MICHAEL HOBBINS, B.Eng., M.S., Ph.D.
Physical Sciences Division, NOAA-Earth Systems Research Laboratory, Boulder, CO 80305
303-497-3092 • mike.hobbins@noaa.gov

Peer-reviewed

Hobbins MT, and Huntington J (2016), Evapotranspiration and evaporative demand, Chapter 42, in: *Handbook of Applied Hydrology*, edited by VP Singh, McGraw-Hill Education, New York.

Hobbins MT, Wood A, McEvoy D, Huntington J, Morton C, Anderson M, and Hain C (2016), The Evaporative Demand Drought Index: Part I - Linking drought evolution to variations in evaporative demand. *Journal of Hydrometeorology*, 17: 1745–1761, doi:10.1175/JHM-D-15-0121.1.

McEvoy D, Huntington J, **Hobbins MT**, Wood A, Morton C, Anderson M, and Hain C (2016), The Evaporative Demand Drought Index: Part II - CONUS-wide assessment against common drought indicators. *Journal of Hydrometeorology*, 17: 1763–1779, doi:10.1175/JHM-D-15-0122.1.

Hobbins MT (2016), The variability of ASCE Standardized Reference Evapotranspiration: a rigorous, CONUS-wide decomposition and attribution. *Trans. ASABE*, 59(2): 561–576: doi:10.13031/trans.59.10975.

McEvoy DJ, Huntington JL, Mejia JF, and **Hobbins MT** (2016), Improved Seasonal Drought Forecasts using Reference Evapotranspiration Anomalies. *Geophysical Research Letters*, 43: 377–385, doi:10.1002/2015GL067009.

Moorhead J, Gowda P, **Hobbins MT**, Senay G, Paul G, Marek T, and Porter D (2015), Accuracy assessment of NOAA gridded daily reference evapotranspiration for the Texas High Plains. *Journal of the American Water Resources Association*: 1–10, doi:10.1111/1752-1688.12303.

King DA, Bachelet DM, Symstad AJ, Ferschweiler K, and **Hobbins MT** (2015), Estimation of potential evapotranspiration from extraterrestrial radiation, air temperature and humidity to assess future climate change effects on the vegetation of the Northern Great Plains, USA. *Ecological Modelling*: 86–97, doi:10.1016/j.ecolmodel.2014.10.037.

Xia Y, **Hobbins MT**, Mu Q, and Ek MB (2015), Evaluation of NLDAS-2 evapotranspiration against tower flux site observations. *Hydrologic Processes*, doi:10.1002/hyp.10299

Bardsley T, Wood A, **Hobbins MT**, Kirkham T, Briefer L, Niermeyer J, and Burian S (2013), Planning for an uncertain future: Climate change sensitivity assessment towards adaptation planning for public water supply. *Earth Interactions*, 17(23), doi:10.1175/2012EI000501.1

Lim WH, Roderick ML, **Hobbins MT**, Wong SC, Farquhar GD (2013), The energy balance of a US Class A evaporation pan. *Agricultural and Forest Meteorology*, 182–183: 314–331, doi:10.1016/j.agrformet.2013.07.001

Hobbins MT, Wood A, Streubel D, and Werner K (2012), What drives the variability of evaporative demand across the conterminous United States? *Journal of Hydrometeorology*, 13:1195–1214, doi:10.1175/JHM-D-11-0101.1

Lim WH, Roderick ML, **Hobbins MT**, Wong SC, Groeneveld PJ, Sun F, and Farquhar GD (2012), The aerodynamics of pan evaporation. *Agricultural and Forest Meteorology*, 152: 31–43, doi:10.1016/j.agrformet.2011.08.006

Szilagyi J, **Hobbins MT**, and Jozsa J (2009), Modified advection-aridity model of evapotranspiration. *Journal of Hydrologic Engineering*, 14(6): 569-574, doi:10.1061/(ASCE)HE.1943-5584.0000026.

Roderick ML, **Hobbins MT**, and Farquhar GD (2009), Pan evaporation trends and the terrestrial water balance. I. Principles and observations. *Geography Compass*, 3(2): 746-760, doi:10.1111/j.1749-8198.2008.00213.x.

Roderick ML, **Hobbins MT**, and Farquhar GD (2009), Pan evaporation trends and the terrestrial water balance. II. Energy balance and interpretation. *Geography Compass*, 3(2): 761-780, doi: 10.1111/j.1749-8198.2008.00214.x.

Brown TC, **Hobbins MT**, and Ramírez JA (2008), Spatial distribution of water supply in the coterminous United States. *Journal of the American Water Resources Association*, 44(6): 1474-1487, doi:10.1111/j.1752-1688.2008.00252.x.

Hobbins MT, Dai A, Roderick ML, and Farquhar GD (2008), Revisiting the parameterization of potential evaporation as a driver of long-term water balance trends. *Geophysical Research Letters*, 35, L12403, doi:10.1029/2008GL033840.

Roderick ML, Rotstayn LD, Farquhar GD, and **Hobbins MT** (2007), On the attribution of changing pan evaporation. *Geophysical Research Letters*, 34, L17403, doi:10.1029/2007GL031166.

Ramírez JA, **Hobbins MT**, and Brown TC (2005), Observational evidence of the complementary relationship in regional evaporation lends strong support for Bouchet's hypothesis. *Geophysical Research Letters*, 32, L15401, doi:10.1029/2005GL023549.

Hobbins MT, Ramírez JA, and Brown TC (2004), Trends in pan evaporation and actual evaporation across the conterminous U.S.: Paradoxical or complementary? *Geophysical Research Letters*, 31(13): L13503, doi:10.1029/2004GL0198426.

Hobbins MT, Ramírez JA, and Brown TC (2004), Developing a long-term, high-resolution, continental-scale, spatially distributed time-series of topographically corrected solar radiation, In: *Proceedings of the Twenty-fourth Annual AGU Hydrology Days*, Colorado State University, Fort Collins, CO, March 10-12.

Hobbins MT, Ramírez JA, Brown TC, and Claessens LHJM (2001), The complementary relationship in estimation of regional evapotranspiration: The CRAE and Advection-aridity models. *Water Resources Research*, 37(5): 1367-1387.

Hobbins MT, Ramírez JA, and Brown TC (2001), The complementary relationship in estimation of regional evapotranspiration: An enhanced Advection-aridity model. *Water Resources Research*, 37(5): 1389-1403.

Hobbins MT, Ramírez JA, and Brown TC (2001), Trends in regional evapotranspiration across the United States under the complementary relationship hypothesis, In: *Proceedings of the Twenty-first Annual AGU Hydrology Days*, Colorado State University, Fort Collins, CO, April 2-5, pp. 106-121.

Hobbins MT, Ramírez JA, and Brown TC (1999), The complementary relationship in regional evapotranspiration: The CRAE model and the Advection-aridity approach, In: *Proceedings of the Nineteenth Annual AGU Hydrology Days*, Colorado State University, Fort Collins, CO, August 16-20, pp. 199-212.

In Process

Dewes CF, Rangwala I, Barsugli J, **Hobbins MT**, and Kumar S (2016), Drought risk assessment under climate change is sensitive to methodological choices for the estimation of evaporative demand. Resubmitted to *PLoS ONE*.

Hobbins MT, Senay G, Gowda P, and Artan GA (2017), Chapter 4: Evapotranspiration and evaporative demand. Submitted to *Statistics in Hydrology*, American Society of Civil Engineers-Environmental Water Resources Institute. (Accepted.)

Technical Reports, White Papers, Press

Allen R, Anderson M, Bolten J, Cestti R, Fisher J, Hain C, Harshadeep N, **Hobbins MT**, Hook S, Johnson L, Kilic A, Kustas W, Lee C, Melton F, Morse F, Tracy J, and Verdin J (2015), Evapotranspiration mapping for water security: recommendations and requirements. Recommendations of the Participants of the 2015 Workshop on Evapotranspiration Mapping for Water Security, Washington, D.C., September 15-17, 2015.

Hobbins MT (2014), Measuring the atmosphere's thirst. *Dry Times: National Integrated Drought Information System Newsletter*, 4(1): 14-15.

Hobbins MT (2010), What are Evapotranspiration and Forecast Reference Crop Evapotranspiration (FRET)? http://www.wrh.noaa.gov/forecast/evap/FRET/ExplainingFRETscientific.pdf, accessed December 13, 2010.

Brown TC, **Hobbins MT**, and Ramírez JA (2005), The source of water supply in the United States, RMRS-RWU 4851 Discussion Paper, Rocky Mountain Research Station, US Forest Service, Fort Collins, CO.

Ramírez JA, **Hobbins MT**, and Brown TC (2002), Adapting the complementary relationship for mountainous areas of the United States, Final report, Cooperative Agreement 28-JV7-945 between Colorado State University and Rocky Mountain Research Station, Colorado State University, Fort Collins, CO.

Hobbins MT, Ramírez JA and Brown TC (2000), The Complementary Relationship in the Estimation of Regional Evapotranspiration: An Enhanced Advection-Aridity Model, Open File Report No.13, Colorado Water Resources Research Institute, Colorado State University, Fort Collins, CO.

Hobbins MT and Bowen B (1995), Water Quality Discipline Report: I-5 High Occupancy Vehicle Lane Project, Mounts Road to Fife Interchange, Washington State Department of Transportation, Olympia, WA.

Hobbins MT (1995), National Pollution Discharge Elimination System Permit Application: Pierce County, Washington State Department of Transportation, Olympia, WA.

Hobbins MT (1995), Global Positioning System Protocol, Washington State Department of Transportation, Olympia, WA.

Hobbins MT (1995), Outfall Inventory and Field Screening Project Report: WSDOT Olympic Region, Washington State Department of Transportation, Olympia, WA.