EDHM module in/out data document

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# Prec

## PRECDivid

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | MetData | Precipitation | mm/ |  |
| TAir | Cel |  |
| OUT | Prec | RainFall | mm/ |  |
| SnowFall | mm/ | The equal volume of snow, not the depth of snow |

# Canopy

## ReferenceET

### ReferenceET.PenmanMonteith

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | TimeData | NDay | N/A | the day un the year |
| GeoData | Elevation | m |  |
| Latitude | deg |  |
| MetData | Tmax | Cel |  |
| Tmin | Cel |  |
| Tmean | Cel |  |
| WindSpeed | m/s |  |
| WindH | m | the high, that wind speed measure |
| SunHour | h | for daily RET |
| RelativeHumidity | 100% |  |
| OUT | ET | RET | mm |  |

### ReferenceET.Hargreaves

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | TimeData | NDay | N/A | the day un the year |
| LandData | Latitude | deg |  |
| MetData | Tmax | Cel |  |
| Tmin | Cel |  |
| Tmean | Cel |  |
| OUT | ET | RET | mm |  |

## ActualET

### ET.VIC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | ET | RET | mm |  |
| Prec | Precipitation | mm |  |
| Intercept | Interception | mm |  |
| Canopy | StorageCapacity | mm |  |
| Ground | MoistureVolume | mm |  |
| MoistureCapacityMax | mm |  |
| Aerodyna | AerodynaResist |  |  |
| ArchitecturalResist |  |  |
| StomatalResist |  |  |
| OUT | ET | Transpiration | mm |  |
| EvaporationCanopy | mm |  |
| EvaporationLand | mm |  |

## INTERCEPTION

### INTERCEPTION.Gash

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | ET | EvaporationCanopy | mm |  |
| Prec | Precipitation | mm |  |
| Intercept | Interception | mm |  |
| Canopy | StorageCapacity | mm |  |
| OUT | Intercept | Interception | mm |  |
| Prec | Precipitation | mm |  |

INTERCEPTION.SNOWVIC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Prec | RainFall | mm |  |
| SnowFall |  |  |
| ET | EvaporationCanopy | mm |  |
| Intercept | InterceptRain | mm |  |
| InterceptSnow |  |  |
| Atmos | PVegVaporFlux | mm |  |
| Energy | TFoliage, TCanopy, TSnow, TSurf |  |  |
| VaporizLatentHeat |  |  |
|  | ShortOverIn, LongOverIn |  |  |
| Snow | Coverage |  |  |
| Aerodyna | DisplacCanopy |  |  |
| WindSpeedCanopy |  |  |
| AerodynaResistCanopy |  |  |
| ReferHeightCanopy |  |  |
| RoughCanopy |  |  |
| VegData | MaxIntercept |  |  |
| Albedo |  |  |
| LAI |  |  |
| IsOverstory |  |  |
| MetData | TAir |  |  |
| AirDensity |  |  |
| VaporPressure |  |  |
| AirPressure |  |  |
| VaporPressDeficit |  |  |
| OUT | Intercept | InterceptSnow | mm |  |
| InterceptRain |  |  |
| Prec | RainFall |  |  |
| SnowFall |  |  |
| Atmos | VegVaporFlux |  |  |
| Energy | TFoliage |  |  |
| LongOverOut |  |  |
| LongUnderIn |  |  |

# Ground

## InfiltratRat

### InfiltratRat.GreenAmpt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Ground | Conductivity | mm |  |
| WettingFrontSuction | mm |  |
| Depth |  |  |
| Porosity |  |  |
| MoistureVolume |  |  |
| OUT | Infilt | InfiltrationRat | mm/T |  |

## Infiltration

### Infiltration.SER

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Prec | Precipitation | mm |  |
| Ground | MoistureCapacityMax | mm |  |
| MoistureCapacity | mm |  |
| OUT | Infilt | Infiltration | mm/T |  |

### Infiltration.OIER

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Prec | Precipitation | mm |  |
| Infilt | InfiltrationRateMax | mm |  |
| OUT | Infilt | Infiltration | mm/T |  |

## RUNOFF

### RUNOFF.SER

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Prec | Precipitation | mm |  |
| Ground | MoistureVolume | mm |  |
| MoistureCapacityMax | mm |  |
| OUT | Ground | Runoff | mm |  |
| Infilt | Infiltration |  |  |

### RUNOFF.OIER

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Prec | Precipitation | mm |  |
| Infilt | InfiltrationRateMax | mm |  |
| OUT | Ground | Runoff | mm |  |
| Infilt | Infiltration |  |  |

### RUNOFF.VIC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Prec | Precipitation | mm |  |
| Ground | MoistureVolume | mm |  |
| MoistureCapacityMax | mm |  |
| Infilt | InfiltrationRateMax | mm |  |
| OUT | Ground | Runoff | mm |  |
| Infilt | Infiltration |  |  |

### RUNOFF.VM

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Prec | Precipitation | mm |  |
| Ground | MoistureCapacity | mm |  |
| MoistureCapacityMax | mm |  |
| Infilt | InfiltrationRateMax | mm |  |
| OUT | Ground | Runoff | mm |  |
| Infilt | Infiltration |  |  |

## GROUNDWATER

### GROUNDWATER.VIC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Ground | Volum[1:3] | mm |  |
| Depth[1:3] | mm |  |
| BaseFlow | mm |  |
| ET | Transpiration | mm |  |
| EvaporationLand | mm |  |
| Aerodyna | AerodynaResist |  |  |
| ArchitecturalResist |  |  |
| StomatalResist |  |  |
| OUT | Ground | Volum[1:3] | mm |  |

## BASEFLOW

### BASEFLOW.ARNO

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Ground | MoistureVolume | mm |  |
| MoistureCapacityMax | mm |  |
| OUT | Ground | BaseFlow | mm |  |

# Route

## IUH

### makeUHALL

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | IUH | UHParam |  |  |
| UHMethond |  |  |
| OUT | IUH | UHAll[] |  | list |

## fctIUH

### fctIUH.Nash

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | IUH$ UHParam | IUHNashStorage |  |  |
| IUHNashShape |  |  |
| OUT |  | ut |  |  |

### fctIUH.Shipeng

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | IUH$ UHParam | RiverheadNumber |  |  |
| StreamLength |  |  |
| WaveVelocity |  |  |
| OUT |  | ut |  |  |

### fctIUH.RuiXF

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | IUH$ UHParam | RiverLength |  |  |
| IUHRuiXFAttenuation |  |  |
| WaveVelocity |  |  |
| OUT |  | ut |  |  |

## CONFLUENCE

### CONFLUENCE.G2RES

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Route | WaterSource | m3/s |  |
| Confluence | TypeGridID |  |  |
| TransAll |  |  |
| IUH | UHAll |  |  |
| OUT | Route | StaFlow | m3/s |  |

### CONFLUENCE.WSnGSmGn

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Route | WaterSource | m3/s |  |
| Confluence | TypeGridID |  |  |
| TransAll |  |  |
| IUH | UHAll |  |  |
| OUT | Route | StaFlow | m3/s |  |

## ROUTE

### ROUTE.IUHG2RES

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | Route | WaterSource | m3/s |  |
| Confluence | TypeGridID |  |  |
| TransAll |  |  |
| IUH | UHParam |  |  |
| UHMethond |  |  |
| OUT | Route | StaFlow | m3/s |  |

# Snow

## SNOW

### SNOW.VIC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IN/OUT | Variable group | Variable | Units | Notes |
| IN | SoilData | Roughness | m3/s |  |
| VegData | VegHeight |  |  |
| TrunkRatio |  |  |
| Displacement |  |  |
| RefHeight |  |  |
| Roughness |  |  |
| WindAttenuation |  |  |
| Fetch |  |  |
| MaxIntercept |  |  |
| LAI |  |  |
| Albedo |  |  |
| IsOverstory |  |  |
| MetData | PrecipitationHoch |  |  |
| WindSpeed |  |  |
| VaporPressDefficit |  |  |
| ShortWave |  |  |
| AirDensity |  |  |
| VaporPressure |  |  |
| AirPressure |  |  |
|  | GeoData | Latitude |  |  |
|  | LandData | MaxSnowDistribSlope |  |  |
|  | SnowRough |  |  |
|  | LagOneSlope |  |  |
|  | SigmaSlope |  |  |
|  | TimeData | JDay |  |  |
| OUT |  |  |  |  |