BIO-BIBLIOGRAPHY University of California, Santa Barbara

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Kelly K. Caylor
Professor III
Department of Geography
Bren School of Environmental Science & Management
Director of Earth Research Institute

This update refers to the period July 1, 2018 to June 30, 2021

Curriculum Vitae

Education
University of Virginia, Ph.D., Environmental Sciences, 2003
University of Virginia, B.A., with High Distinction, Environmental Sciences, 1996

Areas of Specialization
Ecohydrology, Isotope hydrology, Coupled natural-human systems, Environmental sensing.

Previous Academic or Professional Appointments

2005 - 2007	Assistant Professor, Department of Geography, Indiana University
2007 -	Adjunct Faculty, Department of Geography, Indiana University
2007 - 2012	Assistant Professor, Dept. of Civil and Environmental Engineering, Princeton University
2013 - 2016	Affiliated Faculty, Dept. of Ecology and Evolutionary Biology, Princeton University
2013 - 2016	Associate Professor, Dept. of Civil and Environmental Engineering, Princeton University
2014 - 2016	Director, Environmental Studies Program, Princeton University
2016 -	Full Professor, Dept. of Geography, University of California, Santa Barbara
2016 -	Full Professor, Bren School of Environmental Science & Management, UCSB

Professional Organizations
American Geophysical Union, Association of American Geographers, American Association for the Advancement of Science

PART I. RESEARCH

Cumulative List of Publications (or Creative Activities):

#	Year	Title and Authors	Publisher	Category
1	2000	**Approaches for the estimation of primary productivity and vegetation structure in the Kalahari region** , Dowty, P.R., Caylor, K.K., Shugart, H.H,, Emanuel, W.R.	Ringrose, S., Chanda, R. (eds.). *Towards Sustainable Natural Resource Management in the Kalahari Region.* . University of Botswana Press	Refereed Book Chapter
2	2002	**The southern African Regional Science Initiative (SAFARI 2000): Wet season campaigns**, Otter, LB, Scholes, RJ, Dowty, PR, Privette, JP, Caylor, K.K., Ringrose, S, Mukelabai, M, Frost, P, Hanan, N, Totolo, O, Veenendall, EM [pdf]	*South African Journal of Science* 98(3-4): 131-137.	Refereed Article
3	2002	**Determining land surface fractional cover from NDVI and rainfall time series for a savanna ecosystem**, Scanlon, TM, Albertson, JD, Caylor, K.K., Williams, CA [pdf]	*Remote Sensing of Environment* 82(2-3): 376-388. doi:10.1016/s0034-4257(02)00054-8.	Refereed Article
4	2002	**Trends in savanna structure and composition on an aridity gradient in the Kalahari**, Scholes, RJ, Dowty, PR, Caylor, K.K., Parsons, DAB, Frost, PGH, Shugart, HH [pdf]	*Journal of Vegetation Science* 13(3): 419-428. doi:10.1111/j.1654-1103.2002.tb02066.x.	Refereed Article
5	2003	**Tree spacing along the Kalahari transect in southern Africa**, Caylor, K.K., Shugart, HH, Dowty, PR, Smith, TM [pdf]	*Journal of Arid Environments* 54(2): 281-296. doi:10.1006/jare.2002.1090.	Refereed Article
6	2003	**Release of gaseous and particulate carbonaceous compounds from biomass burning during the SAFARI 2000 dry season field campaign**, Hely, C, Caylor, K.K., Alleaume, S, Swap, RJ, Shugart, HH [pdf]	*Journal of Geophysical Research - Atmospheres* 108(13). doi:10.1029/2002jd002482.	Refereed Article
7	2003	**Regional fuel load for two climatically contrasting years in southern Africa**, Hely, C, Dowty, PR, Alleaume, S, Caylor, K.K., Korontzi, S, Swap, RJ, Shugart, HH, Justice, CO [pdf]	*Journal of Geophysical Research - Atmospheres* 108(13). doi:10.1029/2002jd002341.	Refereed Article
8	2003	**Soil moisture and plant stress dynamics along the Kalahari precipitation gradient**, Porporato, A, Laio, F, Ridolfi, L, Caylor, K.K., Rodriguez-Iturbe, I [pdf]	*Journal of Geophysical Research - Atmospheres* 108(D3). doi:10.1029/2002jd002448.	Refereed Article
9	2004	**Coupling ecohydrological patterns and processes in semi-arid landscapes**, Caylor, K.K., Rodriguez-Iturbe, I	*Proceedings of the British Hydrological Society's International Conference on Hydrology: Science & Practice for the 21st Century* . British Hydrological Society	Refereed Conference Proceedings
10	2004	**Simulated productivity of heterogeneous patches in Southern African savanna landscapes using a canopy productivity model**, Caylor, K.K., Shugart, HH [pdf]	*Landscape Ecology* 19(4): 401-415. doi:10.1023/B:LAND.0000030450.11302.c2.	Refereed Article

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11	2004	**Feasible optimality of vegetation patterns in river basins**, Caylor, K.K., Scanlon, TM, Rodriguez-Iturbe, I [pdf]	*Geophysical Research Letters* 31(13). doi:10.1029/2004GL020260.	Refereed Article
12	2004	**Relationship between small-scale structural variability and simulated vegetation productivity across a regional moisture gradient in southern Africa**, Caylor, K.K., Dowty, PR, Shugart, HH, Ringrose, S [pdf]	*Global Change Biology* 10(3): 374-382. doi:10.1111/j.1365-2486.2003.00704.x.	Refereed Article
13	2004	**Vegetation structure characteristics and relationships of Kalahari woodlands and savannas**, Privette, JP, Tian, Y, Roberts, G, Scholes, RJ, Wang, Y, Caylor, K.K., Mukelabai, M [pdf]	*Global Change Biology* 10(3): 281-291. doi:10.1111/j.1365-2486.2004.00740.x.	Refereed Article
14	2004	**A simulation analysis of the detectability of understory burns in miombo woodlands**, Pereira, JMC, Mota, B, Privette, JL, Caylor, K.K., Silva, JMN, Sa, ACL, Ni-Meister, W [pdf]	*Remote Sensing of Environment* 93(3): 296-310. doi:10.1016/j.rse.2004.01.009.	Refereed Article
15	2005	**Tree canopy effects on simulated water stress in southern African savannas**, Caylor, K.K., Shugart, HH, Rodriguez-Iturbe, I [pdf]	*Ecosystems* 8(1): 106-121. doi:10.1007/s10021-004-0027-9.	Refereed Article
16	2005	**On the coupled geomorphological and ecohydrological organization of river basins**, Caylor, K.K., Manfreda, S., Rodriguez-Iturbe, I [pdf]	*Advances in Water Resources* 28(1): 69-86. doi:10.1016/j.advwatres.2004.08.013.	Refereed Article
17	2005	**Dynamic response of grass cover to rainfall variability: Implications for the function and persistence of savanna ecosystems**, Scanlon, TM, Caylor, K.K., Manfreda, Salvatore, Levin, Simon, Rodriguez-Iturbe, I [pdf]	*Advances in Water Resources* 28(3): 291-302. doi:10.1016/j.advwatres.2004.10.014.	Refereed Article
18	2005	**Determinants of woody cover in African savannas: A continental scale analysis**, Sankaran, M, Hanan, N, Scholes, B, Ratnam, Jayashree, 24 others, Caylor, K.K. [pdf]	*Nature* 438(7069): 846. doi:10.1038/nature04070.	Refereed Article
19	2006	**Dynamic change in the woodland and savanna ecosystems of sub-tropical Africa.** , Shugart, H.H, Caylor, K.K., Hely, C., Swap, R.J., Dowty, P.R.	Laurence, W., Peres, C. (eds.). *Emerging Threats to Tropical Forests* . University of Chicago Press	Refereed Book Chapter
20	2006	**Pattern and process in savanna ecosystems**, Caylor, K.K, Shugart, H.H.	D'Odorico, P., Porporato, A. (eds.). *Dryland Ecohydrology* . Springer	Refereed Book Chapter
21	2006	**On the ecohydrology of structurally heterogeneous semi-arid landscapes**, Caylor, K.K., D'Odorico, P, Rodriguez-Iturbe, I [pdf]	*Water Resources Research* 42(7). doi:10.1029/2005WR004683.	Refereed Article
22	2007	**Ecohydrological optimization of patterns and processes in water-limited ecosystems.**, Caylor, K.K., Scanlon, T.M., Rodriguez-Iturbe, I.	*Water and the Environment: Proceedings of the Workshop in the Vatican Academy of Sciences.* . Vatican Academy of Sciences	Refereed Conference Proceedings

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23	2007	**A temporal and spatially explicit Production Efficiency Model for fuel load allocation in southern Africa**, Hely, C, Caylor, K.K., Dowty, PR, Alleaume, S, Swap, RJ, Shugart, HH, Justice, CO [pdf]	*Ecosystems* 10(7): 1116. doi:10.1007/s10021-007-9082-3.	Refereed Article
24	2007	**Spatial variation in vegetation structure coupled to plant available water at landscape scales in a Brazilian savanna**, Ferira, J., Bustamente, M, Garcia-Montiel, DC, Caylor, K.K., Davidson, EA [pdf]	*Oecologia* 153(2): 417-430. doi:10.1007/s00442-007-0747-6.	Refereed Article
25	2007	**When is breeding for drought tolerance optimal when drought is random?**, Sambatti, J, Caylor, K.K. [pdf]	*New Phytologist* 175(1): 70-80. doi:10.1111/j.1469-8137.2007.02067.x.	Refereed Article
26	2007	**On soil moisture–vegetation feedbacks and their possible effects on the dynamics of dryland ecosystems**, D'Odorico, P, Caylor, K.K., Okin, GS, Scanlon, TM [pdf]	*Journal of Geophysical Research - Biogeosciences* 112(G4). doi:10.1029/2006jg000379.	Refereed Article
27	2007	**Positive feedbacks promote power-law clustering of Kalahari vegetation**, Scanlon, TM, Caylor, K.K., Levin, Simon, Rodriguez-Iturbe, I [pdf]	*Nature* 449(7159): 209. doi:10.1038/nature06060.	Refereed Article
28	2008	**Spatial patterns of soil nutrients in two southern African savannas**, Okin, GS, Mladenov, N, Wang, L, Cassel, D, Caylor, K.K., Ringrose,S [pdf]	*JGR - Biogeosciences* 113(G2). doi:10.1029/2007JG000584.	Refereed Article
29	2009	**Decoupling structural and environmental determinants of sap velocity**, Dragoni, D., Caylor, K.K.	*Proceedings of the 7th International Workshop on Sap Flow, Seville, Spain* . Acta Horticulture	Refereed Conference Proceedings
30	2009	**On the calibration of continuous, high-precision δ18O and δ2H measurements using an off-axis integrated cavity output spectrometer** , Wang, L, Caylor, K.K., Dragoni, D. [pdf]	*Rapid Communications in Mass Spectrometry* 23(4): 530-536. doi:10.1002/rcm.3905.	Refereed Article
31	2009	**Ecohydrological optimization of pattern and process in dryland ecosystems: A tradeoff-based hypothesis**, Caylor, K.K., Scanlon, TM, Rodriguez-Iturbe, I [pdf]	*Water Resources Research* 45(8). doi:10.1029/2008WR007230.	Refereed Article
32	2009	**Decoupling structural and environmental determinants of sap velocity: Part II, Observational application**, Dragoni, D, Caylor, K.K., Schmid, H [pdf]	*Agriculture & Forest Meteorology* 149(3-4): 570-581. doi:10.1016/j.agrformet.2008.10.006.	Refereed Article
33	2009	**Decoupling structural and environmental determinants of sap velocity: Part I, Methodological development**, Caylor, K.K., Dragoni, D. [pdf]	*Agriculture & Forest Meteorology* 149(3-4): 559-569. doi:10.1016/j.agrformet.2008.10.010.	Refereed Article

#	Year	Title and Authors	Publisher	Category
34	2009	**Spatial heterogeneity and sources of soil carbon in Southern African savannas**, Wang, L, Okin, G., Caylor, K.K., Macko, S [pdf]	*Geoderma* 149(3-4): 402-408.	Refereed Article
35	2010	**Combined effect of soil moisture and nitrogen availability variations on grass productivity in African savannas**, Wang, L, D'Odorico, P, Ries, L., Caylor, K.K., Macko, S [pdf]	*Plant & Soil* 328(1-2): 95-108. doi:10.1007/s11104-009-0085-z.	Refereed Article
36	2010	**Nutrient limitation on above-ground grass production in four savanna types along the Kalahari Transect**, Ries-O'Halloran, L, Shugart, HH, Wang, L, Caylor, K.K., Ringrose, S [pdf]	*Journal of Arid Environments* 74(2): 284-290. doi:10.1016/j.jaridenv.2009.08.012.	Refereed Article
37	2010	**An ecohydrological approach to predict regional species distribution patterns in dryland ecosystems**, Franz, T., Caylor, K.K., Rodriguez-Iturbe, I. , Celia, M., Norbotton, J [pdf]	*Advances in Water Resources* 33(2): 215-230. doi:10.1016/j.advwatres.2009.12.003.	Refereed Article
38	2010	**On the importance of accurate depiction of infiltration processes on model soil moisture and vegetation water stress**, Manfreda, S., Scanlon, TM, Caylor, K.K. [pdf]	*Ecohydrology* 3(2): 155-165. doi:10.1002/eco.79.	Refereed Article
39	2010	**Partitioning evapotranspiration across gradients of woody plant cover: assessment of a stable isotope technique**, Wang, L, Caylor, K.K., Villegas, J.C., Barron-Gafford, G, Breshears, DD, Huxman, T [pdf]	*Geophysical Research Letters* 37(9). doi:10.1029/2010GL043228.	Refereed Article
40	2010	**Herbivores and mutualistic ants interact to regulate tree photosynthesis**, King, E.G., Caylor, K.K. [pdf]	*New Phytologist* 187(1): 17-21. doi:10.1111/j.1469-8137.2010.03286.x.	Refereed Article
41	2011	**Quantifying Transient Soil Moisture Dynamics Using Multipoint Direct-Current Resistivity in Homogeneous Sand**, Franz, T., Nolan, J, Nordbotten, J, Caylor, K.K., Slater, L. [pdf]	*Vadose Zone Journal* 10(1): 286-298. doi:10.2136/vzj2010.0031.	Refereed Article
42	2011	**Climatological determinants of woody cover in Africa**, Good, S.P., Caylor, K.K. [pdf]	*Proceedings of the National Academy of Sciences* 108(12): 4902-4907. doi:10.1073/pnas.1013100108.	Refereed Article
43	2011	**Coupling vegetation organization patterns to soil resource heterogeneity in a central Kenyan dryland using geophysical imagery**, Franz, T., King, E.G., Caylor, K.K., Robinson, DA [pdf]	*Water Resources Research* 47(7). doi:10.1029/2010WR010127.	Refereed Article
44	2011	**Metabolic principles of river basin organization**, Rodriguez-Itrube, I, Caylor, K.K., Rinaldo, A. [pdf]	*Proceedings of the National Academy of Sciences* 108(29): 11751-11755. doi:10.1073/pnas.1107561108.	Refereed Article
45	2011	**Ecohydrology in Practice: Strengths, Conveniences, and Opportunities**, King, E.G., Caylor, K.K. [pdf]	*Ecohydrology* 4(4): 608-612. doi:10.1002/eco.248.	Refereed Article

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46	2012	**An ecohydrological approach to predicting hillslope-scale vegetation patterns in dryland ecosystems**, Franz, T., Caylor, K.K., King, E.G., Nordbotten, J, Celia, MA, Rodriguez-Iturbe, I [pdf]	*Water Resources Research* 48(1). doi:10.1029/2011WR010524.	Refereed Article
47	2012	**Multi-sensor derivation of regional vegetation fractional cover in Africa**, Guan, K., Wood, E.F., Caylor, K.K. [pdf]	*Remote Sensing of Environment* 124: 653-665. doi:10.1016/j.rse.2012.06.005.	Refereed Article
48	2012	**Characterizing ecohydrological and biogeochemical connectivity across multiple scales: a new conceptual framework**, Wang, L., Zou, Chris, O'Donnell, F., Good, S., Franz, T., Miller, G.R., Caylor, K.K. [pdf]	*Ecohydrology* 5(2): 221-233. doi:10.1002/eco.1187.	Refereed Article
49	2012	**Ecohydrological interactions in a two-phase mosaic dryland: implications for regime shifts, resilience, and restoration**, King, E.G., Franz, T., Caylor, K.K. [pdf]	*Ecohydrology* 5(6): 733-745. doi:10.1002/eco.260.	Refereed Article
50	2012	**Direct quantification of leaf transpiration isotopic composition**, Wang, L, Good, S.P., Caylor, K.K. [pdf]	*Agriculture & Forest Meteorology* 154: 127-135. doi:10.1016/j.agrformet.2011.10.018.	Refereed Article
51	2012	**A model-based evaluation of woody plant encroachment impacts on coupled carbon and water cycles**, O'Donnell, Caylor, K.K. [pdf]	*Journal of Geophysical Research - Biogeosciences* 117(G2). doi:10.1029/2011JG001899.	Refereed Article
52	2012	**Understanding the role of ecohydrological feedbacks in ecosystem-state change in drylands**, Turnbull, L, Wilcox, B.P., Belnap, J, Ravi, S, others, Caylor, K.K. [pdf]	*Ecohydrology* 5(2): 174-183. doi:10.1002/eco.265.	Refereed Article
53	2012	**Evaluating ecohydrological theories of woody root distribution in the Kalahari**, Bhattachan, A. , Dintwe, K., Tathlego, M., O'Donnell, F., Caylor, K.K., et al. [pdf]	*PLoS One* 7(3): e33996. doi:10.1371/journal.pone.0033996.	Refereed Article
54	2012	**Uncertainties in the assessment of the isotopic composition of surface fluxes: A direct comparison of techniques using laser–based water vapor isotope analyzers**, Good, S.P., Soderberg, K., Wang, L, Caylor, K.K. [pdf]	*Journal of Geophysical Research - Atmospheres* 117(D5). doi:10.1029/2011JD017168.	Refereed Article
55	2012	**Reframing hydrology education to solve coupled human and environmental problems**, King, E.G., O'Donnell, F., Caylor, K.K. [pdf]	*Hydrology and Earth System Science* 16(8): 2293-2404. doi:10.5194/hess-16-4023-2012.	Refereed Article
56	2012	**Stable isotopes of water vapor in the vadose zone: A review of measurement and modeling techniques** , Soderberg, K., Good, S.P., Wang, L, Caylor, K.K. [pdf]	*Vadose Zone Journal* 11(3). doi:10.2136/vzj2011.0165.	Refereed Article
57	2012	**Dryland ecohydrology and climate change: critical issues and technical advances** , Wang, L, D'Odorico, P, Evans, J, Eldridge, T., McCabe, M, Caylor, K.K. [pdf]	*Hydrology and Earth System Science* 16(8): 2585-2603. doi:10.5194/hess-16-2585-2012.	Refereed Article

#	Year	Title and Authors	Publisher	Category
58	2013	**Seasonal coupling of canopy structure and function in African tropical forests and its environmental controls**, Guan, K., Wolf, A, Medvigy, David, Caylor, K.K., Pan, Ming, Wood, E.F. [pdf]	*Ecosphere* 4(3): 1-21. doi:10.1890/ES12-00232.1.	Refereed Article
59	2013	**Using atmospheric trajectories to model the isotopic composition of rainfall in central Kenya**, Soderberg, K., Good, S.P., O'Connor, M, Wang, L, Ryan, K, Caylor, K.K. [pdf]	*Ecosphere* 4(3): 1-18. doi:10.1890/ES12-00160.1.	Refereed Article
60	2013	**Ecosystem-scale spatial heterogeneity of stable isotopes of soil nitrogen in African savannas**, Wang, L., Okin, GS, D'Odorico, P, Caylor, K.K., Macko, S [pdf]	*Landscape Ecology* 28(4): 685-698. doi:10.1007/s10980-012-9776-6.	Refereed Article
61	2013	**The effect of warming on grassland evapotranspiration partition using laser-based isotope monitoring techniques**, Wang, L, Nui, S., Good, S.P., Soderberg, K, others, Caylor, K.K. [pdf]	*Geochemica et Cosmochimica Acta* 111: 28-38. doi:10.1016/j.gca.2012.12.047.	Refereed Article
62	2013	**Analytical expressions of variability in ecosystem structure and function obtained from three-dimensional stochastic vegetation modelling**, Good, S.P., Rodriguez-Iturbe, I, Caylor, K.K. [pdf]	*Proceedings of the Royal Society, Series A* 469(2155): 20130003. doi:10.1098/rspa.2013.0003.	Refereed Article
63	2013	**Virtual water trade and development in Africa**, Konar, M, Caylor, K.K. [pdf]	*Hydrology and Earth System Science* 17(10): 3969-3982. doi:10.5194/hess-17-3969-2013.	Refereed Article
64	2013	**On The Vulnerability of Water Limited Ecosystems to Climate Change**, Manfreda, S., Caylor, K.K. [pdf]	*Water* 5(2): 819-833. doi:10.3390/w5020819.	Refereed Article
65	2014	**Multilevel governance of irrigation systems and adaptation to climate change in Kenya** , Dell'Angelo, J, McCord, P.F., Baldwin, E., Cox, M.E., Gower, D., Caylor, K.K., Evans, T.P.	Bhaduri, A., Bogardi, J., Leentvaar, J., Marx, S. (eds.). *The Global Water System in the Anthropocene* . Springer International	Refereed Book Chapter
66	2014	**Integrating short- and long-range processes into models: The emergence of pattern**, Caylor, K.K, Okin, G.S., Turnbull, L., Wainwright, J., Wiegand, T., Franz, T.E., Parsons, A.J.	Mueller, E.N., Wainwright, J., Parsons, A.J., Turnbull, L. (eds.). *Patterns of Land Degradation in Drylands* . Springer International	Refereed Book Chapter
67	2014	**An analysis of structure: biomass structure relationships for characteristic species of the western Kalahari, Botswana**, Meyer, T, D'Odorico, P, Okin, GS, Shugart, HH, Caylor, K.K., O'Donnell FC [pdf]	*African Journal of Ecology* 52(1): 20-29. doi:10.1111/aje.12086.	Refereed Article
68	2014	**δ2H Isotopic flux partitioning of evapotranspiration over a grass field following a water pulse and subsequent dry down**, Good, S.P., Soderberg, K., Guan K., King, E.G., Scanlon, TM, Caylor, K.K. [pdf]	*Water Resources Research* 50(2): 1410-1432. doi:10.1002/2013WR014333.	Refereed Article

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69	2014	**Modelling vegetation patterns in semiarid environments**, Manfreda, S., Pizzolla, T., Caylor, K.K.	*Procedia Environmental Sciences* 19: 168-177. doi:10.1016/j.proenv.2013.06.019.	Refereed Article
70	2014	**Deriving vegetation phenological time and trajectory information over Africa using SEVIRI daily LAI**, Guan, K., Medvigy, D., Wood, E.F., Caylor, K.K., Li, S., Jeong, S. [pdf]	*IEEE Transactions on Geoscience and Remote Sensing* 52(2): 1113-1130. doi:10.1109/TGRS.2013.2247611.	Refereed Article
71	2014	**Continental-scale impacts of intra-seasonal rainfall variability on simulated ecosystem responses in Africa**, Guan, K., Good, S.P., Caylor, K.K., Sato, Hisashui, Li, Haibin, Wood, E.F. [pdf]	*Biogeosciences* 11(23): 6939-6954. doi:10.5194/bg-11-6939-2014.	Refereed Article
72	2014	**Changing water availability during the African maize-growing season, 1979-2010**, Estes, L, Chaney, N., Herrera-Estrada, J., Sheffield, J, Caylor, K.K., Wood, E.F. [pdf]	*Environmental Research Letters* 9(7): 75005. doi:10.1088/1748-9326/9/7/075005.	Refereed Article
73	2014	**Global synthesis of vegetation control on evapotranspiration partitioning**, Wang, L., Good, S.P., Caylor, K.K., ‘ [pdf]	*Geophysical Research Letters* 41(19): 6753-6757. doi:10.1002/2014GL061439.	Refereed Article
74	2014	**Terrestrial hydrological controls on land surface phenology of African savannas and woodlands**, Guan, K., Wood, E.F, Medvigy, D., Wolf, A., Kimball, J., Pan, M., Caylor, K.K., Sheffield, J [pdf]	*Journal of Geophysical Research - Biogeosciences* 119(8): 1652-1669. doi:10.1002/2013JG002572.	Refereed Article
75	2015	**Photosynthetic seasonality of global tropical forests constrained by hydroclimate**, Guan, K., Pan, M., Li, H., Wolf, A, Medvigy, D, Caylor, K.K., Sheffield, J, Wood, EF, Mahli, Y, Liang, M., others [pdf]	*Nature Geoscience* 8(4): 284. doi:10.1038/ngeo2382.	Refereed Article
76	2015	**Termite mounds can increase the robustness of dryland ecosystems to climatic change**, Bonachela, J.A., Pringle, RM, Shefer, E, Coverdale, TC, Guyon, JA, Caylor, K.K., Levin, SA, Tarnita, CE [pdf]	*Science* 347 6222): 651-655. doi:10.1126/science.1261487.	Refereed Article
77	2015	**Carbon stable isotopes suggest that hippopotamus-vectored nutrients subsidize aquatic consumers in an East African river**, McCauley, D.J., Dawson, T, Power, ME, Finlay, JC, Ogada, M, Gower, D., Caylor, K.K. [pdf]	*Ecosphere* 6(4): 1-11. doi:10.1890/ES14-00514.1.	Refereed Article
78	2015	**A quantitative description of the interspecies diversity of belowground structure in savanna woody plants**, O’Donnell, F., Caylor, K.K., Bhattachan, A, Dintwe, Kebonye, D’Odorico, P, Okin, G [pdf]	*Ecosphere* 6(9): 1-15. doi:10.1890/ES14-00310.1.	Refereed Article

#	Year	Title and Authors	Publisher	Category
79	2015	**Dynamic interactions of ecohydrological and biogeochemical processes in water-limited systems**, Wang, L., Manzoni, S., Ravi, S., Riveros-Iregui, D., Caylor, K.K. [pdf]	*Ecosphere* 6(8): 1-27. doi:10.1890/ES15-00122.1.	Refereed Article
80	2015	**Warmer and wetter soil stimulates assimilation more than respiration in rainfed agricultural ecosystem on the China Loess Plateau: the role of partially plastic film mulching tillage**, Gong, D., Hao, W., Mei, X., Gao, X., Caylor, K.K. [pdf]	*PLoS One* 10(8): e0136578. doi:10.1371/journal.pone.0136578.	Refereed Article
81	2015	**Soil organic C and total N pools in the Kalahari: potential impacts of climate change on C sequestration in savannas**, Dintwe, K., Okin, GS, D'Odorico, P, Hrast, T, Mladenov,N., Handorean, A., Bhattachan, A., Caylor, K.K. [pdf]	*Plant & Soil* 396(1-2): 27-44. doi:10.1007/s11104-014-2292-5.	Refereed Article
82	2016	**Global Patterns of the Contributions of Storm Frequency, Intensity, and Seasonality to Interannual Variability of Precipitation**, Good, S.P., Guan, K., Caylor, K.K. [pdf]	*Journal of Climate* 29(1): 3-15. doi:10.1175/JCLI-D-14-00653.1.	Refereed Article
83	2016	**Improved removal of volatile organic compounds for laser-based spectroscopy of water isotopes.**, Chang, E., Wolf, A., Gerlein-Safdi, C., Caylor, K.K. [pdf]	*Rapid Communications in Mass Spectrometry* 30(6): 784-790. doi:doi.org/10.1002/rcm.7497.	Refereed Article
84	2016	**Community Water Governance on Mount Kenya: An Assessment Based on Ostrom's Design Principles of Natural Resource Management**, Dell'Angelo, J, McCord, P, Gower, D., Carpenter, S., Caylor, K., Evans, T.P. [pdf]	*Mountain Research & Development* 36(1): 102-115. doi:10.1659/MRD-JOURNAL-D-15-00040.1.	Refereed Article
85	2016	**A platform for crowdsourcing the creation of representative, accurate landcover maps**, Estes, L, McRitchie, D., Choi, J., Debats, S., Evans, T., Guthe, W., Luo, D., Ragazzo, G., Zempleni, R., Caylor, K.K. [pdf]	*Environmental Modelling & Software* 80: 41-53. doi:10.1016/j.envsoft.2016.01.011.	Refereed Article
86	2016	**A generalized computer vision approach to mapping crop fields in heterogeneous agricultural landscapes**, Debats, S., Luo, D., Estes, L.D., Fuchs, T., Caylor, K.K. [pdf]	*Remote Sensing of Environment* 179: 210-221. doi:10.1016/j.rse.2016.03.010.	Refereed Article
87	2016	**Explaining inter-annual variability of gross primary productivity from plant phenology and physiology**, Zhou, S, Zhang, Y., Caylor, K.K., Luo, Y., Xiao, X., Ciais, P., Huang, Y., Wang, G. [pdf]	*Agricultural & Forest Meteorology* 226: 246-256. doi:10.1016/j.agrformet.2016.06.010.	Refereed Article
88	2016	**Reconciling agriculture, carbon and biodiversity in a savanna transformation frontier**, Estes, L., Searchinger, T., Spiegel, M., Tian, D., Sichinga, S., Mwale, M., Kehoe, L., Kuemmerle, T., Berven, A., Chaney, N., Sheffield, J., Wood, E.F., Caylor, K.K. [pdf]	*Philosophical Transactions of the Royal Society B - Biological Sciences* 371(1703): 20150316. doi:10.1098/rstb.2015.0316.	Refereed Article

#	Year	Title and Authors	Publisher	Category
89	2016	**Modeling ecohydrological dynamics of smallholder strategies for food production in dryland agricultural systems**, Gower, D. B., Dell'Angelo, J., McCord, P.F., Caylor, K.K., Evans, T.P. [pdf]	*Environmental Research Letters* 11(11): 115005. doi:10.1088/1748-9326/11/11/115005.	Refereed Article
90	2017	**An Ecohydrological Framework to Explain Shifts in Vegetation Organization Across Climatological Gradients**, Manfreda, S., Caylor, K.K., Good, S.P. [pdf]	*Ecohydrology* 10(3): e1809. doi:10.1002/eco.1809 .	Refereed Article
91	2017	**Dominant role of plant physiology in trend and variability of gross primary productivity in North America**, Zhou, S, Zhang, Y., Ciais, P, Xiao, X.M., Luo, Y.Q., Caylor, K.K., Huang, Y., Wang, G. [pdf]	*Scientific Reports* 7: 41366. doi:10.1038/srep41366.	Refereed Article
92	2017	**Comparison of multi-level water use efficiency between plastic film partially mulched and non-mulched croplands at eastern Loess Plateau of China**, Gong, D., Mei, X., Hao, W., Caylor, K.K. [pdf]	*Agricultural Water Management* 179: 215-226. doi:10.1016/j.agwat.2016.06.006.	Refereed Article
93	2017	**Household-level heterogeneity of water resources within common-pool resource systems**, McCord, P., Dell'Angelo, J., Gower, D., Caylor, K.K., Evans, T. [pdf]	*Ecology & Society* 22(1). doi:10.5751/ES-09156-220148.	Refereed Article
94	2017	**Comparison of ET partitioning and crop coefficients between partial plastic mulched and non-mulched maize fields**, Gong, D., Mei, X., Hao, W., Wang, H., Caylor, K.K. [pdf]	*Agricultural Water Management* 181: 23-34. doi:10.1016/j.agwat.2016.11.016.	Refereed Article
95	2017	**Triple oxygen isotope composition of leaf waters in Mpala, central Kenya**, Li, S., Levin, N., Soderberg, K, Dennis, K.J., Caylor, K.K. [pdf]	*Earth & Planetary Science Letters* 468: 38-50. doi:10.1016/j.epsl.2017.02.015.	Refereed Article
96	2017	**Validation of SMAP surface soil moisture products with core validation sites**, Colliander, A, Jackson, TJ, Bindish, R., others, including, Caylor, K.K. [pdf]	*Remote Sensing of Environment* 191: 215-231. doi:10.1016/j.rse.2017.01.021.	Refereed Article
97	2017	**Leaf water 18O and 2H maps show directional enrichment discrepancy in Colocasia esculenta**, Gerlein-Safdi, C., Gauthier, P., Sinkler, C., Caylor, K.K. [pdf]	*Plant, Cell, & Environment* 40(10): 2095-2108. doi:10.1111/pce.13002.	Refereed Article
98	2017	**Calibration of a parsimonious distributed ecohydrological daily model in a data-scarce basin using exclusively the spatio-temporal variation of NDVI**, Ruiz-Perez, G., Kock, J., Manfreda, Salvatore, Caylor, K.K., Frances, F. [pdf]	*Hydrology and Earth System Science* 21(12): 6235-6251. doi:10.5194/hess-21-6235-2017.	Refereed Article

#	Year	Title and Authors	Publisher	Category
99	2018	**Simulated sensitivity of African terrestrial ecosystem photosynthesis to rainfall frequency, intensity, and rainy season length**, Guan, K., Good, S.P., Caylor, K.K., Medvigy, D., Pan, Ming, Wood, E.F., Sato, H., Biasutti, M., Chen, M., Ahlstrom, A., Xiangtao, X. [pdf]	*Environmental Research Letters* 13(2): 25013. doi:10.1088/1748-9326/aa9f30.	Refereed Article
100	2018	**Measurements and Observations in the XXI century (MOXXI): innovation and multidisciplinarity to sense the hydrological cycle**, Flavia, T., Selker, J., van de Giesen, N., Abrate, T., Uijlenhoet, R., Porfiri, M., Manfreda, S., Caylor, K.K., 22 others [pdf]	*Hydrological Sciences Journal* 63(2): 169-196. doi:10.1080/02626667.2017.1420191.	Refereed Article
101	2018	**A large–area, spatially continuous assessment of land cover map error and its impact on downstream analyses**, Estes, L, Chen, P., Debats, S., Evans, T., Ferreira, S., Kuemmerle, T., Ragazzo, G., Sheffield, J, Wolf, A., Wood, E.F., Caylor, K.K. [pdf]	*Global Change Biology* 24(1): 322-337. doi:10.1111/gcb.13904.	Refereed Article
102	2018	**The Spatial and Temporal Domains of Modern Ecology**, Estes, L, Elsen, P., Truer, T., Ahmed, L., Caylor, K.K.., Chang, J., Choi, J., Ellis, E [pdf]	*Nature Ecology & Evolution* 2(5): 819. doi:10.1038/s41559-018-0524-4.	Refereed Article
103	2018	**On the Use of Unmanned Aerial Systems for Environmental Monitoring**, Manfreda, S., McCabe, M, Miller, P., Lucas, R., Madrigal, V.P., Mallinis, G., Ben Dor, E., Helman, D., Estes, L., Ciraolo, G., 13 others including Caylor, K. [pdf]	*Remote Sensing* 10(4): 641. doi:10.3390/rs10040641.	Refereed Article
104	2018	**Dew-induced transpiration suppression impacts the water and isotope balances of Colocasia leaves**, Gerlain-Safdi, C., Gauthier, P.G., Caylor, K.K. [pdf]	*Oecologia* 187(4): 1041-1051. doi:10.1007/s00442-018-4199-y.	Refereed Article
105	2018	**Dew deposition suppresses transpiration and carbon uptake in leaves**, Gerlain-Safdi, C., Koohafkan, MC, Chung, M., Thompson, S, Rockwell, FE, Caylor, K.K. [pdf]	*Agriculture & Forest Meteorology* 259: 305-316. doi:10.1016/j.agrformet.2018.05.015.	Refereed Article
		Since Prior Review:		
106 (B-1)	2018	**Comparing empirical and survey-based yield forecasts in a dryland agro-ecosystem**, Zhao, Y., Vergopolan, N., Baylis, K, Blekking, J. , Caylor, K.K., Evans, T.P., Giroux, S., Sheffield, J, Estes, L. [pdf]	*Agricultural & Forest Meteorology* 262: 147-156. doi:10.1016/j.agrformet.2018.06.024.	Refereed Article
107 (B-2)	2019	**Biophysical effects on soil crack morphology in a faunally active dryland vertisol**, DeCarlo, K., Caylor, K.K. [pdf]	*Geoderma* 334: 134-145. doi:10.1016/j.geoderma.2018.07.042.	Refereed Article

#	Year	Title and Authors	Publisher	Category
108	2019	**A global database of water vapor isotopes measured with high temporal resolution infrared laser spectroscopy**, Wei, Z., Lee, X., Aemisegger, F., Benetti, M., Berkelhammer, M., Casado, M., Caylor, K.K., Christner, E., Dryoff, C., Garcia, O.E., Gonzalez, Y, Griffis, T., Kurita, N., Liang, J., Liang, M.-C., Lin, G., Noone, D., Gribanov, K., Munksgaard, N.C., Schneider, M., Ritter, F., Steen-Larsen, H.C, Vallet-Coulomb, C., Wen, X., Wright, J.S., Xiao, W., Yoshimura, K. [pdf]	*Scientific Data* 6: 180302. doi:10.1038/sdata.2018.302.	Refereed Article
109	2019	**Cognitive biases about climate variability in smallholder farming systems in Zambia**, Waldman, K, Vergopolan, N., Attari, S.Z., Sheffiled, J., Estes, L.D., Caylor, K.K., Evans, T.P [pdf]	*Weather, Climate & Society* 11: 369-383. doi:10.1175/WCAS-D-18-0050.1.	Refereed Article
110	2019	**A high-frequency mobile phone data collection approach for research in social-environmental systems: Applications in climate variability and food security in sub-Saharan Africa.**, Giroux, S., Kouper, I., Estes, L., Schumacher, J., Waldman, K., Greenshields, J.T., Dickinson, J.T., Caylor, K.K., Evans, T. [pdf]	*Environmental Modelling & Software* 119: 57-69. doi:10.1016/j.envsoft.2019.05.011.	Refereed Article
111	2019	**The salience of climate change in farmer decision making within smallholder semi-arid agroecosystems**, Waldman, K, Attari, S, Gower, D, Giroux, S, Caylor, K.K., Evans, T.P. [pdf]	*Climatic Change* 156: 527-543. doi:10.1007/s10584-019-02498-3.	Refereed Article
112	2019	**Variability in urban population distributions across Africa**, Tuholske, C., Caylor, K.K., Evans, T., Avery, R. [pdf]	*Environmental Research Letters* 14: 085009. doi:10.1088/1748-9326/ab2432.	Refereed Article
113	2020	**Environmental heterogeneity and commodity sharing in smallholder agroecosystems**, Giroux, S., McCord, P, Lopus, S., Gower, D., Dell'Angelo, J., Dickinson, S., Chen, X., Caylor, K.K., Evans, T. [pdf]	*PLoS One* 15(1): e0228021. doi:10.1371/journal.pone.0228021.	Refereed Article
114	2020	**Comparing measures of urban food security in Accra, Ghana**, Tuholske, C., Andam, K., Blekking, J., Evans, T., Caylor, K.K. [pdf]	*Food Security* 12: 417-431. doi:10.1007/s12571-020-01011-4.	Refereed Article
115	2021	**Smallholder farmers' use of mobile phone services in central Kenya**, Krell, N.T., Giroux, S.A., Guido, Z.S., Hannah, C., Lopus, S.E., Caylor, K.K., Evans, T. [pdf]	*Climate & Development* 13(3): 215-227. doi:10.1080/17565529.2020.1748847.	Refereed Article

#	Year	Title and Authors	Publisher	Category
116	2020	**Accounting for training data error in machine learning applied to Earth observations**, Elmes, A., Alemohammad, H., Avery, R., Caylor, K.K., Eastman, R, Fishgold, L., Friedl, M., Jain, M., Kohli, D., Laso-Bayas, J.C., Lunga, D., McCarty, J.L., Pontius Jr., R.G., Reinmann, A.B., Rogan, J., Song, L. , Stoynova, H., Ye, S., Yi, Z-F., Estes, L. [pdf]	*Remote Sensing* 12: 1034. doi:10.3390/rs12061034.	Refereed Article
117	2020	**Effects of crack morphology on soil carbon flux dynamics in a dryland vertisol**, DeCarlo, K., Caylor, K.K. [pdf]	*Geoderma* 375: 114478. doi:10.1016/j.geoderma.2020.114478.	Refereed Article
118	2020	**Geographic Object-Based Image Analysis Framework for Mapping Vegetation Physiognomic Types at Fine Scales in Neotropical Savannas**, Ribeiro, F., Roberts, D.A., Hess, L.L., Davis, F.W., Caylor, K.K., Daldegan, G.A [pdf]	*Remote Sensing* 12: 1721. doi:10.3390/rs12111721.	Refereed Article
119	2020	**Dynamics of population growth in secondary cities across southern Africa**, Zimmer, A., Guido, Z., Tuholske, C., Pakalniskis, A., Lopus, S.E., Caylor, K.K., Evans, T. [pdf]	*Landscape Ecology* 35: 2501-2516. doi:10.1007/s10980-020-01086-6.	Refereed Article
120	2020	**Climate sensitivity of water use by riparian woodlands at landscape scales**, Mayes, M., Caylor, K.K., Singer, Michael, Stella, John, Nagler, Pam [pdf]	*Hydrological Processes* 34: 4884-4903. doi:10.1002/hyp.13942.	Refereed Article
121	2020	**Farmer Forecasts: Impacts of Seasonal Rainfall Expectations on Agricultural Decision-Making in Sub-Saharan Africa**, Guido, Z., Zimmer, A., Lopus, S., Hannah, C., Gower, D., Waldman, K., Krell, N., Sheffield, J., Caylor, K., Evans, T. [pdf]	*Climate Risk Management* 30: 100247. doi:10.1016/j.crm.2020.100247.	Refereed Article
122	2021	**Deforestation-induced warming over tropical mountain regions regulated by elevation**, Zeng, Z., Wang, D., Yang, L., Wu, J., Ziegler, A., Liu, M., Clais, P., Searchinger, T., Yang, Z-L, Chen, D., Chen, A, Li, LZX, Piao, S., Taylor, D., Cai, X., Pan, M., Peng, L., Lin, P. , Gower, D., Feng, Y., Zheng, C., Guan, K., Lian, X., Wang, T., Wang, L., Jeong, S-J., Wei, Z., Sheffield, S., Caylor, K., Wood, EF [pdf]	*Nature Geoscience* 14: 23-29. doi:10.1038/s41561-020-00666-0.	Refereed Article
123	2021	**Mapping research topics at multiple levels of detail**, Lafia, S., Kuhn, W., Caylor, K.K., Hippel, L. [pdf]	*Patterns* 2: 100210. doi:10.1016/j.patter.2021.100210.	Refereed Article
124	2021	**Has the vision of a gender quota rule been realized for community-based water management committees in Kenya?**, Hannah, C., Giroux, S., Krell, N, Lopus, S., McCann, L., Zimmer, A., Caylor, K.K., Evans, T.P. [pdf]	*World Development* 137: 105154. doi:10.1016/j.worlddev.2020.105154..	Refereed Article

#	Year	Title and Authors	Publisher	Category
125	2021	**Challenges and opportunities in precision irrigation decision-support systems for center pivots** , Zhang, J., Guan, K., Peng, B., Jiang, C., Zhou, W., Yang, Y., Pan, M., Franz, T., Heeren, D., Rudnick, D., Abimbola, O., Kimm. H, Caylor, K., Good, S., Khanna, M., Gates, J., Cai, Y. [pdf]	*Environmental Research Letters* 16: 053003. doi:10.1088/1748-9326/abc436.	Refereed Article
126	2021	**Field-scale soil moisture bridges the spatial-scale gap between drought monitoring and agricultural yields**, Vergopolan, Noemi, Xiong, S., Estes, L., Wanders, N., Cheney, N.W., Wood, E.F., Konar, M., Caylor, K.K., Beck, H.E., Gatti, N., Evans, T, Sheffield, J. [pdf]	*Hydrology and Earth System Science* 25: 1827-1847. doi:10.5194/hess-25-1827-2021.	Refereed Article
127	2021	**Vegetation responses to climatic and geologic controls on water availability in Arizona**, Sabathier, R., Singer, M.B., Stella, J., Roberts, D., Caylor, K.K. [pdf]	*Environmental Research Letters* 16: 064029. doi:10.1088/1748-9326/abfe8c.	Refereed Article
128	2021	**Drought onset and propagation into soil moisture and grassland vegetation responses during the 2012–2019 major drought in Southern California**, Wartner, M., Singer, M.B., Cuthbert, M.O., Roberts, D., Caylor, K.K., Sabathier, R., Stella, J. [pdf]	*Hydrology and Earth System Science* 25: 3713–3729. doi:10.5194/hess-25-3713-2021.	Refereed Article

Works In Press:

#	Year	Title and Authors	Publisher	Category
B-1	2021	**Global Urban Population Exposure to Extreme Heat**, Tuholske, C., Caylor, K.K., Funk, C. , Verdin, A. , Sweeney, S., Grace, K., Peterson, P., Evans, T.	*Proceedings of the National Academy of Sciences* .	Refereed Article

Work Submitted:
None Provided.

PART II. TEACHING (50% Geography Dept. workload; 50% Bren School workload. 50% Administrative teaching release throughout the review period.)

Workload Descriptions

1. *Geography Department*: Geography department teaching workload for full-time ladder faculty is 3 Instructional Workload Courses (IWC) per year. 50% workload is 1.5 IWC per year.

2. *Bren School*: The official teaching workload in the Bren School for full-time ladder faculty members is 3.5 Instructional Workload Courses (IWC) per academic year. Full-time faculty are expected to be in residence during the academic year and teach at least two out of three quarters unless they are on sabbatical or approved leave. Each quarter on sabbatical counts as 1.17 IWC for full-time faculty. The teaching workload for faculty with partial appointments is the equivalent fraction of 3.5 and the teaching workload is negotiated with the dean. 50% workload is 1.75 IWC per year.

   Every full-time faculty member will advise or co-advise a Master's Group Project (ESM 401 series) or Eco-E Project (ESM 402 series) equivalent to 1 IWC. Faculty advisors are expected to meet with master's groups weekly during the academic year.

Course Equivalencies:

- ESM 401A/ESM 402A: 4 units = 0.29 IWC
- ESM 401B/ESM 402B: 4 units = 0.29 IWC
- ESM 401C/ESM 402C: 4 units = 0.29 IWC
- ESM 401D/ESM 402D: 2 units = 0.13 IWC

Every full-time faculty member will teach and/or co-teach core courses, elective courses and seminars in the MESM and PhD programs equivalent to at least (a) 2.5 IWC in addition to advising a project or (b) 3.5 IWC if not advising a project.

Course Equivalencies:

- MESM core and elective courses: 4 units = 1 IWC; 2 units = 0.5 IWC.
- Co-taught 4-unit MESM core course = 0.6 IWC per instructor.
- Co-taught 4-unit MESM elective course = 0.5 IWC per instructor.
- MESM lab course: 4 or 5 units = 1 IWC.
- Teaching an additional section (e.g., ESM 263) = 0.67 IWC.
- PhD core courses: ESM 510 (1 unit) = 0.25 IWC; ESM 512 (2 units) = 0.5 IWC; ESM 514 (4 units) = co-taught at 1 IWC per instructor.
- PhD seminar course: 2 units = 0.5 IWC; 4 units = 1 IWC.

3. *ERI Directorship IWC Workload Credit:* The ERI directorship is for a 5-year term with annual reappointment. The appointment comes with a 50% teaching load reduction. Therefore, my four-year annual required teaching load in Geography is 1-0-1-1 (an average of 0.75 IWC per year), and in Bren it would be 1-0.5-1-1 (an average of 0.875 IWC per year).

4. *IWC Workload Balance:* Overall, the combination of my joint appointments and ERI directorship establish my annual teaching requirements at 1.625 IWC per year. Since my initial appointment, my total IWC balance in Geography is a surplus of 0.25 IWC relative to my total requirements and my total IWC balance in the Bren School is a surplus of 2.71 IWC. Overall, the balance of my IWC teaching surplus at UCSB is 2.96 IWC.

Catalog Courses:

Qtr	Course	Class Type	Units	Hrs/Wk	Enrollment	ESCI/Written Evals Avail.
F18	GEOG 596, Directed Reading and Research	Tut		2	2	No/No
F18	ESM 203, Earth System Science	Lec	4.0	1	90	Yes/Yes [link]
F18	ESM 401B, Group Project - B	Dis	4.0	1	5	No/No
F18	GEOG 199RA, Independent Research Assistant	Tut		1	1	No/No
F18	GEOG 598, Master's Thesis	Tut		1	1	No/No
F18	GEOG 599, PhD Dissertation	Tut		2	2	No/No
W19	GEOG 596, Directed Reading and Research	Tut		1	1	No/No
W19	ESM 401C , Group Project - C	Dis	4.0	1	5	No/No
W19	GEOG 599, PhD Dissertation	Tut		2	2	No/No
S19	GEOG 596, Directed Reading and Research	Tut		1	1	No/No
S19	ESM 401A, Group Project - A	Lec	4.0	1	5	No/No
S19	ESM 401D, Group Project - D	Dis	2.0	1	4	No/No
S19	GEOG 599, PhD Dissertation	Tut		2	2	No/No
S19	G136, Water, Energy, and Ecosystems	Lec	4.0	1	10	Yes/Yes [link]
F19	GEOG 596, Directed Reading and Research	Tut		4	4	No/No
F19	ESM 203, Earth System Science	Lec	4.0	1	87	Yes/Yes [link]
F19	ESM 401B, Group Project - B	Dis	4.0	1	4	No/No
F19	GEOG 597, Individual Study - PhD Exam	Tut		1	1	No/No
F19	GEOG 598, Master's Thesis	Tut		1	1	No/No

Qtr	Course	Class Type	Units	Hrs/Wk	Enrollment	ESCI/Written Evals Avail.
F19	GEOG 599, PhD Dissertation	Tut		2	2	No/No
W20	GEOG 596, Directed Reading and Research	Tut		3	3	No/No
W20	ESM 401C , Group Project - C	Dis	4.0	1	4	No/No
W20	GEOG 199, Independent Studies	Tut		1	1	No/No
W20	GEOG 599, PhD Dissertation	Tut		2	2	No/No
S20	GEOG 596, Directed Reading and Research	Tut		1	1	No/No
S20	ESM 401A, Group Project - A	Lec	4.0	1	4	No/No
S20	ESM 401D, Group Project - D	Dis	2.0	1	4	No/No
S20	GEOG 597, Individual Study - PhD Exam	Tut		1	1	No/No
S20	GEOG 598, Master's Thesis	Tut		1	1	No/No
S20	GEOG 599, PhD Dissertation	Tut		1	1	No/No
S20	GEOG 136, Water, Energy, and Ecosystems	Lec	4.0	1	10	Yes/Yes [link]
F20	ESM 203, Earth System Science	Lec	4.0	1	83	Yes/Yes [link]
F20	GEOG 596, Directed Reading and Research	Tut		2	2	No/No
F20	ESM 401B, Group Project - B	Dis	4.0	1	4	No/No
F20	GEOG 597, Individual Study - PhD Exam	Tut		1	1	No/No
F20	GEOG 598, Master's Thesis	Tut		1	1	No/No
F20	GEOG 599, PhD Dissertation	Tut		2	2	No/No
W21	GEOG 596, Directed Reading and Research	Tut		2	2	No/No
W21	ESM 401C , Group Project - C	Dis	4.0	1	4	No/No
W21	GEOG 597, Individual Study - PhD Exam	Tut		1	1	No/No
W21	GEOG 598, Master's Thesis	Tut		1	1	No/No
W21	GEOG 599, PhD Dissertation	Tut		2	2	No/No
S21	GEOG 596, Directed Reading and Research	Tut		1	1	No/No
S21	ESM 401A, Group Project - A	Lec	4.0	1	5	No/No
S21	ESM 401D, Group Project - D	Dis	2.0	1	4	No/No
S21	GEOG 597, Individual Study - PhD Exam	Tut		1	1	No/No
S21	GEOG 598, Master's Thesis	Tut		1	1	No/No
S21	GEOG 599, PhD Dissertation	Tut		1	1	No/No
S21	GEOG 288KC, Special Topics in Geography	Dis	2.0	1	5	Yes/Yes [link]

MESM Projects Advised

Year	Project Title	Students	Q3	Q4	Q5	Q7
2020 - 2021	Wild Pig Management at the Jack and Laura Dangermond Preserve	Peter Omasta, Shuhan Song, Benson Truong, AJ Zekanoski	100% Strongly Agree	100% Excellent	100% Always	100% Excellent
2019 - 2020	A stormwater management plan to reduce pollution in Maunalua Bay	Eleonore Durand, Natalie Dornan, Tara Jagadish, Erica Johnson	0% Strongly Agree, 100% Somewhat Agree	50% Satisfactory, 50% Fair	75% Always, 25% Usually	75% Satisfactory, 25% Poor

Year	Project Title	Students	Q3	Q4	Q5	Q7
2018 - 2019	The Dangermond Preserve: Integrating historical chance and future projections to guide conservation	Brad Anderson, Mechan Bowen, Lucy Genua, Kam Howo, Genelle Ives	40% Somewhat agree, 40% Neutral, 20% Somewhat disagree	20% Very Good, 60% Satisfactory, 20% Fair	40% Usually, 20% Sometimes, 40% Rarely	20% Very good, 60% Satisfactory, 20% Fair

Undergraduate Projects Directed:

Student	Project	Role	Year
Sierra Yates	Hydrological dynamics of the Dangermond Preserve	Chair	2020

Graduate Degree Committees, MA/MS Committees:

Student	Year	Institution	Chair/Member	Current Employment
Ryan Avery	2020	UCSB	Chair	Analyst - Development Seed

Graduate Degree Committees, Ph.D. Committees:

Student	Year	Institution	Chair/Member	Current Employment
Susan Meerdink	2018	UCSB	Committee Member	Assistant Professor - University of Iowa
Keita DeCarlo	2019	Princeton University	Chair	Researcher - USGS
Christin Abel	2020	University of Copenhagen	Assessment Committee Member	Postdoctoral Researcher - University of Copenhagen
Cascade Tuholske	2020	UCSB	Chair	Earth Institute Postdoctoral Research Scientist - Columbia University
Drew Gower	2020	Princeton University	Chair	Postdoctoral Associate - University of Maryland
Fernanda Riberio	2020	UCSB	Committee Member	Postdoctoral Researcher - Smithsonian National Zoo and Conservation Center
Sara Lafia	2020	UCSB	Committee Member	Postdoctoral Fellow - University of Michigan
Natasha Krell	2021	UCSB	Chair	Research Scientist - Department of Defense
Bryn Morgan	In Progress	UCSB	Chair	-
Kristina Fauss	In Progress	UCSB	Chair	-
Anna Boser	In Progress	UCSB	Co-Chair	-
Rachel Green	In Progress	UCSB	Co-Chair	-

Student	Year	Institution	Chair/Member	Current Employment
Chris Heckman	In Progress	UCSB	Committee Member	-
Chris Kibler	In Progress	UCSB	Committee Member	-
Elizabeth Forbes	In Progress	UCSB	Committee Member	-
Ling Cai	In Progress	UCSB	Committee Member	-
Lory Willard	In Progress	University of Florida	Committee Member	-
Mike Johnson	In Progress	UCSB	Committee Member	-
Pierre Lochin	In Progress	University of Lyon	Committee Member	-

Postdoctoral Scholars Supervised:

Postdoctoral Researcher	Years	Affiliation	Current Employment
Marc Mayes	2016-2020	UCSB, Geography	-
Farai Kaseke	2018 -	UCSB, Geography	-
Marcus Thompson	2019 -	UCSB, NCEAS	-

Other Teaching Contributions:

Instructor, Coupled Natural-Human Systems Short Course. University of California, Irvine. August, 2018
Advisor, WAVES Lab High School Summer Internship, Mahima Agarwal, Palo Alto, CA. June, 2018

PART III. PROFESSIONAL ACTIVITIES

Lectures and Seminars Presented:

Month/Year	Title	Meeting/Place
8/2018	Invited Speaker, Session on "Vegetation dynamics and ecosystem resilience under global climate change"	New Orleans, LA
8/2018	Instructor, Coupled Natural-Human Systems Short Course	University of California, Irvine
5/2019	Keynote Speaker, The Jack and Laura Dangermond Preserve: A Perfect Place for Advancing Conservation Science	University of California, Santa Barbara
8/2019	Invited Speaker, The effects of climate variability on the structure and function of tropical vegetation	Accra, Ghana
9/2019	Invited Speaker, Coupled natural-human dynamics in smallholder rain-fed agricultural systems	University of Florida
12/2019	Invited Speaker, Linkages between water, vegetation, and livelihoods in Sub-Saharan drylands	San Francisco, CA
5/2021	Keynote Speaker, A mile wide and a pixel deep: Integrating machine learning, computer vision, and satellite imagery for coupled-natural human system modeling	Virtual

Conference Posters and Presentations:

Month/Year	Title	Meeting/Place
12/2018	**Seasonal and diurnal drone and ground-based thermal, multispectral and hyperspectral imaging to quantify responses of California oak woodland productivity and evapotranspiration to extreme climate conditions**. *Marc Mayes, Kelly Caylor	American Geophysical Union Fall Meeting
12/2018	**Using active learning to quantify how training data errors impact classification accuracy over smallholder-dominated agricultural systems**. *Lyndon D Estes, Stephanie R Debats, Dennis McRitchie, Ronald Eastman, Lei Song, Tammy Woodard, Sitian Xiong, Su Ye, Kaixi Zhang, Ryan Barry Avery, Kelly K Caylor	American Geophysical Union Fall Meeting
12/2018	**Quantifying the Effect of Farmer Management Decisions on Maize Yield in Zambia**. *Michael Cecil, Katherine Baylis, Jordan Blekking, Kelly K Caylor, Tom P Evans, Megan Konar, Justin Sheffield, Noemi Vergopolan, Kurt Waldman, Yi Zhao, Lyndon D Estes	American Geophysical Union Fall Meeting
8/2018	**Multi-scale dynamics of vegetation responses to changing rainfall variability in dryland regions**. *K.K. Caylor (Invited)	Ecological Society of America
12/2018	**A Convolutional Neural Network Approach to Segmenting Smallholder Agriculture**. Rya*n Barry Avery, Kelly K Caylor, Lyndon D Estes, Ronald Eastman, Su Ye, Lei Song, Kaixi Zhang, Sitian Xiong, Dennis McRitchie, Tammy Woodard	American Geophysical Union Fall Meeting

Month/Year	Title	Meeting/Place
12/2018	**Fusing Remote Sensing and Demography to Assess which Sub-Saharan African Cities Are Growing the Fastest**. *Tuholske, C., Caylor, K.K.	American Geophysical Union Fall Meeting
10/2018	**Regional migration, global climate change, and the future of irrigation on Kenyan farms**. *Lopus, S. Waldman, K., Guido, Z., Caylor, K., Evans, T.	International Conference on Migration, Environment and Climate: What risk inequalities?
12/2018	**Reimagining high-resolution ecosystem monitoring with low-cost autonomous sensing**. *Kelly K Caylor, Elizabeth Forbes, Grace Lewin, Mark Hirsh	American Geophysical Union Fall Meeting
4/2019	**Integrating humans and machines to map smallholder-dominated agricultural frontiers**. *Estes, Lyndon Despard; Song, Lei; Ye, Su; Avery, Ryan; McRitchie, Dennis; Debats, Stephanie; Xiong, Sitian; Eastman, Ron; Woodard, Tammy; Caylor, Kelly	4th Open Science Meeting of the Global Land Programme
12/2019	**Linkages between water, vegetation, and livelihoods in Sub-Saharan drylands**. *Caylor, KK; Evans, TP; Estes, LD; Sheffield, J; Vergopolan, N; Krell, N; Gower, D; Guido, Z (Invited)	American Geophysical Union Fall Meeting
12/2019	**Onset and propagation of the 2012-2016 drought in southern California**. *Warter, MM; Singer, MB; Roberts, DA; Cuthbert, MO; Caylor, KK; Sabathier, R; Stella, JC	American Geophysical Union Fall Meeting
12/2019	**Is Forest Code legislation protecting Neotropical savanna habitats in agricultural landscapes? A high-resolution Gap analysis of the Brazilian Cerrado**. *Ribeiro, F; Davis, FW; Roberts, DA; Caylor, KK; Hess, LL; Daldegan, GA; Brum, FT.	American Geophysical Union Fall Meeting
12/2019	**Animal, vegetable, mineral: Identifying the indirect effects of large vertebrate herbivores and land use on carbon cycling in a Kenyan savanna ecosystem**. *Forbes, ES; Caylor, KK; Young, T; Hirsch, M; Young, HS	American Geophysical Union Fall Meeting
12/2019	**The greening and browning of the Arizona desert in response to climate-controlled water availability**. *Sabathier, R; Singer, MB; Stella, JC; Caylor, KK; Roberts, DA	American Geophysical Union Fall Meeting
12/2019	**A fine-resolution, global comparison of urban exposure to extreme temperature**. *Tuholske, C; Funk, CC; Caylor, KK; Evans, T; Sweeney, S.	American Geophysical Union Fall Meeting
12/2019	**Improving maps of smallholder-dominated croplands through tight integration of human and machine intelligence**. *Estes, LD; Ye, S; Song, L; Avery, RB; McRitchie, D; Eastman, R; Debats, SR; Caylor, KK	American Geophysical Union Fall Meeting
12/2019	**Monitoring dryland riparian vegetation water use and stress via ECOSTRESS**. *Mayes, MT; Morgan, B; Caylor, KK; Singer, MB; Stella, JC; Roberts, DA	American Geophysical Union Fall Meeting
12/2019	**The spatiotemporal scales of drought and its impacts on field-scale agricultural yields**. *Vergopolan, N; Xiong, S; Sheffield, J; Wood, EF; Evans, TP; Caylor, KK; Estes, LD	American Geophysical Union Fall Meeting

Month/Year	Title	Meeting/Place
12/2019	**Improved assessment of drylands riparian vegetation water use at leaf-to-landscape scales using unmanned aerial vehicle (UAV)-based thermal remote sensing**. *Morgan, B.; Mayes, MT; Caylor, KK	American Geophysical Union Fall Meeting
12/2019	**Drought projection and modeling causal feedbacks with Earth Observations in East Africa**. *Green, RK; Caylor, KK; Funk, CC; Roberts, DA (Invited)	American Geophysical Union Fall Meeting
12/2019	**To what extent does climate variability explain farmers' planting decisions in central Kenya?**. *Krell, N; Davenport, F; Peterson, S; Shukla, S; Husak, GJ; Turner, W; Funk, CC; Caylor, KK	American Geophysical Union Fall Meeting
12/2020	**Consequences of variable rainfall on farming outcomes for dryland maize farmers**. *Krell, N; Morgan, B; Gower, D; Caylor, KK	American Geophysical Union Fall Meeting
12/2020	**Seasonal Vegetation-Hydrological Coupling across Land Covers in East Africa**. *Green, RK; Caylor, KK; Funk, CC; Roberts, DA	American Geophysical Union Fall Meeting
12/2020	**Improving drought monitoring and crop yield prediction with field-scale soil moisture**. *Sheffield, J; Vergopolan, N; Xiong, S; Estes, LD; Wanders, N; Chaney, NW; Wood, EF; Konar, M; Caylor, KK; Beck, H; Gatti, N; Evans, T	American Geophysical Union Fall Meeting
12/2020	**Global Urban Population Exposure to Extreme Heat**. *Tuholske, C; Caylor, KK; Funk, C; Verdin, A; Sweeney, S; Peterson, P; Evans, T; Grace, K	American Geophysical Union Fall Meeting
8/2020	**Wild robots: Developing DIY technology to investigate soil carbon flux in a long-term, landscape-scale, large herbivore exclosure experiment in a central Kenya savanna**. *Forbes, ES; Caylor, KK; Hirsch, ME; Schimel, JP; Young, T; Young, HS	American Geophysical Union Fall Meeting
4/2021	**Stable isotope insights into dryland ecohydrology**. *Singer, M; Sargeant, S; Stella, J.; Caylor, KK; Roberts, D.; Kui, L.; Kaseke, Farai; Mayes, M; Pelletier, L;, Williams, J; Warter, M; Sabathuer, R.; McMahon, C; Kibler, C; Morgan, B; Rohde, M.	European Geosciences Union, General Assembly

Grants and Contracts:

Years	Agency/Source	Title	Total Amount	Total to UCSB	Personal Share	Role	New/Cont
1/1/2018-12/31/2018	Omidyar Foundation	Developing and Scaling up the Mapping Africa Active Learning Platform	$79,838	$79,838	$79,838	PI	Cont
5/1/2018-6/30/2019	The Nature Conservancy	Task 25: Dangermond Preserve Bren Summer Internships and Group Project	$17,000	$17,000	$17,000	PI	Cont
1/1/2019-1/31/2020	National Geographic Society	Global maps of center pivot agriculture for improving estimates of land use change and water use	$100,811	$100,811	$100,811	PI	New

Years	Agency/Source	Title	Total Amount	Total to UCSB	Personal Share	Role	New/Cont
9/1/2018-8/31/2022	Department of Defense, SERDP	Strategic Environmental Research & Development: Understanding and Assessing Riparian Habitat Vulnerability to Drought-Prone Climate Regimes on Department of Defense Bases in the Southwestern US	$1,704,236	$1,704,236	Pooled	Co-PI	Cont
10/1/2019-9/30/2021	Zegar Foundation	Developing and Implementing Novel Tools for Assessing Riparian Ecosystem Resilience at the Dangermond Preserve	$321,583	$321,583	$321,583	PI	New
9/1/2019-8/31/2023	National Science Foundation	CNH2-L: Linkages and Interactions Between Urban Food Security and Rural Agricultural Systems	$1,600,000	$243,724	$243,724	Co-PI	New
		Total New :	$2,022,394	$666,118	$666,118		
		Total :	$3,823,468	$2,467,192	$762,956		

Reviewing and Refereeing Activity:

Year	Activity	Journal/Agency
2018	Referee	Agricultural and Forest Meteorology
2018	Referee	Biology Letters
2018	Referee	Communications Biology
2018	Referee	Journal of Water Resources Planning & Management
2018	Referee	Landscape Ecology
2018	Referee	Nature Climate Change (3)
2018	Referee	Nature Communications
2018	Referee	Progress in Physical Geography
2018	Referee	Water Resources Research
2019	Referee	Water Resources Research
2020	Editor	Earth's Future (39)
2020	Referee	Nature Sustainability
2020	Referee	New Phytologist
2020	Referee	Proceedings of the National Academy of Sciences
2021	Editor	Earth's Future (18)
2021	Referee	One Earth

Special Appointments:

2016-2019, Editorial Board, *Environmental Research Letters, Reviews*
2020 -, Editor, *Earth's Future*

Other Professional Contributions:

PART IV. SERVICE

University Service:

Year	Role	Service
2018 - 2019	Participating Faculty	Interdepartmental PhD Emphasis in Environment and Society

Year	Role	Service
2018 - 2019	Member	Data Science Curriculum Committee
2018 - 2019	Member	North Campus Open Space Administrative Advisory Group
2018 - 2019	Member	Campus Data Science Initiative Working Group
2018 - 2019	Member	Data Science Working Group, UCSB
2018 - 2019	Ex-Officio Member	Earth Research Institute Advisory Committee, UCSB
2018 - 2019	Director	Earth Research Institute, University of California, Santa Barbara
2018 - 2019	Chair	Earth Research Institute, Personnel Committee
2018 - 2019	Member	NCEAS Campus Advisory Committee
2019 - 2020	Participating Faculty	Interdepartmental PhD Emphasis in Environment and Society
2019 - 2020	Member	Data Science Curriculum Committee
2019 - 2020	Member	Campus Data Science Initiative Working Group
2019 - 2020	Member	North Campus Open Space Administrative Advisory Group
2019 - 2020	Member	Dangermond Endowed Chair Search Committee, Office of Research
2019 - 2020	Ex-Officio Member	Earth Research Institute Advisory Committee, UCSB
2019 - 2020	Chair	Earth Research Institute, Personnel Committee
2019 - 2020	Member	Space Committee, Office of Research
2020 - 2021	Participating Faculty	Interdepartmental PhD Emphasis in Environment and Society
2020 - 2021	Member	Offsite Research Committee, University of California, Santa Barbara
2020 - 2021	Member	Campus Data Science Initiative Working Group
2020 - 2021	Member	Steering Committee, Climate Hazards Center, UCSB
2020 - 2021	Member	North Campus Open Space Administrative Advisory Group
2020 - 2021	Ex-Officio Member	Earth Research Institute Advisory Committee, UCSB
2020 - 2021	Ex-Officio Member	Earth Research Institute Computing Committee, UCSB
2020 - 2021	Chair	NCEAS Campus Advisory Committee
2020 - 2021	Chair	Earth Research Institute, Personnel Committee

Department Service:

Year	Role	Service
2018 - 2019	Member	Sustainable Water Markets (SWM) Fellowship Program Committee, Bren School of Environmental Science and Management, University of California, Santa Barbara
2018 - 2019	Chair	Space Committee, Department of Geography, University of California, Santa Barbara
2018 - 2019	Member	Graduate Admission Committee, Department of Geography, University of California, Santa Barbara
2018 - 2019	Member	Vegetation Data Science Faculty Search Committee, Department of Geography, UCSB
2019 - 2020	Chair	Space Committee, Department of Geography, University of California, Santa Barbara
2019 - 2020	Member	Group Project Committee, Bren School of Environmental Science and Management, University of California, Santa Barbara
2019 - 2020	Member	Dangermond Endowed Chair Search Committee, Department of Geography
2019 - 2020	Member	Sustainable Water Markets (SWM) Fellowship Program Committee, Bren School of Environmental Science and Management, University of California, Santa Barbara
2020 - 2021	Chair	Space Committee, Department of Geography, University of California, Santa Barbara
2020 - 2021	Member	DEI Committee, Department of Geography, UCSB
2020 - 2021	Member	Faculty Executive Committee, Bren School of Environmental Science and Management, University of California, Santa Barbara

Public Service:

Year	Role	Service