**Table 1: Input variables for the unsaturated Barnes and Allison (1988) model.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Value** | | **Comment** |
| Temperature (°C) | 1°C to 26°C | | Monthly mean minimum and maximum |
| Bulk density (g/cm3) |  |  |  |
|  | 0.6 | | Peat |
|  | 1.1-1.2 | | Organic sand/clay |
|  | 1.7 | | Clean sand |
|  | 1.2 | | Basal sand |
| Porosity |  |  |  |
|  | 0.9 | | Peat |
|  | 0.7 | | 20% peat and sand |
|  | 0.5 | | 5% peat and sands |
|  | 0.38 | | Sands |
| Tortuosity |  |  |  |
|  | 0.39 | | Organic rich sandy soil |
|  | 0.66 | | Medium-coarse sand |
|  | 0.48 | | Medium sand |
|  | 0.21 | | Fine sand |
|  | 0.19 | | Clayey sand |

A close up of a map

Description generated with very high confidence

**Figure 1: Modelled vs measured δ2H in unsaturated soil profile after dry period (a, b) and wet period (c,d)**