Symbol	Units	Description	Relationship with SEDGES
C_{veg}	$kg\,C\,m^{-2}$	vegetative carbon	O
L	$kg\,C\,m^{-2}\,s^{-1}$	litterfall	O
NPP	$kg\,C\,m^{-2}\,s^{-1}$	net primary productivity	O
GPP	$kg\,C\,m^{-2}\,s^{-1}$	gross primary productivity	O
GPP_L	$kg\,C\,m^{-2}\,s^{-1}$	light-limited gross primary productivity	O
GPP_W	$kg\,C\,m^{-2}\,s^{-1}$	water-limited gross primary productivity	O
$f_1(CO_2)$	–	CO_2 fertilization function	
$f_2(T_{sfc})$	–	temperature limitation function	O
T_{sfc}	K	surface temperature	I
f_{APAR}	–	fraction of photosynthetically active radiation (PAR) that is absorbed by green vegetation	
SW↓	$W\,m^{-2}$	surface downwelling shortwave radiation	I
LAI	m^2 leaf area $(m^2$ ground area$)^{-1}$	leaf area index	O
f_{leaf}	–	vegetative leaf cover fraction	O
g_a	$m\,s^{-1}$	aerodynamic conductance	I
r_a	$s\,m^{-1}$	aerodynamic resistance	
r_c	$s\,m^{-1}$	canopy resistance	O
ρ	$kg\,m^{-3}$	surface air density	I
p_{sfc}	Pa	surface pressure	I
ET	$m^3\,m^{-2}\,s^{-1}$	evapotranspiration	calculated outside of SEDGES
$qsat_{sfc}$	$kg\,H_2O\,kg\,air^{-1}$	surface saturation specific humidity	calculated outside of SEDGES
q	$kg\,H_2O\,kg\,air^{-1}$	specific humidity at the lowest atmospheric level	EI
C_w	–	surface wetness factor	M
β_{ss}	–	soil surface water stress factor	
r_{ss}	$s\,m^{-1}$	soil surface resistance	
W_{frac}	–	soil wetness fraction	
W_{soil}	m	soil water content	I
W_{max}	m	soil bucket depth	M
T	$m^3\,m^{-2}\,s^{-1}$	transpiration	O
$r^*_{c_u}$	$s\,m^{-1}$	case-specific unconstrained canopy resistance	
r_{c_u}	$s\,m^{-1}$	unconstrained canopy resistance	
β_{tr}	–	water stress factor for transpiration	
$r_c min$	$s\,m^{-1}$	minimum canopy resistance	O
C_{soil}	$kg\,C\,m^{-2}$	soil organic carbon	O
R_{soil}	$kg\,C\,m^{-2}\,s^{-1}$	soil respiration rate	O
T_{soil}	K	soil temperature at 0.20 m depth	I
LAI_m	m^2 leaf area $(m^2$ ground area$)^{-1}$	leaf area index without soil moisture stress	
f_{leaf_m}	–	(green) leaf cover fraction in the absence of soil moisture stress	
$f_{leaf_{dry}}$	–	max. vegetative leaf cover fraction under soil moisture stress	
f_{for}	–	forest cover fraction	O
α_0	–	snow-free surface albedo	
α_{soil}	–	albedo of bare soil	
α	–	albedo	M
$\alpha_{snow\,flat}$	–	snow-covered albedo of flat portion of grid cell	
$\alpha_{snow\,for}$	–	snow-covered albedo of forested portion of the grid cell	
$f_{snow\,flat}$	–	fraction of "flat" portion of grid cell that is snow-covered	
swe	$m^3\,m^{-2}$	snow depth in liquid water equivalent	I
$\alpha_{deep\,snow,flat}$	–	albedo of deep and pure snow	
z_0	m	surface roughness	M
z_{0oro}	m	surface roughness due to orography	I
z_{0veg}	m	surface roughness due to vegetation	
P	$m^3\,m^{-2}\,s^{-1}$	precipitation in liquid water equivalent	EI
S	$m^3\,m^{-2}\,s^{-1}$	snowfall in liquid water equivalent	EI
M	$m^3\,m^{-2}\,s^{-1}$	snowmelt in liquid water equivalent	EI
ET_{soil}	$m^3\,m^{-2}\,s^{-1}$	bare-soil evaporation plus transpiration	see Sect. 4
E_{soil}	$m^3\,m^{-2}\,s^{-1}$	bare-soil evaporation	O (when snow present)
PET	$m^3\,m^{-2}\,s^{-1}$	potential evapotranspiration	I