

Publications -- all

Books

Li J., Swinbank, R., Grotjahn, R., Volkert, H. (eds) (2016). Dynamics and Predictability of Global and Regional High-Impact Weather and Climate Events, Cambridge, England: Cambridge University Press, ISBN 978-1- 107-07142- 1.

Moyle, P.B., Quiñones, R. M., Katz, J.V.E., and Weaver, J. (2015). Fish Species of Special Concern in California. Sacramento: California Department of Fish and Wildlife. 3rd edition. 842 pp. <https://www.wildlife.ca.gov/Conservation/Fishes/Special-Concern>

Journal articles

Brown, C., Lund, J., Cai, X., Reed, P., Zagona, E., Ostfeld, A., Hall, J., Characklis, G., Yu, W., and Brekke, L. (2015). [The future of water resources systems analysis: toward a scientific framework for sustainable water management](#). *Water Resources Research*, 51(8):6110–6124.

Bruno*, E. (2015). Coping with future water woes in the western United States, *Eos*, 96, doi:10.1029/2015EO032717.

Chornesky, E.A., Ackerly, D., Beier, P., Davis, F. W., Flint, L. E., Lawler, J.J., Moyle, P.B., Moritz, M. A., Scoonover, M., Byrd, K., Alvarez P., Heller, N. E., Micheli, E. R., and Weiss, S. B. (2015). Adapting California's ecosystems to a changing climate. *BioScience* 65(3):247-262. doi: 10.1093/biosci/biu233

DeVincentis*, A.J., Brumfield, R.G., Gottlieb, P., and Johnson, J.R. (2015). Cost analysis of using recycled water in container production: a case study of southern New Jersey. *HortScience* 50(8):1196-1201.

Durand, J., Fleenor, W., McElreath, R., Santos, M., and Moyle, P. (2016). Physical controls on the distribution of the submersed aquatic weed *Egeria densa* in the Sacramento-San Joaquin Delta and implications for habitat. *San Francisco Estuary and Watershed Science* 14 (1). doi:http://dx.doi.org/10.15447/sfew.2016v14iss1art4

Elliott*, E. A., Yu, S., Kooperman, G., Morrison, H., Wang, M, and Pritchard, M. S. (2016) Sensitivity of summer ensembles of superparameterized US mesoscale convective systems to cloud resolving model microphysics and grid configuration, *Journal of Advances in Modelling Earth. Systems*, DOI: 10.1002/2015MS 000567

Escriva-Bou, A., Lund, J.R., Pulido-Velazquez, M. (2015) [Optimal residential water conservation strategies considering embedded energy in California](#), *Water Resources Research*, 51(6): 4482-4498. <http://onlinelibrary.wiley.com/doi/10.1002/2014WR016821/full>

Foster*, L.M., Bearup, L.A., Molotch, N.P., Brooks, P.D. and Maxwell, R.M. (2016). Energy budget increases reduce mean streamflow more than snow-rain transitions: using integrated modeling to isolate climate change impacts on Rocky Mountain hydrology. *Environmental Research Letters*, 11(40). doi:10.1088/1748-9326/11/4/044015.

The link is: <http://iopscience.iop.org/article/10.1088/1748-9326/11/4/044015>

The awesome video abstract Lauren made is here: <http://bcove.me/q0x1o7ke>

Gilbert*, J.M., Jefferson, J.L., Constantine, P.G. and Maxwell, R.M. (2016) Global spatial sensitivity of runoff to subsurface permeability using the active subspace method. *Advances in Water Resources*, 92:30-42. doi:10.1016/j.advwatres.2016.03.020.

The link is: <http://www.sciencedirect.com/science/article/pii/S030917081630080X>

Grogan, D., Nathan, T. and Chen, S. (2016). Effects of Saharan dust on the linear dynamics of African easterly waves. *Journal of Atmospheric Science* 73:981-911, DOI: 10.1175/JAS-D-15-0143.1.

Grotjahn, R., Black, R., Leung, R., Wehner, M., Barlow, M., Bosilovich, M., Gershunov, A., Gutowski, W.J., Gyakum, J.R., Katz, R.W., Lee, Y-Y., Lim, Y-K., and Prabhat. (2016) North American extreme temperature events and related large scale meteorological patterns: a review of statistical methods, dynamics, modeling, and trends. *Climate Dynamics* 46: 1151-1184. DOI: 10.1007/s00382-015- 2638-6.

Grotjahn, R. and Lee Y-Y. (2016) On climate models simulations of the large-scale meteorology associated with California heat waves. *Journal of Geophysical Research, Atmospheres*, 121: 18-32. DOI: 10.1002/2015JD024191.

Huang, X., Rhoades*, A. M., Ullrich, P. A., and Zarzycki, C. M. (2016), An evaluation of the variable-resolution-CESM for modeling California's climate, *Journal of Advances in Modeling Earth Systems*, 8, doi:10.1002/2015MS000559.

Jefferson, J.L., Gilbert*, J.M., Constantine, P.G., Maxwell, R.M. (2015). Active subspaces for sensitivity analysis and dimension reduction of an integrated hydrologic model. *Computers & Geosciences* 83:127–138. doi:10.1016/j.cageo.2015.07.001

Lee, Y-Y. and Grotjahn R. (2016) California Central Valley summer heat waves form two ways. *Journal of Climate*, 29: 1201-1217. DOI: 10.1175/JCLI-D- 15-0270.1.

Liu L., Lin, Y.-L., and Chen, S.-H. (2016). Effects of landfall location and approach angle of an idealized tropical cyclone over a long mountain range. *Frontiers in Earth Science*. 4:14. doi: 10.3389/feart.2016.00014

Lund, J.R. (2015). [Integrating social and physical sciences in water management](#), *Water Resources Research*, 51(8):5905–5918.

- Lusardi, R.A., Stephens, M. R., Moyle, P.B., McGuire, C.L., and Hull, J. M. (2015). Threat evolution: negative feedbacks between management action and species recovery in threatened trout (Salmonidae). *Reviews in Fish Biology and Fisheries* 25: 521-535.
- Markovich, K.H., Maxwell, R.M., & Fogg, G.E., 2016. Hydrogeological response to climate change in alpine hillslopes. *Hydrological Processes*, DOI:10.1002/hyp.10851
- Medellín-Azuara, J., MacEwan, D., Howitt, R.E., Koruakos, G., Dogrul, E.C. Brush, C.F., Kadir, T.N., Harter, T., Melton, F., Lund, J.R. (2015). [Hydro-economic analysis of groundwater pumping for California's Central Valley irrigated agriculture](#). *Hydrogeology Journal*, 23(6):205-1216 (*Editors' Choice* article for 2015)
- Nelson, T., Chou, H., Zikalala, P., J. Lund, R. Hui, and J. Medellin-Azuara. (2016). [Economic and Water Supply Effects of Ending Groundwater Overdraft in California's Central Valley](#), *San Francisco Estuary and Watershed Science*, 14(1): Article 7. <http://escholarship.org/uc/item/03r6s37v>
- Nelson, T., Hui, R., Lund, J., and Medellin-Azuara, J. (2016). [Reservoir Operating Rule Optimization for California's Sacramento Valley](#). *San Francisco Estuary and Watershed Science*, 14(1): Article 6. <http://escholarship.org/uc/item/4cp4767v>
- O'Geen A, Saal M, Dahlke H, Doll D, Elkins R, Fulton A, Fogg G, Harter T, Hopmans J, Ingels C, Niederholzer F, Solis S, Verdegaaal P, Walkinshaw M. (2015). Soil suitability index identifies potential areas for groundwater banking on agricultural lands. *Cal Ag* 69(2):75-84. DOI: 10.3733/ca.v069n02p75.
- Perales, K.M., Rowan, J., and Moyle, P.B. (2015). Evidence of landlocked Chinook Salmon populations in California. *North American Journal of Fisheries Management* 35:1101-1105. DOI: 10.1080/02755947.2015.1082518
- Porse, E. and Lund, J. (2016). [Network analysis and visualizations in California water: Linking connectivity and resilience](#). *Journal of Water Resources Planning and Management*, 142(1): 04015041. DOI: 10.1061/(ASCE)WR.1943-5452.0000556
- Quiñones R.M. and Moyle, P.B. (2015). California's freshwater fishes: status and management. *Fishes in Mediterranean Environments* 2015.001: 20p
- Rhoades*, A.M., X. Huang, P.A. Ullrich and C.M. Zarzycki (2016) Characterizing Sierra Nevada Snowpack Using Variable-Resolution CESM. *Journal of Applied Meteorology and Climatology*. 55:173–196, doi: 10.1175/JAMC-D-15-0156.1.
- Roberts*, S. N., and Foster*, L. (2016). Citizens of a Watershed: The Colorado River Compact and The Exigencies of Drought." *Environment & Society Portal*, Arcadia Spring 2016, no.1. <Http://www.environmentandsociety.org/node/7403>.
- Schroeter, R.E., O'Rear, T. A., Young, M. J., and Moyle, P. B. (2015) The aquatic trophic ecology of Suisun Marsh, San Francisco Estuary, California, during autumn in a wet year. *San Francisco Estuary and Watershed Science* 13 (3):Article 6. doi: <http://dx.doi.org/10.15447/sfews.2015v13iss3art6>

Shen, J., Cheng, C., Cheng, X., and Lund, J. (2016). [Coordinated operations of large-scale UHVDC hydropower and conventional hydro energies about regional power grid](#)," *Energy* 95:433-446, DOI: 10.1016/j.energy.2015.12.011.

Suddeth, R. and Lund, J. (2016). [Multi-Purpose Optimization of Reconciliation Ecology for an Engineered Floodplain - Yolo Bypass, California](#), *San Francisco Estuary and Watershed Science*, 14(1): Article 5. <http://escholarship.org/uc/item/28j7r0hd#page-1>

Yarnell, S.M., Petts, G.E., Schmidt, J.C., Whipple*, A.A., Beller, E.E., Dahm, C.N., Goodwin, P., and Viers, J.H. (2015). Functional flows in modified riverscapes: Hydrographs, habitats and opportunities. *BioScience* 65: 963-972. DOI: 10.1093/biosci/biv102.

b. non-refereed journal articles

AghaKouchak, A., Feldman, D., Hoerling, M., Huxman, T. and Lund, J. (2015). [Water and climate: Recognize anthropogenic drought](#). *Nature*, comment, Vol. 524, p. 409-411.

Howitt, R.E., J. Medellín-Azuara, D. MacEwan, J.R. Lund, and D.A. Sumner (2015). [Economic Impact of the 2015 Drought on Farm Revenue and Employment](#). *Agricultural and Resource Economics Update*, Special Issue: The Economics of the Drought for California Food and Agriculture, Vol. 18, No. 5.

Levy*, M., Lubell, M., McRoberts, N. (2016) Mental Models of Sustainable Agriculture, <http://environmentalpolicy.ucdavis.edu/briefs/mental-models-sustainable-agriculture>.

Medellín-Azuara, J., MacEwan, D. Lund, J.R. Howitt, R.E., and Sumner, D.A. (2015). [Agricultural Irrigation in This Drought: Where Is the Water and Where Is It Going?](#), *Agricultural and Resource Economics Update*, Special Issue: The Economics of the Drought for California Food and Agriculture, Vol. 18, No. 5.

Book Chapters

Duffy, W.G., Garone, P. B., Grewell, J., Kahara, S., Fleskes, J., Helm, B., Moyle, P., Records, R., and Silveira, J. (2016). Wetlands. In Mooney, H and E. Zaveleta (Eds). *Ecosystems of California* (Pp 669-692). Oakland, CA: University of California Press.

Grotjahn, R. (2016) Western North American Extreme Heat, Associated Large Scale Synoptic-Dynamics, and Performance by a Climate Model, In: J. Li, R. Swinbank, R. Grotjahn, H. Volkert, (Eds), *Dynamics and Predictability of Global and Regional High-Impact Weather and Climate Events* (Pp. 198-209). Cambridge: Cambridge University Press, ISBN 978-1-107-07142- 1.

Hanak, E. and Lund, J. (2015) [Portfolio approaches to reduce costs and improve reliability of water supplies](#). In Lassiter, A. (ed.), *Sustainable Water – Challenges and Solutions for California* (pp. 151-177). Oakland, CA: University of California Press. ISBN: 9780520285354.

Light, T. and Moyle, P. B. (2015). Assembly rules and novel assemblages in aquatic ecosystems. In J. Canning-Clode, (Ed), *Biological Invasions in Changing Ecosystems: Vectors, Ecological Impacts, Management, and Predictions* (Pp. 432-457). Warsaw/Berlin: De Gruyter Open. ISBN-13: 978-3110438659.

Conference papers:

Ullrich, P.A. and Guerra*, J.E. (2015, June) "Exploring the Effects of a High-Order Vertical Coordinate in a Non-Hydrostatic Global Model." Conference paper presented at the International Conference on Computational Science: Numerical and Computational Developments to Advance Multiscale Earth System Models (MSESM), Reykjavik, Iceland. *Procedia Computer Science* Volume 51, 2015, p. [2065-2074](#).

Conference presentations:

Foster, L. (2015, November). Energy budget changes impact mountain hydrology more than phase shifts. Invited Talk at the Grand Junction Geological Society and Mesa State University, Grand Junction, CO.

Foster*, L., and Maxwell, R. (2015, June) Arid mountain sensitivity to seasonal climate change impacts: precipitation phase vs. energy budget. Poster presentation at Modflow and More: Modeling a Complex World. Golden, CO.

Foster*, L., Bearup, L., Molotch, N., Brooks, P., and Maxwell, R. (2015, December) Energy budget changes impact arid mountain hydrology more than snow-rain transitions. Oral presentation at the Fall Meeting of the American Geophysical Union, San Francisco CA.

Foster*, L., Bearup, L., Molotch, N., Brooks, P., and Maxwell, R. (2016, February).) Energy budget changes impact arid mountain hydrology more than snow-rain transitions. Poster presentation at the Geology and Geological Engineering Graduate Showcase, Golden CO

Foster*, L., Beisman, J., Maxwell, R., Bearup, L., Williams, K., Carroll, R. (2016, April). Development of simulation capabilities to model hydrologic partitioning and biogeochemical cycling at the Berkeley Lab's East River field site. Poster presentation at the Department of Energy Principal Investigator Meeting, Oak Ridge, TN

Gilbert*, J.M., Maxwell, R.M., Gochis, D.J., Maples, S., Markovich, K.H. (2015, December). Using coupled subsurface-atmospheric simulations to investigate the impact of irrigation on atmospheric response in the San Joaquin River Basin, California. Oral presentation at the Fall Meeting of the American Geophysical Union, San Francisco, California.

Gilbert*, J.M., Maxwell, R.M. (2015, June) Comparing climate and irrigation impacts to San Joaquin Basin hydrology using an integrated hydrologic-land surface model. Poster presentation at the MODFLOW and More Conference, Golden, CO.

Guerra*, J.E. (2016, April) Efficient computation of atmospheric flows with Tempest: development of next-generation climate and weather prediction algorithms at non-hydrostatic scales. Poster presentation at the European Geophysical Union, Vienna, Austria.

Guerra*, J.E. and Ullrich, P.A. (2015, December) Efficient computation of atmospheric flows with Tempest: development of next-generation climate and weather prediction algorithms at non-hydrostatic scales. Poster presentation at the Fall Meeting of the American Geophysical Union, San Francisco, California.

Huang, X., Rhoades*, A., Ullrich, P.A. and Zarzycki, C. (2015, December). High-resolution regional climate model evaluation using variable-resolution CESM over California. Poster presentation at the Fall Meeting of the American Geophysical Union, San Francisco, California.

Jefferson, J.L., Gilbert*, J.M., Constantine, P.G., Maxwell, R.M. (2015, December) Quantifying the sensitivity of energy fluxes to land surface parameter selection using the active subspace method. Poster presentation at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

Jefferson, J.L. Gilbert*, J.M., Constantine, Paul C., Maxwell, R.M. (2015) Active subspaces for sensitivity analysis and dimension reduction of an integrated hydrologic model. MODFLOW and More Conference, Golden, CO, June 1-3, 2015.

Kent, ER, Snyder, RL, Clay, J., Little, C., Thao, T., Sharma, FC, Sanden, B., Zaccharia, D. (2016, April), Measurement-based actual evapotranspiration in pistachio orchards under varying soil salinity. Poster presentation at the CCWAS IGERT 2016 State of the Science & Policy Workshop, Weathering Change: The Impact of Climate and the Sustainable Groundwater Management Act on California's Water, Davis, California.

Kraus-Polk*, A. (2016, April), Mountains and rivers without end: The end of "cheap" water in California? Oral presentation at the American Association of Geographers (AAG), The Rise and Fall of Cheap Natures, San Francisco, CA.

Kraus-Polk*, A. (2016, February), The end of cheap water and the emancipatory place-making state in California. Oral presentation at Dimensions of Political Ecology (DOPE), Lexington, KY.

Kraus-Polk*, A. (2015, September), The end of "cheap" water in California? Oral presentation at the Land and Water Conference at Brown University, Providence, RI.

Kraus-Polk*, A. (2015, New York). Mountains and rivers without end: the end of "cheap" water in California? Oral presentation at World Society, Planetary Natures, Binghamton, NY.

Levy*, MA and Lubell, MN. (2015, June). Innovation and cooperation in agricultural information networks. Oral presentation at Political Networks. Portland, Oregon.

Levy*, MA and Lubell, MN. (2015, August). Innovation and cooperation in agricultural information networks. Poster presentation at the American Political Science Association, San Francisco, California.

Levy*, MA and Lubell, MN. (2016, April). Mental models of sustainable agriculture. Oral presentation at the Sunbelt Social Networks Conference, Newport Beach, California.

Levy* MA, Lubell MN, Leifeld P, and Cramner, SJ (2016, April). Estimating and interpreting geometrically weighted statistics in exponential random graph models, Oral presentation at the Midwest Political Science Association, Chicago, Illinois.

Markovich*, K., Fogg, G., Maxwell, R., and Arumi, JL. (2015, December). Climate change and storage response in alpine geologic endmember catchments using integrated modeling and baseflow recession analysis. Oral presentation at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

Pauloo*, R. and Pinheiro*, M. (2016, April). Past, Present, and Future: Climate and Water Management in California. Poster presentation at CCWAS IGERT 2016 State of the Science & Policy Workshop, Weathering Change: The Impact of Climate and the Sustainable Groundwater Management Act. Davis, CA.

Pinheiro*, M., and Yaping Zhou (2015, December), Tropical cyclone evolution and water and energy fluxes: a Hurricane Katrina case study. Fall Meeting of the American Geophysical Union, San Francisco, CA.

Rhoades*, A., Huang, X., Ullrich, P., and Zarzycki, C. (2015, August). Projecting 21st Century Sierra Nevada snowpack using a next-generation climate model. Poster Presentation at the California Climate Change Symposium. Sacramento, CA.

Rhoades*, A., Huang, X., Ullrich, P., and Zarzycki, C (2015, December). Understanding 21st Century hydroclimatic trends in Western USA mountain ranges using variable-resolution CESM. Oral presentation at Climate Conversations at LBNL. Lawrence Berkeley National Laboratories, CA.

Rhoades*, A., Huang, X., Ullrich, P., and Zarzycki, C. (2015, December). Projecting 21st Century snowpack trends in the Western United States using variable-resolution CESM. Fall Meeting of the American Geophysical Union 2015. San Francisco, CA.

Rhoades*, A., Huang, X., Ullrich, P., and Zarzycki, C. (February, 2016). "Understanding hydroclimatic changes in western USA mountain ranges using the variable-resolution CESM (VR-CESM) multiscale method. Oral presentation at 2016 Winter NCAR Atmosphere Model Working Group 2016. Boulder, CO.

Roberts*, SN. (2015, June). The private commons: oyster planting in Nineteenth Century Connecticut," Oral presentation at the International Water History Conference, Delft, Netherlands.

Roberts*, SN. (2015, October). Climate change, water, and society: coal mining's impact on Western Kentucky communities. Oral presentation at the New Paths in the Environmental History of North America and the Ohio Valley Conference, Louisville, KY, USA.

Rudnick, J., Niles, M., Lubell, M. (2016, April). Network structures among climate change and agriculture support organizations in East Africa. Poster presentation at the American Association of Geographers Meeting, San Francisco, CA.

Ullrich, P.A., Guerra*, J.E., Pinheiro*, M., and Fong*, J.Y. (2015, December) "Tempest: Tools for Addressing the Needs of Next-Generation Climate Models" Poster presentation at the American Geophysical Union, San Francisco, California.

Ullrich, P.A. (2015, September) Reaching High Spatial Resolutions with Regionally Refined Global Climate Models. Oral presentation at the Meteorology And Climate - Modeling for Air Quality Conference, Sacramento, California.

Ullrich, P.A. (2015, September) Recent Advances in the Development of Next-Generation Global Modeling Systems. Invited oral presentation at Comparative Climates of Terrestrial Planets II, NASA Ames, Moffett Field, California.

Ullrich, P.A. (2015, June) Towards robust multi-scale global atmospheric models. Oral presentation at SIAM Geosciences 2015, Palo Alto, California.

Ullrich, P.A. and Guerra*, J.E. (2015, June) Exploring the Effects of a High-Order Vertical Coordinate in a Non-Hydrostatic Global Model. Oral presentation at the International Conference on Computational Science: Numerical and Computational Developments to Advance Multiscale Earth System Models (MSESM), Reykjavik, Iceland.

Whipple* AA, Dahlke, HE, Viers, JH. (2015, August) Hydrologic analysis of floodplain connectivity for ecological understanding and management. Poster presentation at the 2015 International Society for River Science Conference, La Crosse, WI.

Whipple* AA. (2015, September). Learning from process-based restoration: biophysical responses within the lower Cosumnes River floodplain. Oral presentation at the 2015 Floodplain Management Association Conference, Rancho Mirage, CA.

Whipple* AA. Exploring land-water connections: Mapping and Modeling to Inform Management. Modeling and Representing Landscapes Seminar, University of California, Davis. Invited Speaker. March 4, 2016.

Whipple* AA. (2016, April). The Sacramento-San Joaquin Delta: past conditions and current challenges. Invited presentation at ENVE140: Water Resources Management, University of California, Merced. Merced, CA.

Whipple* AA. (2016, April). Cluster Analysis: Cosumnes River Flood Typing. Invited presentation at *ES207: Environmental Data Analysis*, University of California, Merced, CA.

