint International American Institute (IAI) – National Center Atmospheric Research (NCAR) colloquium on Seasonality and Water Resources in the Western Hemisphere in Mendoza, Argentina (10/06/08-10/17/08) (\$3,000/participant). Total award: \$6,000.

2008. The Foro Climatico Regional (Regional Climate Forum) for Northwest Mexico and the Southwest United States, April 10-11, at CICESE, Ensenada, Baja California. The Forum included participants from Mexico and the U.S. The Forum leveraged funds from the SARP project and contributed to building collaboration between U.S. and Mexican scientists in the region, and also contributed to the summer.

2008-09. Water and energy sustainability with rapid growth in the Arizona-Sonora border region (C.A. Scott – PI, M. Pasqualetti – co-PI). \$50,000, Arizona Water Institute.

2008-09. Climate-related water constraints and their implications for relations across international boundaries: The North American experience. The Climate and Hydrology Academic Network for Governance and the Environment (CHANGE). (G. Garfin - PI, V. Magana, R. Stewart - co-PIs). \$10,300 Embassy of Canada; \$5,000 NIDIS; \$3,000 Drought Research Initiative (Canada); \$7,000 Agriculture and Agri-Food Canada; \$3,000 Instituto Nacional de Ecología (Mexico) 11.

2008-12. Optimization of Dual Conjunctive Water Supply and Reuse Systems with Distributed Treatment for High-Growth Water-Scarce Regions (K. Lansey – PI; Lansey, R. Arnold, G. Bayraksan, C. Choi, C.A. Scott co-PIs). \$1,999,558 (plus \$30,725 supplement), National Science Foundation, Resilient and Sustainable Infrastructures (RESIN).

2008-10.2008. United States – Mexico transboundary aquifer assessment program (S. Megdal – PI, C.A. Scott, J. Callegary – co-PIs). \$333,333, United States Geological Survey.

2009. Water reuse to offset growth-driven water scarcity in the southwest: From supply augmentation to substitution (C.A. Scott – PI; R. Varady, A. Browning-Aiken – co-PIs). Award amount: \$74,789. WateReuse Foundation.

2009. In-kind contribution from University of Arizona's Institute for the Study of Planet Earth (ISPE). \$3,000 for staff time and graphic production of the Binational Climate Summary. (G. Garfin)

2009. In-kind contribution from University of Arizona's Institute for the Study of Planet Earth (ISPE). \$1,400 for staff time for the contributions towards the production of the 2009 Border Governors Conference planning and final report.

2009-10. Database Creation: Transboundary San Pedro Valley Aquifer (C.A. Scott, PI). \$10,000, United States Geological Survey 104B administered by University of Arizona Water Resources Research Center ([ag.arizona.edu/azwater/taap](http://ag.arizona.edu/azwater/taap))

2010. Travel funding for one graduate student research assistant (J. McEvoy) to present a paper at the Initiative on Climate Adaptation Research and Understanding through the Social Sciences (ICARUS) Workshop, University of Illinois Champaign-Urbana (02/10). Total award: \$800.

2010. Pre-dissertation research award from University of Arizona's Social and Behavioral Science Research Institute for one graduate student research assistant (J. McEvoy) to continue related research on urban water vulnerability in Baja California (03/10). Total award: \$600.

2010. Pre-dissertation research award from University of Arizona's SBSRI Dissertation Development Award for one graduate student research assistant (J. McEvoy) to continue related research on urban water vulnerability in Baja California (04/10). Total award: \$1,000

2010. Student fellowship awarded from the University of Arizona's Water Sustainability Program to one graduate student research assistant (J. McEvoy) to continue related research on water vulnerability in northwestern Mexico. Total award: \$18,500

2010. Travel funding for one graduate student research assistant (J. McEvoy) to present a paper at the Initiative on Climate Adaptation Research and Understanding through the Social Sciences (ICARUS) Writeshop, University of Michigan (06/10). Total award: \$600.

2010-15. Strengthening Resilience of Arid Region Riparian Corridors: Ecohydrology and Decision-Making in the Sonora and San Pedro Watersheds (C.A. Scott, PI). \$1,400,000. National Science Foundation, Coupled Natural-Human Systems ([udallcenter.arizona.edu/wrpg/cnh](http://udallcenter.arizona.edu/wrpg/cnh)).

2010-12. Arid Cities in Changing Climates: Urban Land and Water Use in the Desert Southwest (C.A. Scott, Co-PI). \$138,837, Dept. Interior, Bureau of Reclamation WaterSMART; and \$29,973, Univ. Arizona Water Sustainability Program.

2010. R. Varady graduate research assistant support for “Water Quality, Public Records Research, Survey of Health Effects in Ambos Nogales.” USGS. \$22,000 (Mar. 2010-Mar. 2011).

2010 and annually since 1995. Support (R. Varady) for “Oct. 2010-Sept. 2011 Workplan.” Cooperative agreement with Udall Foundation. \$330,000/year. Approx. 10% of these funds support the suite of projects covered in this document.

2010-11. Institute of the Environment Faculty Exploratory Research Grant to R. Varady work on sabbatical project, “Transboundary aquifer institutions, policies, and governance.” \$10,000.

2011. Workshop on Infrastructure Sustainability, Resilience, and Robustness (C.A. Scott, Co-PI). \$49,659, National Science Foundation, Resilient and Sustainable Infrastructures (RESIN).

2011-2012. NSF Doctoral Dissertation Research Improvement Grant to support doctoral fieldwork on “Desalination and Development: The Technological Transformation of the Gulf of California in the Face of Climate Change” (J. McEvoy, M. Wilder). \$13,880.

2011-2012. Fulbright Award (IIE) to support doctoral fieldwork on “Desalination and Development: The Technological Transformation of the Gulf of California in the Face of Climate Change” (J. McEvoy, M. Wilder). Award amount \$14,100.

2011-2014. Towards an integrated assessment of water security under global change in the Americas: Exploring synergies and expanding current IAI networks Inter-American Institute for Global Change Research. Joint PI's: C.A. Scott, F. Meza (Univ. Católica de Chile). Total Amount Recommended for Award (pending NSF release of approved funds): \$300,000