Stream Discharge File

The stream discharge file includes a short header. Following the header, the main file contents are comprised of simulated stream discharge for each reach, for each day, for each year. The file name is Q.flw.

Header

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Start Position | Field | # elements | Units | Type |
| Byte 0 | Version of file | 1 | - | Integer(4) |
|  |  |  |  |  |
| Byte 4 | name of element | 64 |  | char(1) |
| Byte 8 | # years | 1 | - | Integer(4) |
| Byte 72 | # hrus | 1 | - | Integer(4) |
| Byte 76 | # layers | 1 | - | Integer(4) |
| Byte 80 | # polys | 1 | - | Integer(4) |
| Byte 84  | # reaches | 1 | - | Integer(4) |
| Byte 88 | # data elements (1) | 1 | - | Integer(4) |
| Byte 92 | zero-based offset of each polygon in the shapefile | # reaches | - | Integer(4) |

Main File Contents

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Start Position | Field | # of elements | Units | Type |
| Byte 92+#Reaches\*4 | Stream discharge for each reach, day, and year | #Reaches\*#years\*365 | m3/s | Float(4) |

An example of the main file contents, representing a stream with two reaches, is depicted below.



Polygon Output File

There is a separate polygon output file for each output element. The format of each of these files is the same, with the only difference between each of them being the simulated data that is included. Each file includes a header that is very similar to that for the stream output file. The complete definition is below. The majority of the file is comprised of a single value for each polygon and for each year. These files together describe a number of components of the land cover projections and of the hydrologic cycle. The hydrologic cycle is characterized as a set of rates that are all presented as yearly totals.

Header

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Start Position | Field | # elements | Units | Type |
| Byte 0 | Version of file | 1 | - | Integer(4) |
|  |  |  |  |  |
| Byte 4 | name of element | 64 |  | char(1) |
| 68 |  |  |  |  |
| Byte 72 | # hrus | 1 | - | Integer(4) |
| Byte 76 | # layers | 1 | - | Integer(4) |
| Byte 80 | # polys | 1 | - | Integer(4) |
| Byte 84  | # reaches | 1 | - | Integer(4) |
| Byte 88 | # data elements (1) | 1 | - | Integer(4) |
| Byte 92 | Area of each polygon | # polys | m2 | Float(4) |
| Byte 92+#polys\*4 | zero-based offset of each polygon in the shapefile | # polys | - | Float(4) |

Main File Contents

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Start Position | Field | # elements | Units | Type |
| Byte 92+(#polys\*4)+ (#polys\*4) | Output values for each IDU and year | #polys\*#years | vary | Float(4) |

|  |  |  |
| --- | --- | --- |
| filename | Description | Units |
| lulc\_a.flw | Coarse landcover (see documentation for classification) |  |
| lulc\_b.flw | Finer landcover (see documentation for classification) |  |
| lai.flw | Leaf area index (only calculated for forested areas) |  |
| age.flw | Forest stand age | years |
| swe\_april1.flw | Snow Water Equivalent on April 1 | mm |
| precip\_yr.flw | Total yearly precipitation (January-January) | mm/year |
| pet\_yr.flw | Total yearly potential evapotranspiration | mm/year |
| et\_yr.flw | Total yearly actual evapotranspiration | mm/year |
| runoff\_yr.flw | total yearly runoff to the stream network | mm/year |
| storage\_yr.flw | total yearly storage | mm/year |
| irrig\_yr.flow | total yearly irrigation | mm/year |

