

## Noah HRLDAS model namelist description (namelist.hrlDas) for use with WRF-Hydro V5

Below is an annotated `namelist.hrlDas` file for running with the Noah land surface model. Notes and descriptions are indicated with `<<--` and blue text.

### **&NOAHLSTM\_OFFLINE**

HRLDAS\_CONSTANTS\_FILE = "./DOMAIN/wrfinput\_d01" <<-- Path to wrfinput file containing initialization data for the LSM. This is required even for a warm start where a restart file is provided.

INDIR = "./FORCING" <<-- Path to atmospheric forcing data directory.

OUTDIR = "./" <<-- Generally leave this as-is (output goes to base run directory); redirected output only applies to LSM output files and can cause issues when running coupled to WRF-Hydro.

START\_YEAR = 2013 <<-- Simulation start year

START\_MONTH = 09 <<-- Simulation start month

START\_DAY = 01 <<-- Simulation start day

START\_HOUR = 00 <<-- Simulation start hour

START\_MIN = 00 <<-- Simulation start min

RESTART\_FILENAME\_REQUESTED = "RESTART.2013090100\_DOMAIN1" <<-- Path to LSM restart file if using; this contains a "warm" model state from a previous model run. Comment if not a restart simulation.

! Specification of simulation length in days OR hours

KDAY = 1440 <<-- Number of days for simulation; can specify this OR K HOUR.

!K HOUR = 1 <<-- Number of hours for simulation; can specify this OR KDAY.

! Timesteps in units of seconds

FORCING\_TIMESTEP = 3600 <<-- Timestep for forcing input data (in seconds)

NOAH\_TIMESTEP = 3600 <<-- Timestep the LSM to cycle (in seconds)

OUTPUT\_TIMESTEP = 86400 <<-- Timestep for LSM outputs, LDASOUT (in seconds)

! Land surface model restart file write frequency

RESTART\_FREQUENCY\_HOURS = 6 <<-- Timestep for LSM restart files to be generated (in hours). A value of -99999 will simply output restarts on the start of each month, useful for longer model runs. Restart files are generally quite large, so be cognizant of storage space and runtime impacts when specifying.

! Split output after split\_output\_count output times.

SPLIT\_OUTPUT\_COUNT = 1 <<-- Number of timesteps to put in a single output file. This option must be 1 for NWM output configurations.

! Soil layer specification

NSOIL=4 <<-- Number of soil layers

soil\_thick\_input(1) = 0.10 <<-- Thickness of top soil layer (m)

soil\_thick\_input(2) = 0.30 <<-- Thickness of second soil layer (m)

soil\_thick\_input(3) = 0.60 <<-- Thickness of third soil layer (m)

soil\_thick\_input(4) = 1.00 <<-- Thickness of bottom soil layer (m)

! Forcing data measurement heights

ZLVL = 10.0 <<-- Height of input temperature and humidity measurement/estimate

ZLVL\_WIND = 10.0 <<-- Height of input wind speed measurement/estimate

IZOTLND = 0 <<-- Switch to control land thermal roughness length. Option 0 is the default, non-vegetation dependent value and option 1 introduces a vegetation dependence.

SFCDIF\_OPTION = 0 <<-- Option to use the newer, option 1, or older, option 0, SFCDIF routine. The default value is 0.

UPDATE\_SNOW\_FROM\_FORCING = .FALSE. <<-- Option to activate or deactivate updating the snowcover fields from available analyses. The default option is true.

**! ----- Section: Select atmospheric forcing input file format, FORC\_TYP ----- !**

! Specification of forcing data: 1=HRLDAS-hr format,

! 2=HRLDAS-min format, 3=WRF,4=Idealized, 5=Ideal w/ Spec.Precip.,

! 6=HRLDAS-hrly format w/ Spec. Precip, 7=WRF w/ Spec. Precip

FORC\_TYP = 3

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