camels_name - Name				
Attribute	***Description***	***Unit***	***Data source***	***References***
gauge_id	catchment identifier (8-digit USGS hydrologic unit code)	-	N15 - USGS data	
huc_02	region (2-digit USGS hydrologic unit code)	-	N15 - USGS data	
gauge_name	gauge name, followed by the state	-	N15 - USGS data	

camels_topo - Topography and location				
Attribute	***Description***	***Unit***	***Data source***	***References***
gauge_lat	gauge latitude	° north	N15 - USGS data	
gauge_lon	gauge longitude	° east	N15 - USGS data	
elev_mean	catchment mean elevation	meter above sea level	N15 - USGS data	
slope_mean	catchment mean slope	m/km	N15 - USGS data	
area_gages2	catchment area (GAGESII estimate)	km^2	N15 - USGS data	Falcone (2011)
area_geospa_fabric	catchment area (Geospatial Fabric estimate)	km^2	N15 - Geospatial Fabric	Viger (2014), Viger and Bock (2014)

camels_clim - Climate indices - *: Computed over the period 1989/10/01 to 2009/09/30				
Attribute	***Description***	***Unit***	***Data source***	***References***
p_mean	mean daily precipitation	*mm/day*	N15 - Daymet*	
pet_mean	mean daily PET [estimated by N15 using Priestley-Taylor formulation calibrated for each catchment]	*mm/day*	N15 - Daymet*	
aridity	aridity (PET/P, ratio of mean PET [estimated by N15 using Priestley-Taylor formulation calibrated for each catchment] to mean precipitation)	-	N15 - Daymet*	
p_seasonality	seasonality and timing of precipitation (estimated using sine curves to represent the annual temperature and preciptiation cycles, positive [negative] values indicate that precipitation peaks in summer [winter], values close to 0 indicate uniform precipitation throughout the year)	-	N15 - Daymet*	Eq. 14 in Woods et al. (2009)
frac_snow_daily	fraction of precipitation falling as snow (i.e., on days colder than 0°C)	-	N15 - Daymet*	
high_prec_freq	frequency of high precipitation days (>= 5 times mean daily precipitation)	days/year	N15 - Daymet*	
high_prec_dur	average duration of high precipitation events (number of consecutive days >= 5 times mean daily precipitation)	days	N15 - Daymet*	
high_prec_timing	season during which most high precipitation days (>= 5 times mean daily precip.) occur	season	N15 - Daymet*	
low_prec_freq	frequency of dry days (<1 mm/day)	days/year	N15 - Daymet*	
low_prec_dur	average duration of dry periods (number of consecutive days <1 mm/day)	days	N15 - Daymet*	
low_prec_timing	season during which most dry days (<1 mm/day) occur	season	N15 - Daymet*	

camels_hydro - Hydrological signatures - *: Period 1989/10/01 to 2009/09/30				
Attribute	***Description***	***Unit***	***Data source***	***References***
q_mean	mean daily discharge	mm/day	N15 - USGS data*	
runoff_ratio	runoff ratio (ratio of mean daily discharge to mean daily precipitation)	-	N15 - USGS data*	Eq. 2 in Sawicz et al. (2011)
stream_elas	streamflow precipitation elasticity (sensitivity of streamflow to changes in precipitation at the annual time scale)	-	N15 - USGS data*	Eq. 7 in Sankarasubramanian et al. (2001), the last element being P/Q not Q/P
slope_fdc	slope of the flow duration curve (between the log-transformed 33rd and 66th streamflow percentiles)		N15 - USGS data*	Eq. 3 in Sawicz et al. (2011)
baseflow_index	baseflow index (ratio of mean daily baseflow to mean daily discharge, hydrograph separation performed using Ladson et al. [2013] digital filter)	-	N15 - USGS data*	Ladson et al. (2013)
hfd_mean	mean half flow date (date on which the cumulative discharge since October 1st reaches half of the annual discharge)	day of year	N15 - USGS data*	Court (1962)
Q5	5% flow quantile (flow flow)	mm/day	N15 - USGS data*	
Q95	95% flow quantile (high flow)	mm/day	N15 - USGS data*	
high_q_freq	frequency of high-flow days (> 9 times the median daily flow)	days/year	N15 - USGS data*	Clausen and Biggs (2000), Table 2 in Westerberg and McMillan (2015)
high_q_dur	average duration of high-flow events (number of consecutive days > 9 times the median daily flow)	days	N15 - USGS data*	Clausen and Biggs (2000), Table 2 in Westerberg and McMillan (2015)
low_q_freq	frequency of low-flow days (< 0.2 times the mean daily flow)	days/year	N15 - USGS data*	Olden and Poff (2003), Table 2 in Westerberg and McMillan (2015)
low_q_dur	average duration of low-flow events (number of consecutive days < 0.2 times the mean daily flow)	days	N15 - USGS data*	Olden and Poff (2003), Table 2 in Westerberg and McMillan (2015)
zero_q_freq	frequency of days with Q = 0 mm/day	%	N15 - USGS data*	

camels_vege - Land cover characteristics - *: Period 2002 to 2014				
Attribute	***Description***	***Unit***	***Data source***	***References***
forest_frac	forest fraction	-	N15 - USGS data	
lai_max	maximum monthly mean of the leaf area index (based on 12 monthly means)	-	MODIS*	
lai_diff	difference between the maximum and mimumum monthly mean of the leaf area index (based on 12 monthly	-	MODIS*	
gvf_max	maximum monthly mean of the green vegetation fraction (based on 12 monthly means)	-	MODIS*	
gvf_diff	difference between the maximum and mimumum monthly mean of the green vegetation fraction (based on 12 monthly means)	-	MODIS*	
dom_land_cover	dominant land cover type (Noah-modified 20-category IGBP-MODIS land cover)	-	MODIS*	
dom_land_cover_frac	fraction of the catchment area associated with the dominant land cover	-	MODIS*	
root_depth_XX	root depth (percentiles XX = 50 and 99% extracted from a root depth distribution based on IGBP land cover)	m	MODIS*	Eq. 2 and Table 2 in Zeng (2001)

camels_soil - Soil characteristics - *: Only covers the top 1.5 m				
Attribute	***Description***	***Unit***	***Data source***	***References***
soil_depth_pelletier	depth to bedrock (maximum 50m)	m	Pelletier et al.	
soil_depth_statgso	soil depth (maximum 1.5m, layers marked as water and bedrock were excluded)	m	Miller and White (1998) - STATSGO*	
soil_porosity	volumetric porosity (saturated volumetric water content estimated using a multiple linear regression based on sand and clay fraction for the layers marked as USDA soil texture class and a default value [0.9] for layers marked as organic material, layers marked as water, bedrock and "other" were excluded)	-	Miller and White (1998) - STATSGO*	Table 4 in Cosby et al. (1984), Lawrence and Slater (2008)
soil_conductivity	saturated hydraulic conductivity (estimated using a multiple linear regression based on sand and clay fraction for the layers marked as USDA soil texture class and a default value [36cm/hr] for layers marked as organic material, layers marked as water, bedrock and "other" were excluded)	cm/hr	Miller and White (1998) - STATSGO*	Table 4 in Cosby et al. (1984), Lawrence and Slater (2008)
max_water_content	maximum water content (combination of porosity and soil_depth_statgso, layers marked as water, bedrock and "other" were excluded)	m	Miller and White (1998) - STATSGO*	
sand_frac	sand fraction (of the soil material smaller than 2 mm, layers marked as oragnic material, water, bedrock and "other" were excluded)	%	Miller and White (1998) - STATSGO*	
silt_frac	silt fraction (of the soil material smaller than 2 mm, layers marked as oragnic material, water, bedrock and "other" were excluded)	%	Miller and White (1998) - STATSGO*	
clay_frac	clay fraction (of the soil material smaller than 2 mm, layers marked as oragnic material, water, bedrock and "other" were excluded)	%	Miller and White (1998) - STATSGO*	
water_frac	fraction of the top 1.5m marked as water (class 14)	%	Miller and White (1998) - STATSGO*	
organic_frac	fraction of soil_depth_statsgo marked as organic material (class 13)	%	Miller and White (1998) - STATSGO*	
other_frac	fraction of soil_depth_statsgo marked as other (class 16)	%	Miller and White (1998) - STATSGO*	

camels_geol - Geological characteristics				
Attribute	***Description***	***Unit***	***Data source***	***References***
geol_class_1st	most common geologic class in the catchment	-	GLiM	Hartmann and Moosdorf (2012)
geol_class_1st_frac	fraction of the catchment area associated with its most common geologic class	-	GLiM	Hartmann and Moosdorf (2012)
geol_class_2nd	2nd most common geologic class in the catchment	-	GLiM	Hartmann and Moosdorf (2012)
geol_class_2nd_frac	fraction of the catchment area associated with its 2nd most common geologic class	-	GLiM	Hartmann and Moosdorf (2012)
carb_rocks_frac	fraction of the catchment area characterized as "Carbonate sedimentary rocks"	-	GLiM	Hartmann and Moosdorf (2012)
geol_porosity	subsurface porosity	-	GLHYMPS	Gleeson et al. (2014)
geol_permeability	subsurface permeability (log10)	m^2	GLHYMPS	Gleeson et al. (2014)