

GOYDER INSTITUTE MODEL METADATA TEMPLATE

METADATA REQUIRED	DETAILS
Model Name and version	MVNHMM <u>M</u> ulti- <u>V</u> ariate <u>N</u> on-homogeneous <u>H</u> idden <u>M</u> arkov <u>M</u> odel
Date of lodgement of Metadata Template. Name of Metadata Provider.	18 November 2014 Dr Steve Charles, Steve.Charles@csiro.au CSIRO Land and Water Flagship Water Resource Management Program Water Resources Assessment & Prediction Group
Goyder Institute Project Number and Name	GOYDER INSTITUTE FOR WATER RESEARCH Project No. C.1.1 Development of an agreed set of climate change projections for South Australia
Project Team	Project Leader Professor Simon Beecham, simon.beecham@unisa.edu.au CSIRO Task 3 Team Task 3 Leader Dr Steve Charles, Steve.Charles@csiro.au Project Team CSIRO Members: Steve Charles, Steve.Charles@csiro.au Guobin Fu, Guobin.Fu@csiro.au Freddie Mpelasoka, Freddie.Mpelasoka@csiro.au
Creator/Developer	Dr Sergey Kirshner, previously of Purdue University, USA.
Owner/Contact Person and contact details	Dr Steve Charles, Steve.Charles@csiro.au
Model Location	<i>Where is the model archived?</i> CSIRO Data Access Portal (DAP) http://dx.doi.org/10.4225/08/552C4F24D03F2 <i>Is there a version of the model in active further development?</i> No <i>Where is this active version located?</i> Not applicable
IP or other permission requirements	***** REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT ***** <i>Are there any IP issues associated with the model and/or the dependencies that future users need to be aware of?</i> The software is distributed under BSD license. http://www.sergeykirshner.com/software/mvnhmm/license

METADATA REQUIRED	DETAILS
Licences associated with model and/or dependencies	<p>***** REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT *****</p> <p><i>Are there any licenses associated with the model and/or the dependencies that future users need to be aware of?</i></p> <p>See IP section above.</p>
Confidentiality agreements associated with model and/or dependencies	<p><i>Are there any confidentiality agreements associated with the model and/or the dependencies that future users need to be aware of?</i> No</p>
Brief outline of model	Statistical downscaling model for daily multi-site rainfall.
Area/region covered	Station networks for South Australian Natural Resource Management (SA NRM) Regions.
Platform and language & version	C++ on Linux platform
Dependencies upon: <ul style="list-style-type: none"> i) other models and/or platforms (including version) and location ii) essential data and data sources & location 	Not platform or data dependent.

METADATA REQUIRED	DETAILS
How was model used	<ul style="list-style-type: none"> ○ <i>Parameterisation/Validation (if applicable; include time period of calibration/simulation)</i> Summarised in Goyder Institute Technical Report 15/1 ○ <i>Scenarios and outputs from various runs (indicate where these are stored)</i> The model was applied to downscaled climate projections from 15 GCMs (global-scale models) under future medium- and high-emission scenarios. Summarised in Goyder Institute Technical Report 15/1 Available at: http://goyderinstitute.org/ Data stored in CSIRO Data Access Portal (DAP): http://dx.doi.org/10.4225/08/54644D99C091A ○ <i>Assumptions behind model (indicate where these are stored)</i> Summarised in Goyder Institute Technical Report 15/1 ○ <i>Limitations of model</i> Summarised in Goyder Institute Technical Report 15/1 ○ <i>Peer review process (if applicable)</i> Reviewed by two external reviewers ○ <i>Extensibility of model (can it be run for different time periods)</i> The model can be run for any time period for which input data is available. <p>Goyder Institute Technical Report 15/1 is available at http://goyderinstitute.org/</p>
Specificity of data	<p><i>Was data sourced from local field sites or literature</i></p> <p>Calibration used station rainfall data from SILO Patched Point Dataset https://www.longpaddock.qld.gov.au/silo/ppd/index.php and NCEP/NCAR Reanalysis atmospheric data provided by the NOAA/OAR/ESRL PSD, Boulder, Colorado, USA, from their Web site at http://www.esrl.noaa.gov/psd/</p>
Datasets/data products produced	<p><i>Include details of where datasets/products are located and contact details in the storage location</i></p> <p>Datasets are summarised in Goyder Institute Technical Report 15/1 Available at http://dx.doi.org/10.4225/08/54644D99C091A Details on library entry for the data are given here: http://researchdata.ands.org.au/goyder-institute-water-south-australia/472254</p>

METADATA REQUIRED	DETAILS
Other Information	
Publications (papers and technical reports)	Charles, S.P. and Fu, G. 2014, <i>Statistically Downscaled Projections for South Australia – Task 3 CSIRO Final Report</i> , Goyder Institute for Water Research Technical Report Series No. 15/1, Adelaide, South Australia.
Collaborations and acknowledgements	Dr Sergey Kirshner (contact details above)
Keywords	Climate change, NHMM, GCM, downscaling, stochastic, South Australian regions