CMIP6 Model Documentation

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Note: * indicates a required property

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	6.1 Car 7.1 7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10	Energy Balance	 				 											22 22 23 23 23 24 24 25 25
7	6.1 Car 7.1 7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10	Energy Balance	 	 		 	 											222 222 233 233 244 244 255 262 27
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1 Key Properties

Land surface key properties

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1.1	K 037	Dno	nortion
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Land surface key properties

1.1.1 Name *

Name of land model code

Enter TEXT:

1.1.2 Keywords *

Keywords associated with land model code

Enter COMMA SEPERATED list:

1.1.3 Overview *

Overview of land model.

Enter TEXT:

1.1.4 Description *

 $General\ description\ of\ the\ processes\ modelled\ (e.g.\ dymanic\ vegation,\ prognostic\ albedo,\ etc.)$

Enter TEXT:

1.1.5 Land Atmosphere Flux Exchanges

 $Fluxes\ exchanged\ with\ the\ atmosphere.$

Select MULTIPLE	options:
-----------------	----------

Water
Energy
Carbon
Nitrogen
Phospherous
Other - please specify:

1.1.6 Atmospheric Coupling Treatment *

Describe the treatment of land surface coupling with the Atmosphere model component, which may be different for different quantities (e.g. dust: semi-implicit, water vapour: explicit)

Types of	land cover defined in the land surface model
Sele	et MULTIPLE options:
	Bare soil
	Urban
	Lake
	Land ice
	Lake ice
	Vegetated
	Other - please specify:
1.1.8	Land Cover Change
	how land cover change is managed (e.g. the use of net or gross transitions)
Ente	r TEXT:
1.1.9	Tiling *
	
	the general tiling procedure used in the land surface (if any). Include treatment of physiography, $(dynamic)$ vegetation coverage and orography/roughness
and/sea,	
and/sea,	(dynamic) vegetation coverage and orography/roughness
and/sea,	(dynamic) vegetation coverage and orography/roughness r TEXT:
Ente 1.2 TODO	(dynamic) vegetation coverage and orography/roughness r TEXT: Conservation Properties
Ente 1.2 (TODO 1.2.1	(dynamic) vegetation coverage and orography/roughness r TEXT: Conservation Properties Overview
Ente 1.2 (TODO) 1.2.1 Overvieu	(dynamic) vegetation coverage and orography/roughness r TEXT: Conservation Properties
Ente 1.2 (TODO) 1.2.1 Overvieu	(dynamic) vegetation coverage and orography/roughness TEXT: Conservation Properties Overview of todo in land model. TEXT:
Ente 1.2 (TODO 1.2.1 Overvieu Ente	(dynamic) vegetation coverage and orography/roughness r TEXT: Conservation Properties Overview of todo in land model.
Ente 1.2 (TODO 1.2.1 Evervieu Ente 1.2.2 Describe	(dynamic) vegetation coverage and orography/roughness r TEXT: Conservation Properties Overview of todo in land model. r TEXT: Energy
Ente 1.2 (TODO 1.2.1 Divervieu Ente 2.2.2 Describe	(dynamic) vegetation coverage and orography/roughness IT TEXT: Conservation Properties Overview of todo in land model. IT TEXT: Energy if/how energy is conserved globally and to what level (e.g. within X [units]/year)
Ente 1.2 (TODO 1.2.1 Overvieu Ente 1.2.2 Describe Ente 1.2.3	(dynamic) vegetation coverage and orography/roughness r TEXT: Conservation Properties Overview of todo in land model. r TEXT: Energy if/how energy is conserved globally and to what level (e.g. within X [units]/year) r TEXT:
Ente 1.2 (TODO 1.2.1 Divervieu Ente 1.2.2 Describe Ente 1.2.3 Describe	(dynamic) vegetation coverage and orography/roughness IT TEXT: Conservation Properties Overview of todo in land model. IT TEXT: Energy if/how energy is conserved globally and to what level (e.g. within X [units]/year) IT TEXT: Water
Ente 1.2 (TODO 1.2.1 Divervieu Ente 1.2.2 Describe Ente 1.2.3 Describe	(dynamic) vegetation coverage and orography/roughness IT TEXT: Conservation Properties Overview of todo in land model. IT TEXT: Energy if/how energy is conserved globally and to what level (e.g. within X [units]/year) IT TEXT: Water if/how water is conserved globally and to what level (e.g. within X [units]/year)
Ente 1.2.1 Coverview Ente 1.2.2 Coescribe Ente 1.2.3 Coescribe Ente 1.2.4	(dynamic) vegetation coverage and orography/roughness r TEXT: Conservation Properties Overview of todo in land model. r TEXT: Energy if/how energy is conserved globally and to what level (e.g. within X [units]/year) r TEXT: Water if/how water is conserved globally and to what level (e.g. within X [units]/year) r TEXT:

Timestepping Framework 1.3 TODO1.3.1 Overview Overview of todo in land model. Enter TEXT: 1.3.2 Timestep Dependent On Atmosphere * Is a time step dependent on the frequency of atmosphere coupling? Select either TRUE or FALSE: ☐ False True 1.3.3 Time Step * Overall timestep of land surface model (i.e. time between calls) Enter INTEGER value: Timestepping Method * General description of time stepping method and associated time step(s)Enter TEXT: **Software Properties** Software properties of land surface code 1.4.1 Overview Overview of software properties of land surface code in land model. Enter TEXT: 1.4.2 Repository Location of code for this component. Enter TEXT: 1.4.3 Code Version

 $Code\ version\ identifier.$

Enter TEXT:

1.4.4 Code Languages

 $Code\ language(s).$

Enter COMMA SEPERATED list:

2 Grid

Land surface grid

2.1 Grid

Land surface grid

2.1.1 Name

Name of grid in land model.

Enter TEXT:

2.1.2 Overview

Overview of grid in land model.

Enter TEXT:

2.2 Horizontal

The horizontal grid in the land surface

2.2.1 Overview

Overview of the horizontal grid in the land surface in land model.

Enter TEXT:

2.2.2 Description *

 $Describe\ the\ general\ structure\ of\ the\ horizontal\ grid\ (not\ including\ any\ tiling)$

Enter TEXT:

2.2.3 Matches Atmosphere Grid *

 $Does\ the\ horizontal\ grid\ match\ the\ atmosphere?$

Select either TRUE or FALSE:

______ True _____ False

2.3	Vertical

The vertical grid in the soil

2.3.1 Overview

 $Overview\ of\ the\ vertical\ grid\ in\ the\ soil\ in\ land\ model.$

2.3.2 Description *

Describe the general structure of the vertical grid in the soil (not including any tiling)

Enter TEXT:

2.3.3 Total Depth *

The total depth of the soil (in metres)

Enter INTEGER value:

3 Soil

Land surface soil

3.1 Soil

 $Land\ surface\ soil$

3.1.1 Name

Commonly used name for the soil in land model.

Enter TEXT:

3.1.2 Overview

Overview of land surface soil in land model.

Enter TEXT:

3.1.3 Heat Water Coupling *

Describe the coupling between heat and water in the soil

Enter TEXT:

3.1.4 Number Of Soil layers *

The number of soil layers

Enter INTEGER value:

3.1.5 Prognostic Variables *

List the prognostic variables of the soil scheme

Enter COMMA SEPERATED list:

3.2 Soil Map

Key properties of the land surface soil map

3.2.1 Overview

Overview of key properties of the land surface soil map in land model.

Enter TEXT:

3.2.2 Description *

 $General\ description\ of\ soil\ map$

3.2.3 Structure $Describe\ the\ soil\ structure\ map$ Enter TEXT: 3.2.4 Texture Describe the soil texture map Enter TEXT: 3.2.5 Organic Matter Describe the soil organic matter map Enter TEXT: 3.2.6 Albedo Describe the soil albedo map Enter TEXT: 3.2.7 Water Table Describe the soil water table map, if any Enter TEXT: 3.2.8 Continuously Varying Soil Depth * $Does\ the\ soil\ properties\ vary\ continuously\ with\ depth?$ Select either TRUE or FALSE: True ☐ False 3.2.9 Soil Depth Describe the soil depth map Enter TEXT: 3.3 Snow Free Albedo

3.3.1 Overview

TODO

Overview of todo in land model.

3.3.2	Prognostic *
Is snow	free albedo prognostic?
Sele	ct either TRUE or FALSE:
	True
3.3.3	Functions
If progno	estic, describe the dependancies on snow free albedo calculations
Sele	ct MULTIPLE options:
	Vegetation type
	Soil humidity
	Vegetation state
	Other - please specify:
3.3.4	Direct Diffuse
If progno	estic, describe the distinction between direct and diffuse albedo
Sele	ct SINGLE option:
	Distinction between direct and diffuse albedo
	No distinction between direct and diffuse albedo
	Other - please specify:
3.3.5	Number Of Wavelength Bands
If progno	estic, enter the number of wavelength bands used
Ente	er INTEGER value:
	Hydrology operties of the land surface soil hydrology
3.4.1	Overview
Overvieu	of key properties of the land surface soil hydrology in land model.
Ente	er TEXT:
3.4.2	Description *
General	description of the soil hydrological model

Enter	INTEGER value:
3.4.4	Filing
Describe th	he soil hydrology tiling, if any.
Enter	TEXT:
3.4.5 V	Vertical Discretisation $*$
Describe th	he typical vertical discretisation
Enter	TEXT:
3.4.6 N	Number Of Ground Water Layers *
The number	er of soil layers that may contain water
Enter	INTEGER value:
3.4.7 I	ateral Connectivity *
Describe th	he lateral connectivity between tiles
Select	MULTIPLE options:
	Perfect connectivity - Common soil for multiple tiles
	Darcian flow - Darcian flow among hillslope tiles
	Other - please specify:
3.4.8 N	Method *
The hydrol	logical dynamics scheme in the land surface model
Select	SINGLE option:
	Bucket
	Force-restore
	Choisnel
	Explicit diffusion
	Other - please specify:
3.5 F	reezing
TODO	iccznig

3.4.3 Time Step *

 $Time\ step\ of\ river\ soil\ hydrology\ in\ seconds$

3.5.1 Number Of Ground Ice Layers *

 $How\ many\ soil\ layers\ may\ contain\ ground\ ice$

Enter INTEGER value:

3.5.2 Ice Storage Method *

 $Describe\ the\ method\ of\ ice\ storage$

Enter TEXT:

3.5.3 Permafrost *

 $Describe\ the\ treatment\ of\ permafrost,\ if\ any,\ within\ the\ land\ surface\ scheme$

Enter TEXT:

3.6 Drainage

TODO

3.6.1 Description *

General describe how drainage is included in the land surface scheme

Enter TEXT:

3.6.2 Types

 ${\it Different\ types\ of\ runoff\ represented\ by\ the\ land\ surface\ model}$

Select MULTIPLE options:

Gravity drainage
Horton mechanism
Topmodel-based
Dunne mechanism
Lateral subsurface flow
Baseflow from groundwate

Other - please specify:

3.7 Heat Treatment

TODO

3.7.1 Overview

Overview of todo in land model.

3.7.2	Description *
General	description of how heat treatment properties are defined
Ente	er TEXT:
3.7.3	Time Step *
Time ste	p of soil heat scheme in seconds
Ente	er INTEGER value:
3.7.4	Tiling
Describe	the soil heat treatment tiling, if any.
Ente	er TEXT:
3.7.5	Vertical Discretisation *
	the typical vertical discretisation
Ente	er TEXT:
0.7.0	TI . G. *
3.7.6	Heat Storage *
Specify t	he method of heat storage
Specify t	_
Specify t	he method of heat storage
Specify t	he method of heat storage ct SINGLE option:
Specify t	he method of heat storage ct SINGLE option: Force-restore
Specify t	he method of heat storage ct SINGLE option: Force-restore Explicit diffusion
Specify t	he method of heat storage ct SINGLE option: Force-restore Explicit diffusion
Specify t Sele	he method of heat storage ct SINGLE option: Force-restore Explicit diffusion Other - please specify:
Specify t Sele 3.7.7 Describe	tet SINGLE option: Force-restore Explicit diffusion Other - please specify: Processes *
Specify t Sele 3.7.7 Describe	tet SINGLE option: Force-restore Explicit diffusion Other - please specify: Processes * processes included in the treatment of soil heat
Specify t Sele 3.7.7 Describe	tet SINGLE option: Force-restore Explicit diffusion Other - please specify: Processes * processes included in the treatment of soil heat et MULTIPLE options:

4 Snow
Land surface snow
4.1 Snow
Land surface snow
4.1.1 Name
Commonly used name for the snow in land model.
Enter TEXT:
4.1.2 Overview
Overview of land surface snow in land model.
Enter TEXT:
4.1.3 Tiling
Describe the snow tiling, if any.
Enter TEXT:
4.1.4 Number Of Snow Layers *
The number of snow levels used in the land surface scheme/mode
Enter INTEGER value:
4.1.5 Density *
Description of the treatment of snow density
Select SINGLE option:
Prognostic
Constant
Other - please specify:
4.1.6 Water Equivalent *
Description of the treatment of the snow water equivalent
Select SINGLE option:
Prognostic
Diagnostic
Other - please specify:

4.1.7	Heat Content *
Descript	$ion\ of\ the\ treatment\ of\ the\ heat\ content\ of\ snow$
Sele	ct SINGLE option:
	Prognostic
	Diagnostic
	Other - please specify:
4.1.8	Temperature *
Descript	ion of the treatment of snow temperature
Sele	ct SINGLE option:
	Prognostic
	Diagnostic
	Other - please specify:
$m{4.1.9}$	Liquid Water Content * ion of the treatment of snow liquid water
Sele	ct SINGLE option:
	Prognostic
	Diagnostic
	Other - please specify:
4.1.10	Snow Cover Fractions *
Specify of	cover fractions used in the surface snow scheme
Sele	ct MULTIPLE options:
	Ground snow fraction
	Vegetation snow fraction
	Other - please specify:
4.1.11	Processes *
Snow rel	lated processes in the land surface scheme
Sele	ct MULTIPLE options:
	Snow interception
	Snow melting

	Snow freezing
	Blowing snow
	Other - please specify:
	Prognostic Variables *
	prognostic variables of the snow scheme
Ente	r COMMA SEPERATED list:
4.2	Snow Albedo
TODO	
191	Overview
	of todo in land model.
	r TEXT:
4.2.2	Type † the treatment of snow-covered land albedo
Selec	et SINGLE option:
	Prognostic
	Prescribed
	Constant
	Other - please specify:
	Functions
If progno	stic,
Selec	t MULTIPLE options:
	Vegetation type
	Snow age
	Snow density
	Snow grain type
	Aerosol deposition
	Other - please specify:

5 Vegetation

T 1	ľ	, , ,
Land	countaco	modetation
IJGUUU	Surruce	vegetation
	J	

5.1 Vegetat	ion
-------------	-----

 $Land\ surface\ vegetation$

5.1.1 Name

 $Commonly\ used\ name\ for\ the\ vegetation\ in\ land\ model.$

Enter TEXT:

5.1.2 Overview

Overview of land surface vegetation in land model.

Enter TEXT:

5.1.3 Time Step *

Time step of vegetation scheme in seconds

Enter INTEGER value:

5.1.4 Dynamic Vegetation *

 $Is\ there\ dynamic\ evolution\ of\ vegetation?$

Select either TRUE or FALSE: $\begin{tabular}{lll} \hline & True & \begin{tabular}{lll} \hline & False \\ \hline \end{tabular}$

5.1.5 Tiling

 $Describe\ the\ vegetation\ tiling,\ if\ any.$

Enter TEXT:

5.1.6 Vegetation Representation *

 $Vegetation\ classification\ used$

Select SINGLE option:

Vegetation types

Biome types

Other - please specify:

5.1.7 Vegetation Types List of vegetation types in the classification, if any Select MULTIPLE options: Broadleaf tree Needleleaf tree C3 grass C4 grassVegetated Other - please specify: 5.1.8 Biome Types List of biome types in the classification, if any Select MULTIPLE options: Evergreen needleleaf forest Evergreen broadleaf forest Deciduous needleleaf forest Deciduous broadleaf forest Mixed forest Woodland Wooded grassland Closed shrubland Opne shrubland Grassland Cropland Wetlands Other - please specify: Vegetation Time Variation * 5.1.9How the vegetation fractions in each tile are varying with time Select SINGLE option: Fixed (not varying)

Prescribed (varying from files)

	Dynamical (varying from simulation)
	Other - please specify:
5.1.10	Vegetation Map
If vegetati erence, if	on fractions are not dynamically updated , describe the vegetation map used (common name and ref- possible)
Enter	TEXT:
5.1.11	Interception *
Is vegetate	ion interception of rainwater represented?
Selec	t either TRUE or FALSE:
	True
5.1.12	Phenology *
Treatment	t of vegetation phenology
Selec	t SINGLE option:
	Prognostic
	Diagnostic (vegetation map)
	Other - please specify:
5.1.13	Phenology Description
$General\ d$	escription of the treatment of vegetation phenology
Enter	TEXT:
5.1.14	Leaf Area Index *
Treatment	t of vegetation leaf area index
Selec	t SINGLE option:
	Prescribed
	Prognostic
	Diagnostic
	Other - please specify:
5.1.15	Leaf Area Index Description
General d	escription of the treatment of leaf area index
Enter	TEXT:

5.1.16	Biomass *
Treatment	of vegetation biomass
Select	t SINGLE option:
	Prognostic
	Diagnostic
	Other - please specify:
5.1.17	Biomass Description
General d	escription of the treatment of vegetation biomass
Enter	TEXT:
5.1.18	Biogeography *
Treatment	of vegetation biogeography
Select	t SINGLE option:
	Prognostic
	Diagnostic
	Other - please specify:
5.1.19	Biogeography Description
General d	escription of the treatment of vegetation biogeography
Enter	TEXT:
5.1.20	Stomatal Resistance *
Specify wh	at the vegetation stomatal resistance depends on
Select	t MULTIPLE options:
	Light
	Temperature
	Water availability
	CO2
	O3
	Other - please specify:
5.1.21	Stomatal Resistance Description
General d	escription of the treatment of vegetation stomatal resistance
Enter	TEXT:

5.1.22 Prognostic Variables *

 $List\ the\ prognostic\ variables\ of\ the\ vegetation\ scheme$

Enter COMMA SEPERATED list:

6 Energy Balance

Land surface energy balance

6.1 Energy Balance

Land surface energy balance

6.1.1 Name

 $Commonly\ used\ name\ for\ the\ energy\ balance\ in\ land\ model.$

Enter TEXT:

6.1.2 Overview

Overview of land surface energy balance in land model.

Enter TEXT:

6.1.3 Tiling

Describe the energy balance tiling, if any.

Enter TEXT:

6.1.4 Number Of Surface Temperatures *

The maximum number of distinct surface temperatures in a grid cell (for example, each subgrid tile may have its own temperature)

Enter INTEGER value:

6.1.5 Evaporation *

Specify the formulation method for land surface evaporation, from soil and vegetation

Selec	et MULTIPLE options:
	Alpha
	Beta
	Combined
	Monteith potential evaporation
	Other - please specify:
	Processes * which processes are included in the energy balance scheme
Selec	et MULTIPLE options:
	Transpiration

Other - please specify:

7 Carbon Cycle

Land surface carbon cycle

7.1 Carbon Cycle

Land surface carbon cycle

7.1.1 Name

Commonly used name for the carbon cycle in land model.

Enter TEXT:

7.1.2 Overview

Overview of land surface carbon cycle in land model.

Enter TEXT:

7.1.3 Tiling

Describe the carbon cycle tiling, if any.

Enter TEXT:

7.1.4 Time Step *

Time step of carbon cycle in seconds

Enter INTEGER value:

7.1.5 Anthropogenic Carbon

Describe the treament of the anthropogenic carbon pool

Select MULTIPLE options: Grand slam protocol

Residence time

Decay time

Other - please specify:

7.1.6 Prognostic Variables *

 $List\ the\ prognostic\ variables\ of\ the\ carbon\ scheme$

Enter COMMA SEPERATED list:

7.2 Vegetation

TODO

7.2.1 Overview

Overview of todo in land model.

Enter TEXT:

7.2.2 Number Of Carbon Pools *

Enter the number of carbon pools used

Enter INTEGER value:

7.2.3 Carbon Pools

List the carbon pools used

Enter COMMA SEPERATED list:

7.2.4 Forest Stand Dynamics

Describe the treatment of forest stand dyanmics

Enter TEXT:

7.3 Photosynthesis

TODO

7.3.1 Method

Describe the general method used for photosynthesis (e.g. type of photosynthesis, distinction between C3 and C4 grasses, Nitrogen dependence, etc.)

Enter TEXT:

7.4 Autotrophic Respiration

TODO

7.4.1 Maintainance Respiration

 $Describe\ the\ general\ method\ used\ for\ maintainence\ respiration$

Enter TEXT:

7.4.2 Growth Respiration

Describe the general method used for growth respiration

Enter TEXT:

7.5 Allocation

TODO

7.5.1 Method *
Describe the general principle behind the allocation scheme
Enter TEXT:
7.5.2 Allocation Bins *
Specify distinct carbon bins used in allocation
Select SINGLE option:
\Box Leaves + stems + roots
\Box Leaves + fine roots + coarse roots + stems
☐ Whole plant (no distinction)
Other - please specify:
7.5.3 Allocation Fractions * Describe how the fractions of allocation are calculated Select SINGLE option: Fixed Function of vegetation type Function of plant allometry Explicitly calculated Other - please specify:
7.6 Phenology TODO
7.6.1 Method *
$Describe\ the\ general\ principle\ behind\ the\ phenology\ scheme$
Enter TEXT:
7.7 Mortality TODO

7.7.1 Method *

 $Describe\ the\ general\ principle\ behind\ the\ mortality\ scheme$

7.8 Litter

TODO

7.8.1 Overview

Overview of todo in land model.

Enter TEXT:

7.8.2 Number Of Carbon Pools *

 $Enter\ the\ number\ of\ carbon\ pools\ used$

Enter INTEGER value:

7.8.3 Carbon Pools

List the carbon pools used

Enter COMMA SEPERATED list:

7.8.4 Decomposition

 $List\ the\ decomposition\ methods\ used$

Enter COMMA SEPERATED list:

7.8.5 Method

Describe the general method used

Enter TEXT:

7.9 Soil

TODO

7.9.1 Overview

 $Overview\ of\ todo\ in\ land\ model.$

Enter TEXT:

7.9.2 Number Of Carbon Pools *

Enter the number of carbon pools used

Enter INTEGER value:

7.9.3 Carbon Pools

 $List\ the\ carbon\ pools\ used$

Enter COMMA SEPERATED list:

7.9.4 Decomposition

 $List\ the\ decomposition\ methods\ used$

Enter COMMA SEPERATED list:

7.9.5 Method

 $Describe\ the\ general\ method\ used$

Enter TEXT:

7.10 Permafrost Carbon

TODO

7.10.1 Overview

Overview of todo in land model.

Enter TEXT:

7.10.2 Is Permafrost Included *

Is permafrost included?

Select either TRUE or FALSE:

☐ True ☐ False

7.10.3 Emitted Greenhouse Gases

 $List\ the\ GHGs\ emitted$

Enter COMMA SEPERATED list:

7.10.4 Decomposition

List the decomposition methods used

Enter COMMA SEPERATED list:

7.10.5 Impact On Soil Properties

 $Describe\ the\ impact\ of\ permafrost\ on\ soil\ properties$

8 Nitrogen Cycle

Land surface nitrogen cycle

8.1 Nitrogen Cycle

Land surface nitrogen cycle

8.1.1 Name

Commonly used name for the nitrogen cycle in land model.

Enter TEXT:

8.1.2 Overview

Overview of land surface nitrogen cycle in land model.

Enter TEXT:

8.1.3 Tiling

Describe the notrogen cycle tiling, if any.

Enter TEXT:

8.1.4 Time Step *

Time step of nitrogen cycle in seconds

Enter INTEGER value:

8.1.5 Prognostic Variables *

List the prognostic variables of the nitrogen scheme

Enter COMMA SEPERATED list:

9 River Routing

Land surface river routing

9.1 River Routing

Land surface river routing

9.1.1 Name

Commonly used name for the river routing in land model.

Enter TEXT:

9.1.2 Overview

Overview of land surface river routing in land model.

Enter TEXT:

9.1.3 Tiling

Describe the river routing, if any.

Enter TEXT:

9.1.4 Time Step *

Time step of river routing scheme in seconds

Enter INTEGER value:

9.1.5 Grid Inherited From Land Surface *

Is the grid inherited from land surface?

Select either TRUE or FALSE:

______ True ______ False

9.1.6 Grid Description

General description of grid, if not inherited from land surface

Enter TEXT:

9.1.7 Number Of Reservoirs *

 $Enter\ the\ number\ of\ reservoirs$

Enter INTEGER value:

9.1.8 TODO	Water Re Evaporation *
	ct MULTIPLE options:
	Flood plains
	Irrigation
	Other - please specify:
9.1.9	Coupled To Atmosphere
Is river	routing coupled to the atmosphere model component?
Sele	ct either TRUE or FALSE:
	True
9.1.10	Coupled To Land
	the coupling between land and rivers
Ente	er TEXT:
9.1.11	Quantities Exchanged With Atmosphere
If couple nents?	to atmosphere, which quantities are exchanged between river routing and the atmosphere model compo-
Sele	ct MULTIPLE options:
	Heat
	Water
	Tracers
	Other - please specify:
9.1.12	Basin Flow Direction Map *
What typ	ne of basin flow direction map is being used?
Sele	ct SINGLE option:
	Present day
	Adapted for other periods
	Other - please specify:
9.1.13	Flooding
	the representation of flooding, if any

9.1.14 H	Prognostic Variables *
List the prog	gnostic variables of the river routing
Enter (COMMA SEPERATED list:
9.2 Oc	ceanic Discharge
TODO	
9.2.1 O	verview
Overview of	todo in land model.
Enter 7	TEXT:
9.2.2 D	ischarge Type *
Specify how	rivers are discharged to the ocean
Select	SINGLE option:
	Direct (large rivers)
	Diffuse
	Other - please specify:
9.2.3 Q	uantities Transported *
Quantities t	hat are exchanged from river-routing to the ocean model component
Select	MULTIPLE options:
I	Heat
	Vater
П П	Tracers
	Other - please specify:

Land surface lakes
10.1 Lakes
Land surface lakes
10.1.1 Name
Commonly used name for the lakes in land model.
Enter TEXT:
10.1.2 Overview
Overview of land surface lakes in land model.
Enter TEXT:
10.1.3 Coupling With Rivers *
Are lakes coupled to the river routing model component?
Select either TRUE or FALSE:
☐ True ☐ False
10.1.4 Time Step *
Time step of lake scheme in seconds
Enter INTEGER value:
10.1.5 Quantities Exchanged With Rivers If coupling with rivers, which quantities are exchanged between the lakes and rivers
Select MULTIPLE options:
Heat
Water
☐ Tracers
Other - please specify:
10.1.6 Vertical Grid
Describe the vertical grid of lakes
Enter TEXT:

Lakes

10.1.7 Prognostic Variables *
List the prognostic variables of the lake scheme
Enter COMMA SEPERATED list:
10.2 Method
TODO
10.2.1 Overview
Overview of todo in land model.
Enter TEXT:
10.2.2 Ice Treatment * Is lake ice included?
Select either TRUE or FALSE:
☐ True ☐ False
10.2.3 Albedo *
Describe the treatment of lake albedo
Select SINGLE option:
Prognostic
Diagnostic
Other - please specify:
10.2.4 Dynamics *
Which dynamics of lakes are treated? horizontal, vertical, etc
Select MULTIPLE options:
No lake dynamics
Vertical
Horizontal
Other - please specify:
10.2.5 Dynamic Lake Extent *
Is a dynamic lake extent scheme included?
Select either TRUE or FALSE:
☐ True ☐ False

10.2.6	Endorhei	c Ba	sins *	k
Basins not flowing to ocean included?				
Select either TRUE or FALSE:				
	True		False	
10.3	Wetland	\mathbf{s}		
TODO				
10.0.1				
10.3.1	Overview	•		
Overview of todo in land model.				
Enter TEXT:				
10.3.2	Descripti	on		
Describe the treatment of wetlands, if any				