Parameter	Parameter description	Land Component	Parameter Category	Minimum Value	Default Value	Maximum Value	Unit	Range source	Reference
d_max	Parameter specifying the length scale of max dry surface layer thickness	Soil	Soil hydrology	10	15	60	mm	Literature review	Swenson and Lawrence (2014), van de Griend and Owe (1994), Goss and Madliger (2007), Smits et al. (2012)
frac_sat_soil_dsl_init	Fraction of saturated soil for moisture value at which dry surface layer initiates			0.5	0.8	1	unitless	Literature review	Swenson and Lawrence (2014)
fff	Decay factor for fractional saturated area			0.02	0.5	5	m^{-1}	Literature review	Niu et al. (2005), Hou et al. (2012), Fan and Miguez-Macho (2011), Fan et al. (2013)
sand_pf	Perturbation factor (via addition) for percent sand			-20	0	20	percent	Percentage perturbation	
z0mr	Ratio of momentum roughness length to canopy top height	Boundary layer	Boundary layer / Roughness length	0.033 to 0.072[a]	0.055 to 0.120[a]	0.077 to 0.168[a]	unitless	Literature review	Zeng and Wang (2007), Raupach (1994), Shaw and Pereira (1982)
zsno	Momentum roughness length for snow			0.00001	0.0024	0.07	m	Literature review	Chamberlain (1983), Manes et al. (2008), Gromke et al. (2011)
zetamaxstable	Max value zeta ("height" used in Monin-Obukhov theory) can go to under stable conditions.*			0.1	0.5	10	unitless	Expert judgment	
upplim_destruct_metamorph	Upper limit for snow densification through destructive metamorphism		Snow	100	175	250	kg/m^3	Literature review	van Kampenhout et al. (2017)
jmaxb0	Tthe baseline proportion of nitrogen allocated for electron transport	Vegetation	Photosynthesis	0.01	0.0311	0.05	J	Expert judgment	
jmaxb1	Determines the response of electron transport rate to light availability			0.05	0.17	0.25	unitless	Expert judgment	
tpu25ratio	Triose phosphate utilization at 25C (ratio of tpu25/vcmax25)			0.0835	0.167	0.501	unitless	Percentage perturbation	Lombardozzi et al., GRL (2018)
lmrha	Activation energy for leaf maintenance respiration (used in temperature acclimation of leaf maintenance respiration)		Temperature acclimation	-50%	46390	+50%	J/mol	Percentage perturbation	Bernacchi et al. (2001)
medlynslope	Medlyn slope of conductance-photosynthesis relationship		Stomatal conductance and plant water use	0.65 to 3.89[a]	1.62 to 5.79[a]	3.93 to 9.11[a]	µmol H_2O/ µmol CO_2	Literature review	Lin et al. (2015)
medlynintercept	Medlyn intercept of conductance-photosynthesis relationship			1	100	200000	µmol H_2O/(m^2/s)	Literature review	Duursma et al. (2018)
kmax	Plant segment maximum conductance			2.3e-10 to 1.5e-8[a]	1.3e-9 to 4.0e-8[a]	1.9e-9 to 2.3e-7[a]	mm H_2O (transpired)/ mm H_2O (water potential gradient)/sec	Literature review	Bonan et al. (2014), Chuang et al. (2006), Sperry et al. (1998), Sperry and Love (2015), Williams et al (1996), Kennedy et al. (2019)
rhosnir	Near-infrared stem reflectance		Plant optical properties	0.29 to 0.42[a]	0.36 to 0.53[a]	0.43 to 0.64[a]	unitless	Percentage perturbation	Majasalmi and Bright (2019)
maximum_leaf_wetted_fraction	Maximum fraction of leaf that may be wet prior to drip occuringoccurring		Canopy evaporation	0.01	0.05	0.5	unitless	Expert judgment	
nstem	Stem number; number of individuals per meter squared (similar to stocking number). Influences canopy height and biomass heat storage.		Canopy height / biomass heat storage	0.03	0.035 to 100[a]	0.5	number/m^2	Expert judgment	