Model Inputs and Parameterisation

Describe input requirements; describe landcover and species parameterisations (splitting out between multiplicative and photosynthetic as appropriate

Contents

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# Model Data

Model data is split into the following categories:

## Configuration

This is derived from the configuration file provided by the user.

## External State

This is derived from the data provided by the user. The data is cleaned and processed ready for use by the DO3SE model (See Input requirements below).

## Model State

Model state is the internal state of the model. It defines the current state of growth, photosynthesis etc. The output is derived from the model state.

# DO3SE input data requirements(CHECK THESE)

|  |  |  |
| --- | --- | --- |
| **Input data** | **Height (m)** | **Units** |
| Ozone concentration (O3) | Reference height and surface canopy height | ppb |
| Horizontal windspeed (u) | Reference height and surface canopy height | m s-1 |
| Turbulent stress (τ) | surface | kg m-1 s-2 |
| Heat flux density (Hd) | surface | W m-2 |
| Air pressure (p) | surface | N m-2 |
| Global radiation  **OR**  Photon Photosynthetic Flux Density (PPFD) | Top of canopy  Top of canopy | W m-2  μmol m-2 s-1 |
| Air temperature (Tair) / Leaf temperature (Tleaf) | surface | K |
| Vapour Pressure Deficit (VPD) | Surface | kPa |
| Precipitation (Pr) | Ground | mm |
| **Site/Grid specific variables** | **Character** | **Ideal units** |
| Latitude and Longitude (lat & long) | - | o , ‘ |
| Elevation (e) | - | m a.s.l. |
| Target canopy height (tgt) | - | m |
| Soil texture | coarse / medium / fine | - |

N.B. Input data greyed out are only needed to estimate atmospheric stability (and are not required by the DO3SE model interface since here we assume a stable atmosphere); the DO3SE model will default to a medium soil texture if this information is not provided

Update table; make it very clear which parameters are required for which version of model!