GOYDER INSTITUTE FOR WATER RESEARCH MODEL METADATA TEMPLATE

METADATA REQUIRED	DETAILS
Model Name and version	GLIMCLIM: Generalized LInear Modelling of daily CLImate sequence (http://www.ucl.ac.uk/~ucakarc/work/glimclim.html)
Date of lodgement of Metadata Template. Name of Metadata Provider	May 2015 Mamunur Rashid (mdmamunur.rashid@mymail.unisa.edu.au) Centre for Water Management and Reuse School of Natural and Built Environment University of South Australia
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) Dr. Mohammad Kamruzzaman (Mohammad.Kamruzzaman@unisa.edu.au) Dr. Julia Piantadosi (Julia.Piantadosi@unisa.edu.au) Mamunur Rashid (mdmamunur.rashid@mymail.unisa.edu.au)
Creator/Developer	Professor Richard Chandler, University College London e-mail: r.chandler@ucl.ac.uk
Owner/Contact Person and contact details	Professor Christopher Saint (christopher.Saint@unisa.edu.au) Director Centre for Water Management and Reuse School of Natural and Built Environments University of South Australia
Model Location	*Where is the model archived?* http://www.ucl.ac.uk/~ucakarc/work/glimclim.html *Provide contact details of individual and unit/group within designated organisation* Professor Richard Chandler University College London (UCL) e-mail: r.chandler@ucl.ac.uk *Is there a version of the model in active further development?* No *Where is this active version located?* Not Applicable

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IP or other permission requirements	********* **REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT** ******* *Are there any IP issues associated with the model and/or the dependencies that future users need to be aware of?* The GLIMCLIM software is a freely available open source software
Licences associated with model and/or dependencies	********* **REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT** ******* *Are there any licenses associated with the model and/or the dependencies that future users need to be aware of?* The following climate data were used 1. Station rainfall data from SILO Patched Point Dataset: https://www.longpaddock.qld.gov.au/silo/ppd/index.php (this data needs a license) **2.** 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/ (this data is free to use)
Confidentiality agreements associated with model and/or dependencies	*Are there any confidentiality agreements associated with the model and/or the dependencies that future users need to be aware of?* NO
Brief outline of model	Generalized Linear Model (GLM) based statistical downscaling model for multi-site daily rainfall
Area/region covered	Onkaparinga catchment in South Australia
Platform and language and version	FORTRAN 77 on both windows and Unix platforms
Dependencies upon: i) other models and/or platforms (including version) and location ii) essential data and data sources and location	Not dependent on any other model Platform and data independent

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How was model used	○ *Parameterisation/Validation (if applicable; provide a brief summary and include time period of calibration/simulation)* The calibration and validation periods of the model were 1961 – 1986 and 1987 – 2000, respectively. The model was used to downscale daily rainfall from GCM projections over the period 2041 – 2060. ○ *Scenarios and outputs from various runs (provide a brief summary and indicate where these are stored)* The model was applied to downscaled daily climate projections from four CMIP5 GCMs under future medium- and high-emission scenarios such as RCP4.5 and RCP8.5 ○ *Assumptions behind model (provide a brief summary and indicate where these are stored)* The statistical relationship between predictors and predictands will not be changed in the future. ○ *Limitations of model (provide a brief summary)* The model is limited to reproduce the inter-annual variability when daily rainfall is aggregated to seasonal and annual series which is termed as the over-dispersion phenomenon. ○ *Peer review process (if applicable)* Reviewed by two external reviewers ○ *Extensibility of model (can it be run for different time periods)* The model can be run for any other time period as long as data are available.
Specificity of data	*Was data sourced from local field sites or literature* 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/ were used to calibrate the model

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Datasets/data products produced	*Include details of where datasets/products are located and contact details in the storage location* See details above in Specificity of data regarding datasets.
Other Information	
Publications (papers and technical reports)	Beecham, S., Rashid, M. and Chowdhury, R. K. 2014, *Statistical downscaling of multi-site daily rainfall in a South Australian catchment using a Generalized Linear Model.* International Journal of Climatology, 34: 3654–3670. doi: 10.1002/joc.3933 Rashid, M. M., Beecham, S. and Chowdhury, R. 2013, *Simulation of extreme rainfall from CMIP5 in the Onkaparinga catchment using a generalized linear model*, MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, Adelaide, Australia, December 2013.
Collaborations and acknowledgements	Professor Richard Chandler, University College London (UCL). e-mail: r.chandler@ucl.ac.uk
Keywords	Generalized Linear Model (GLM), climate change, downscaling, General Circulation Model (GCM)