d:\swatplus\_javaforge\Rev34\_docs

**REVISION 34 – June, 2017**

1. NEW\_INPUT\_FILES

Contains a list of new input files that are being tested.

1. NEW\_OUTPUT\_FILES

Contains a list of new output files being review.

1. Existing output files

List of changes in output files

1. Existing input files

List of changes in input files

1. Other

Other files that were modified in this revision.

1. **NEW INPUT FILES**

HYDROLOGY.WET - INPUTS INCLUDE:

type wetland\_hyd\_data

character(len=16) :: name = "default"

real :: psa = 0. !frac |frac of hru area at princ spillway (when surface inlet riser flow starts)

real :: pvol = 0. !mm |average depth of water at principal spillway

real :: esa = 0. !frac |frac of hru area at emer spillway (ie: when starts to spill into ditch)

real :: evol = 0. !mm |average depth of water at emergency spillway

real :: k = .01 !mm/hr |hydraulic conductivity of the res bottom

real :: evrsv = .7 !none |lake evap coeff

real :: acoef = 1. !none |vol-surface area coefficient for hru impoundment

real :: bcoef = 1 !none |vol-depth coefficient for hru impoundment

real :: ccoef = 1 !none |vol-depth coefficient for hru impoundment

real :: frac = .5 !none |fraction of hru that drains into impoundment

end type wetland\_hyd\_data

type (wetland\_hyd\_data), dimension(:), allocatable :: wet\_hyd

EXAMPLE FILE:

hydrology.wet

NUMB NAME PSA PVOL ESA EVOL K EVRSV ACOEF BCOEF CCOEF FRAC

1 pnd1 4.95 12.25125 5.445 14.8240125 0 0.6 0 0 1 0.5

WETLAND.WET - INPUTS INCLUDE:

type reservoir\_data\_char\_input

character (len=16) :: name = "default"

character (len=16) :: init !initial data-points to initial.res

character (len=16) :: hyd !points to hydrology.res for hydrology inputs

character (len=16) :: release !0=simulated; 1=measured outflow

character (len=16) :: sed !sediment inputs-points to sediment.res

character (len=16) :: nut !nutrient inputs-points to nutrient.res

character (len=16) :: pst !pesticide inputs-points to pesticide.res

end type reservoir\_data\_char\_input

type (reservoir\_data\_char\_input), dimension(:), allocatable :: res\_dat\_c

type (reservoir\_data\_char\_input), dimension(:), allocatable :: wet\_dat\_c

EXAMPLE FILE:

wetland.wet

NUMB NAME INIT HYD RELEASE SED NUT PST

1 wet1 res001 pnd1 corps\_med\_res res001 res001 res001

1. **NEW OUTPUT FILES**

Wetland output file (triggers and is written from RESERVOIR objects).

Filenames of output files are:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **WETLAND(all)** | **output filename** |  | **CSV filename** |  |
| wetland(day) | wetland\_day\_res.txt |  | wetland\_day\_res.csv |  |
| wetland(mon) | wetland\_mon\_res.txt |  | wetland\_mon\_res.csv |  |
| wetland(yr) | wetland\_yr\_res.txt |  | wetland\_yr\_res.csv |  |
| wetland(av ann) | wetland\_aa\_res.txt |  | wetland\_aa\_res.csv |  |

1. **EXISTING OUTPUT FILES**

All reservoir output files – removed FLO output variable

1. **EXISTING INPUT FILES**
2. **FILE.CIO** – added ‘**wetland.wet’** and ‘**hydrology.wet’** to reservoir:

!! reservoir

type input\_res

character(len=25) :: init\_res = "initial.res"

character(len=25) :: res = "reservoir.res"

character(len=25) :: hyd\_res = "hydrology.res"

character(len=25) :: nut\_res = "nutrients.res"

character(len=25) :: pest\_res = "pesticide.res"

character(len=25) :: sed\_res = "sediment.res"

character(len=25) :: weir\_res = "weir.res"

**character(len=25) :: wet = "wetland.wet"**

**character(len=25) :: hyd\_wet = "hydrology.wet"**

end type input\_res

type (input\_res) :: in\_res

PARTIAL file.cio:

file.cio: Filenames (input/output) - LREW landscape

SIMULATION time.sim print.prt object.prt object.cnt

CLIMATE weather-sta.cli weather-wgn.cli null pcp.cli tmp.cli slr.cli hmd.cli wnd.cli

CONNECT hru.con null rout\_unit.con null aquifer.con null channel.con reservoir.con null null null null null

CHANNEL initial.cha channel.cha hydrology.cha sediment.cha nutrients.cha pesticide.cha null

RESERVOIR initial.res reservoir.res hydrology.res nutrients.res pesticide.res sediment.res weir.res **wetland.wet hydrology.wet**

SUBBASIN rout\_unit.def rout\_unit.ele rout\_unit.ru null

width/depth/slope sd\_channels

sd\_channel output files rewrite

1. **FILE.CIO** – The option was added for including the path of the pcp/tmp/slr/hmd/wnd .cli files so they can be in a separate directory from the project input files. The files \*.cli files will all remain in the project directory. Only the daily weather files will be if this option is used. By entering ‘null’ or blank, the model assumes the file(s) are in the same as the working/project directory. The character limit for this path is currently set == 50.

PARTIAL file.cio:

DECISION\_TABLE d\_table.dtl

CONSTITUENTS null null null null null

REGIONS ls\_unit.ele ls\_unit.def null null null null null null null null null null null null null null

**CLIMATE\_PCP d:\wx\pcp\**

**CLIMATE\_TMP d:\wx\tmp\**

**CLIMATE\_SLR d:\wx\slr\**

**CLIMATE\_HMD d:\wx\hmd\**

**CLIMATE\_WND d:\wx\wnd\**

1. **FILE.CIO –** Cleaning up atmospheric deposition file moving the file with the climate files;

**NOTE: ATMODB in IN\_PARMDB should be removed;**

!! climate

type input\_cli

character(len=25) :: weat\_sta = "weather-sta.cli"

…

character(len=25) :: atmo\_cli = "atmodep.cli" **🡨added in this type**

end type input\_cli

type (input\_cli) :: in\_cli

!! databases

type input\_parameter\_databases

character(len=25) :: plants\_plt = "plants.plt"

…

character(len=25) :: septic\_sep = "septic.sep"

character(len=25) :: snow = "snow.sno"

**character(len=25) :: atmodb = "atmo.atm"** 🡨**deleted in this type**

end type input\_parameter\_databases

type (input\_parameter\_databases) :: in\_parmdb

PARTIAL file.cio:

file.cio: Filenames (input/output) - LREW landscape

SIMULATION time.sim print.prt object.prt object.cnt

CLIMATE weather-sta.cli weather-wgn.cli null pcp.cli tmp.cli slr.cli hmd.cli wnd.cli **atmodep.cli** **🡨added**

…

STRUCTURAL null null null null null

PARM\_DB plants.plt fertilizer.frt tillage.til pesticide.pst urban.urb septic.sep snow.sno **atmo\_mon.dat 🡨deleted**

OPS harv.ops graze.ops irr.ops chem\_app.ops fire.ops sweep.ops

LUM landuse.lum management.sch cntable.lum cons\_practice.lum ovn\_table.lum

1. **TIME.SIM:**

The format of this file changed; (removed NBYR; added YRC\_END and reordered IDAF/IDAL;

IDAF YRC\_START IDAL\_IN YRC\_END STEP

0 1959 0 1961 0

1. **INITIAL.PLT** – PHU\_MAT column removed from this file and put in **PLANTS.PLT** file
2. **PLANTS.PLT** – added a column with potential heat units (column after the IDC variable)
3. **MANAGEMENT.SCH** – the names of the auto operations moved to a separate line;

EXAMPLE -

Management.lum: Management schedules

NAME NUM\_OPS OP MON DAY HUSC OP\_TYPE OP\_PLANT OP\_OVER

csoy 7 1

**autoirr\_str.8**

1. **URBAN.URB** – sequential number (1st column) removed from this file.

1. **OTHER**

* **Subroutines added:** wetland\_output.f90

header\_wetland.f90

wet\_hyd\_read.f90

wet\_read.f90

wet\_initial.f90

* **Split output\_landscape\_init.f90 into new subroutines**: 🡪 header\_channel.f90

header\_aquifer.f90

header\_reservoir.f90

header\_hyd.f90

header\_sd\_channel.f90

header\_soils.f90

header\_mgt.f90

header\_yield.f90

* **Renamed:** READATMODEP.F90 to CLI\_ATMODEP.F90 in an effort to clean up Atmospheric Deposition input files;

ATMOPARM\_READ.F90 renamed to CLI\_ATMODEP\_READ.F90

* A directory was added to the commit sets named ‘database\_files’. This is a first commit to include all database files all users may use for their projects. Some of these will be updated and some other files will be added as we progress.