

Model	Type	Parameters	References
Noah, versions 2.7.1 and greater	LSM	MODIS-IGBP land cover, soil texture, monthly climatological greenness fraction and albedo, max. snow albedo, bottom soil profile temperature, slope type.	Chen et al. (1996)
Noah-MP, version 3.6.1	LSM	Same as used in Noah LSM versions.	Niu et al. (2011)
Catchment	LSM	Mosaic-based land cover classes, soil parameters (porosity, saturated hydraulic conductivity, Clapp–Hornberger PSI and B parameters), bedrock depth, wetness/shape/baseflow/water transfer/minimum theta/topographic tau parameters, diffuse and direct NIR/VIS albedo-scale factors, monthly climatological greenness fraction and leaf area index (LAI).	Koster et al. (2000)
Mosaic	LSM	Soil sand/silt/clay fractions, soil porosity and color, monthly SAI and LAI maps.	Koster and Saurez (1996)
Simple Biosphere, version 2 (SiB-2)	LSM	UMD-based land cover, vegetation canopy parameters, rooting depth, leaf characteristics (e.g., photosynthesis, stomatal conductance), soil respiration, etc.	Sellers et al. (1996)
SAC-HTET, Snow-17	LSM	SAC: soil parameters (e.g., max. water storage, free water depletion rate), potential evapotranspiration (PET) monthly maps, greenness vegetation fraction, snow albedo.	Koren et al. (2010)
Rapid Update Cycle (RUC) LSM v3.7	LSM	Same parameters as Noah LSM but also LAI monthly climatology.	Smirnova et al. (2016)
Variable Infiltration Capacity (VIC) v4.x	LSM	UMD land cover and land mask	Liang et al. (1994)
GeoWRSI, v2	LSM	Start-of-season climatology, end-of-season climatology, length of growing period, and soil water content.	Verdin and Klaver (2002)
Community Atmosphere Biosphere Land Exchange (CABLE) model	LSM	Soil fractions and texture, porosity, land cover classification map	Kowalczyk et al. (2013)
Joint UK Land Environment Simulator (JULES), v4.3	LSM	UM/JULES 10 km plant functional type (PFT) map, soil hydrology parameters (e.g., porosity, wilting point, saturated water conductivity, thermal capacity, thermal conductivity, and ground albedo).	Best et al. (2011)
Hydrological Modeling and Analysis Platform (HyMAP) v1, v2	Routing	X,Y flow direction components, flood height, baseflow, basin domains and mask, runoff delay terms, grid elevation, river dimensions (e.g., height, length, etc.).	Getirana et al. (2012, 2017)
Freshwater Lake (FLake) model	Lake	Interior water and lake depth, water-body quality-control information, lake wind fetch, lake sediment inputs.	Kirillin et al. (2011)