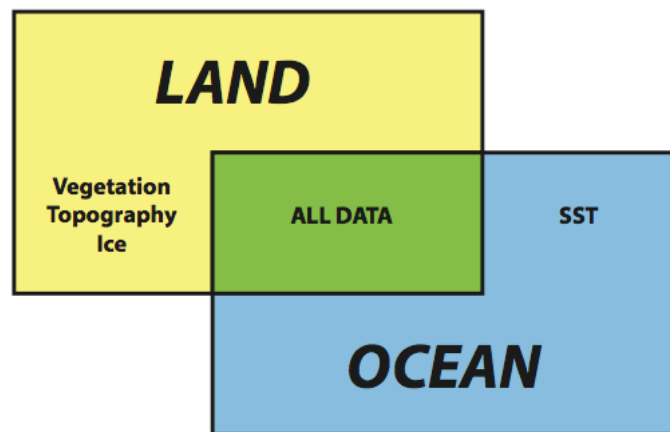


## CONTENTS OF PlioMIP PACKAGES:

PlioMIP data are distributed using a fractional land-sea grid. Continental and oceanic regions are 100% land and ocean respectively, but the margin between these areas is fractional. Areas with only land are given land cover (biome and megabiome) classification, and topography. Ocean only areas have ocean temperature. Fractional land-sea regions (coastal areas) are given all relevant data types.

### PRISM Fractional Grid Data:



Both Experiments 1 and 2 have a **preferred** and **alternate** configuration. The preferred data are projected onto a land/sea grid that exhibits a 25m sea level rise. These data are meant to be used as long as you can change the land/sea mask in your model. The alternate data are projected on a modern land sea grid for those models that cannot change coastlines. Additional data that will be required can also be found in the “accessory” area of the PlioMIP Data page (e.g., modern topography, modern vegetation, modern SST).

### Experiment 1: AGCM, PREFERRED DATA SET-----

**Fractional land/sea grid:** The preferred reconstruction is based upon a fractional land/sea distribution found in <land\_fraction\_v1.1>. Topography and SST are provided for all cells that have any fraction of land or ocean respectively.

**Topography:** The elevations provided in < topo\_v1.1> are derived from the new topographic reconstruction of Sohl et al. (2009). This reconstruction represents a +25m sea level shoreline as well as “filled in” Hudson Bay and other lakes in keeping with the design of Experiment 1. This reconstruction utilizes the BAS ice sheet reconstruction, see below. When using these data please cite:

Sohl, L.E., Chandler, M.A., Schmunk, R.B., Mankoff, Ken, Jonas, J.A., Foley, K.M., and Dowsett, H.J., 2009, PRISM3/GISS topographic reconstruction: *U.S. Geological Survey Data Series* 419, 6 p.

PRISM3 modern topography <PRISM3\_modern\_topo> is a 2°x2° elevation dataset re-gridded from the ETOPO1 Global Relief Model data. This dataset includes land elevation only. Negative elevation values (bathymetry) have been set to zero. This modern data set **does not** use the preferred or alternate fractional land/sea grid. Citation for ETOPO1:

Amante, C. and B. W. Eakins, *ETOPO1 1 Arc-Minute Global Relief Model: Procedures, Data Sources and Analysis*. National Geophysical Data Center, NESDIS, NOAA, U.S. Department of Commerce, Boulder, CO, August 2008.

**Vegetation:** Biome < biome\_veg\_v1.3> and Megabiome < mbiome\_veg\_v1.3> land cover are provided on the same preferred fractional land grid so that every cell with any fraction of land has a land cover type. These data are derived from:

Salzmann, U., Haywood, A. M., Lunt D. J. Valdes, P. J. & Hill, D. J. 2008 A new Global Biome Reconstruction and Data-Model Comparison for the middle Pliocene. *Global Ecology and Biogeography* 17(3): 432-447.

Hill, D.J., Haywood, A.M., Hindmarsh, R.C.A., Valdes, P.J. (2007). Characterising ice sheets during the mid Pliocene: evidence from data and models, in Williams, M., Haywood, A.M., Gregory, F.J., Schmidt, D.N., ed., *Deep Time Perspectives on Climate Change: Marrying the Signal from Computer Models and Biological Proxies*: London, The Micropalaeontological Society, Special Publications. The Geological Society, p. 517-538.

**Ocean temperature:** Twelve average monthly SST fields are provided in <PRISM3\_SST\_v1.1>. Values of -1.8 represent sea-ice cover. SSTs are provided for all 2°x2° cells that are ocean or have any fractional amount of ocean. These data are a modification of those presented in Dowsett (2007). When using this file please cite:

Dowsett, H.J., 2007, The PRISM palaeoclimate reconstruction and Pliocene sea-surface temperature, in Williams, M., Haywood, A.M., Gregory, F.J., Schmidt, D.N., ed., *Deep Time Perspectives on Climate Change: Marrying the Signal from Computer Models and Biological Proxies*: London, The Micropalaeontological Society, Special Publications. The Geological Society, p. 459-480.

Robinson, M.M., Dowsett, H.J., Dwyer, G.S., and Lawrence, K.T., 2008, Reevaluation of mid-Pliocene North Atlantic sea surface temperatures: *Paleoceanography*, 23: 1-9.

Dowsett, H.J., and Robinson, M.M., 2009, Mid-Pliocene equatorial Pacific sea surface temperature reconstruction: a multi-proxy perspective: *Philosophical Transactions of the Royal Society A*, 367(1886): 109-126.

PRISM3 modern SST files are in a 2°x2° format. Original February and August SST data set (Reynolds & Smith, 1995) is 1°x1° and any 2°x2° cells with fractional amounts of water were given SST values. The data were further modified to match the PlioMIP preferred <PRISM3\_modern\_SST> land/sea mask. Sea ice extent follows USGS DDS-27 (1995) and represents monthly average sea ice concentrations of >50% for 1978 through 1992.

Reynolds, R.W. and Smith, T.M., 1995. A high resolution global sea surface temperature climatology. *Journal of Climate*, 8: 1571-1583.

Schweitzer, P.N., 1995. Monthly average polar sea-ice concentration: U.S. Geological Survey Digital Data Series DDS-27, U.S. Geological Survey, Reston, Virginia. <http://pubs.usgs.gov/dds/dds27/>.

### Experiment 1: AGCM, ALTERNATE DATA SET-----

**Fractional land/sea grid:** The alternative reconstruction is based upon a fractional land/sea distribution found in <land\_fraction\_v1.3>. Topography and SST are provided for all cells that have any fraction of land or ocean respectively.

**Topography:** The elevations provided in < topo\_v1.4> are derived from the new topographic reconstruction of Sohl et al. (2009). This reconstruction represents a modern shoreline as well as “filled in” Hudson Bay and other lakes in keeping with the design of Experiment 1. This reconstruction utilizes the BAS ice sheet reconstruction, see below. When using these data please cite:

Sohl, L.E., Chandler, M.A., Schmunk, R.B., Mankoff, Ken, Jonas, J.A., Foley, K.M., and Dowsett, H.J., 2009, PRISM3/GISS topographic reconstruction: *U.S. Geological Survey Data Series* 419, 6 p.

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**Vegetation:** Biome < biome\_veg\_v1.2> and Megabiome < mbiome\_veg\_v1.2> land cover are provided on the same alternative (modern) fractional land grid so that every cell with any fraction of land has a land cover type. These data are derived from:

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PRISM3 modern SST files are in a 2°x2° format. Original February and August SST data set (Reynolds & Smith, 1995) is 1°x1° and any 2°x2° cells with fractional amounts of water were given SST values. The data were further modified to match the PlioMIP alternate <PRISM3\_alt\_modern\_SST> land/sea mask. Sea ice extent follows USGS DDS-27 (1995) and represents monthly average sea ice concentrations of >50% for 1978 through 1992.

Reynolds, R.W. and Smith, T.M., 1995. A high resolution global sea surface temperature climatology. *Journal of Climate*, 8: 1571-1583.

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## Experiment 2: AOGCM, PREFERRED DATA SET-----

**Fractional land/sea grid:** The preferred reconstruction is based upon a fractional land/sea distribution found in <land\_fraction\_v1.1>. Topography and SST are provided for all cells that have any fraction of land or ocean respectively.

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Sohl, L.E., Chandler, M.A., Schmunk, R.B., Mankoff, Ken, Jonas, J.A., Foley, K.M., and Dowsett, H.J., 2009, PRISM3/GISS topographic reconstruction: *U.S. Geological Survey Data Series* 419, 6 p.

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**Ocean temperature:** PRISM3 deep ocean temperature data <Global\_dot\_v2.0> are in a 4°x5° format at 33 depth layers corresponding to Levitus and Boyer (1994). The modern data were downloaded from the International Research Institute for Climate and Society server (<http://portal.iri.columbia.edu/portal/server.pt>) in 2°x2° format. Mid-November and mid-December temperature values were averaged to produce an approximation of December 1 values. The results were regridded to a 4°x5° grid. When using PRISM3 ocean temperature data please cite:

Dowsett, H.J., Robinson, M.M. and Foley, K.M., in prep. Mid-Piacenzian ocean temperatures: the PRISM3D reconstruction.

The citation for comparative modern ocean temperature data is:

Levitus, S., and T. Boyer (1994), World Ocean Atlas Volume 4: Temperature, NOAA Atlas NESDIS 4, US Government Printing Office.

## Experiment 2: AOGCM, ALTERNATE DATA SET-----

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