

# Mid-Holocene set up

**Date:** 20 September 2011

**Project:** Purdue Portal CESM1 Use Case

**Collaborators:** Nan Rosenbloom, Bette Otto-Bliesner, Sylvia Murphy, Jerry Potter, Kathy Saint, Cecelia DeLuca, Eric Neinhouse, Nathan Wilhelmi, Don Middleton, Carol Song, Chris Thompson

**Background** for CESM1 Mid-Holocene simulation.

The Mid-Holocene (6ka BP) simulation has a complex history. It was initially branched from year 863 of a 1300 year Pre-Industrial control simulation (b40.1850.track1.1deg.006). We ran this branch case to test the carbon pool stability under the newly imposed GHG and climate forcings for the Mid-Holocene. We decided we needed to run an I-case (atm/land only) simulation to rapidly spin up the carbon pools (i40.mh6ka.1deg.001). We used the output from the I-case simulation to initialize the land component of the Mid-Holocene simulation. The ocean, ice and atmosphere were initialized from year 801 of the Pre-Industrial control.

**CESM model version:** cesm1\_0\_beta05

**Compset:** B1850CN

**Restart Files:** /glade/proj3/cseg/inputdata/ccsm4\_init/b40.mh6ka.1deg.003/0801-01-01

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**CESM setup:**  
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**create CASEDIR:** ./create\_newcase

-case /<mypath>/<myCaseName>

-compset B1850CN

-res f09\_g16

-mach <myMachine>

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**Pre-Configuration Changes:**  
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-- env\_conf.xml

Runtype: hybrid

RUN\_STARTDATE = 0801

RUN\_REFCASE =

LND: i40.mh6ka.1deg.001 yr 1250-01-01

OCN/ICE/ATM: b40.1850.track1.1deg.006 yr 0801-01-01

RUN\_REFDATE = 0801

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xmlchange -file env\_conf.xml -id RUN\_STARTDATE -val 0801-01-01

xmlchange -file env\_conf.xml -id RUN\_REFDATE -val 0801-01-01

xmlchange -file env\_conf.xml -id CCSM\_CO2\_PPMV -val 280.0

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**Post-Configuration Changes**  
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-- Buildconf/clm.buildnml.csh

OLD: urban\_hac = 'ON\_WASTEHEAT'

NEW: urban\_hac = 'OFF'

-- Buildconf/cam.buildnml.csh

OLD:

ch4vmr = 791.6e-9

co2vmr = 280.0e-6

f11vmr = 12.48e-12

f12vmr = 0.0

n2ovmr = 275.68e-9

NEW:

ch4vmr = 650.0e-9  
co2vmr = 280.0e-6  
f11vmr = 0.0  
f12vmr = 0.0  
n2ovmr = 270.0e-9

-- Buildconf/cpl.buildnml.csh

OLD: orb\_iyear\_ad = 1990  
NEW: orb\_iyear\_ad = -4050

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**SourceMods Information -- None**  
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