

Priority	long name	units	comment	output variable name	CMOR dimensions	missing val	frequency
FIRST PRIORITY							
Physical variables							
1	Total Soil Moisture Content	kg m ⁻²	Compute the mass per unit area (summed over all soil layers) of water in all phases.	mrso	longitude latitude time	-.99999	monthly
1	Total Runoff	kg m ⁻² s ⁻¹	compute the total runoff (including "drainage" through the base of the soil model) leaving the land portion of the grid cell.	mrro	longitude latitude time	-.99999	daily/monthly
1	Total Evapo-Transpiration	kg m ⁻² s ⁻¹		evapotrans	longitude latitude time	-.99999	daily/monthly
1	Sensible heat flux	W m ⁻²		sh	longitude latitude time	-.99999	daily/monthly
1	Surface temperature	K		Ts	longitude latitude time	-.99999	daily/monthly
Land Carbon variables							
Pools							
1	Carbon in Vegetation	kg C m ⁻²		cVeg	longitude latitude time	-.99999	annual
1	Carbon in Above-ground Litter Pool	kg C m ⁻²		cLitter	longitude latitude time	-.99999	annual
1	Carbon in Soil (including below-ground litter)	kg C m ⁻²		cSoil	longitude latitude time	-.99999	annual
Fluxes							
1	Gross Primary Production	kg C m ⁻² s ⁻¹		gpp	longitude latitude time	-.99999	monthly
1	Autotrophic (Plant) Respiration	kg C m ⁻² s ⁻¹		ra	longitude latitude time	-.99999	monthly
1	Net Primary Production	kg C m ⁻² s ⁻¹	needed for models that do not compute GPP (if any)	npp	longitude latitude time	-.99999	monthly
1	Heterotrophic Respiration	kg C m ⁻² s ⁻¹		rh	longitude latitude time	-.99999	monthly
1	CO2 Emission from Fire	kg C m ⁻² s ⁻¹	CO2 emissions from natural fires + human ignition fires as calculated by the fire module of the DGVM, but excluding any CO2 flux from fire reported under variable "CO2 Flux to Atmosphere from Land Use Change"	fFire	longitude latitude time	-.99999	monthly
1	CO2 Flux to Atmosphere from Land Use Change	kg C m ⁻² s ⁻¹	human changes to land accounting possibly for different time-scales related to fate of the wood, for example.	fLuc	longitude latitude time	-.99999	monthly
1	Net Biospheric Production	kg C m ⁻² s ⁻¹	This is the net flux between land and atmosphere defined as photosynthesis MINUS the sum of plant and soil respiration, carbonfluxes from fire, harvest, grazing, land use change and any other C flux in/out of the ecosystem (eg DIC, DOC, VOCs,...). Positive flux is into the land. NBP SHOULD be equal to changes in total carbon reservoirs	nbp	longitude latitude time	-.99999	monthly
Structure							
1	Fractional Land Cover of PFT		using each individual ESM PFT definition. This includes natural PFTs, anthropogenic PFTs, bare soil, lakes, urban areas, etc. Sum of all should equal the fraction of the grid-cell that is land. Note that for degraded resolution simulation, ocean fraction of grid cell may not be zero.	landCoverFrac	longitude latitude vegtype time	-.99999	annual (if dyanamic veg) or once (if static veg)
1	Leaf Area Index		projected leaf area per PFT	lai	longitude latitude time	-.99999	monthly

SECOND PRIORITY							
Physical variables							
2	Temperature of Soil	K	Temperature of each soil layer.	tsl	longitude latitude stlayer time	-99999	monthly
2	Moisture of Soil	kg m ⁻²	Compute the mass of water in all phases in each soil layer	msl	longitude latitude smlayer time	-99999	monthly
2	Evaporation from Canopy	kg m ⁻² s ⁻¹	Report the canopy evaporation+sublimation (if present in model).	evspsblveg	longitude latitude time	-99999	monthly
2	Water Evaporation from Soil	kg m ⁻² s ⁻¹	includes sublimation.	evspsblsoi	longitude latitude time	-99999	monthly
2	Transpiration	kg m ⁻² s ⁻¹		tran	longitude latitude time	-99999	monthly
2	Shortwave up radiation	W m ⁻²		swup	longitude latitude time	-99999	monthly
2	Longwave up radiation	W m ⁻²		lwup	longitude latitude time	-99999	monthly
2	Ground heat flux	W m ⁻²		ghflx	longitude latitude time	-99999	monthly
2	Snow Depth	m					monthly
2	Snow Water Equivalent	kg m ⁻²					monthly
Land Carbon & Biogeochemistry							
2	CO2 Flux to Atmosphere from Grazing	kg C m ⁻² s ⁻¹		fGrazing	longitude latitude time	-99999	monthly
2	CO2 Flux to Atmosphere from Crop Harvesting	kg C m ⁻² s ⁻¹		fHarvest	longitude latitude time	-99999	monthly
2	Total Carbon Flux from Vegetation to Litter	kg C m ⁻² s ⁻¹		fVegLitter	longitude latitude time	-99999	monthly
2	Total Carbon Flux from Litter to Soil	kg C m ⁻² s ⁻¹		fLitterSoil	longitude latitude time	-99999	monthly
2	Total Carbon Flux from Vegetation Directly to Soil	kg C m ⁻² s ⁻¹	In some models part of carbon (e.g., root exudate) can go directly into the soil pool without entering litter.	fVegSoil	longitude latitude time	-99999	monthly
2	Carbon in Leaves	kg C m ⁻²		cLeaf	longitude latitude time	-99999	annual
2	Carbon in Wood	kg C m ⁻²	including sapwood and hardwood.	cWood	longitude latitude time	-99999	annual
2	Carbon in Roots	kg C m ⁻²	including fine and coarse roots.	cRoot	longitude latitude time	-99999	annual
2	Carbon in Coarse Woody Debris	kg C m ⁻²		cCwd	longitude latitude time	-99999	annual
2	Burnt Area Fraction	%	fraction of entire grid cell that is covered by burnt vegetation.	burntArea	longitude latitude time	-99999	annual
2	Carbon in Products of Land Use Change	kg C m ⁻²		cProduct	longitude latitude time	-99999	annual
1	Leaf Area Index Daily		projected leaf area per PFT	dlai	longitude latitude time	-99999	daily