GOYDER INSTITUTE FOR WATER RESEARCH MODEL METADATA TEMPLATE

METADATA REQUIRED	DETAILS
Model Name and version	ELCOM version 2.2.2 Jun 4 2012
Date of lodgement of Metadata Template. Name of Metadata Provider	February 2015 Dr Robert Daly, Rob.Daly@sawater.com.au Senior Scientist – Environment and Resource Services, SA Water T 8 7424 1033
Goyder Institute Project Number and Name	**GOYDER INSTITUTE FOR WATER RESEARCH Project No. I.1.5** Torrens Lake Amenity Flows River Torrens Water Quality Improvement Trial Summer 2013–14
Project Team	Project Leader: Prof Justin Brookes, justin.brookes@adelaide.edu.au Dr Robert Daly, Rob.Daly@sawater.com.au Katharine Ward, Katharine.ward@sa.gov.au
Creator/Developer	ELCOM: The Centre for Water Research, University of Western Australia Torrens Model Setup: Rob Daly, SA Water
Owner/Contact Person and contact details	Dr Robert Daly, Rob.Daly@sawater.com.au Senior Scientist – Environment and Resource Services, SA Water T 08 7424 1033
Model Location	*Where is the model archived? Available from contact person* The model is stored at SA Water. Dr Robert Daly, Rob.Daly@sawater.com.au Senior Scientist – Environment and Resource Services, SA Water T 08 7424 1033 *Is there a version of the model in active further development? Where is this active version located?* Yes. See owner details above.
IP or other permission requirements	********* REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT ******* Lake bathymetry data is IP from Adelaide City Council (Andrew Smith, a.smith@adelaidecitycouncil.com). Some input data (solar radiation) is IP from SA Water. See owner details listed above.
Licences associated with model and/or dependencies	********* REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT ******* Licence is required for ELCOM model software. Available from Centre for Water Research (http://www.cwr.uwa.edu.au/software1/)
Confidentiality agreements associated with model and/or dependencies	None

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Brief outline of model	This model was used to model water flow into the Torrens Lake following the release of water from upstream during the 2013-2014 Amenity Flow Trial. The model was used to simulate velocity, temperature, salinity, tracer, and algal population growth under various water inflow conditions. Details are available in: Goyder Institute for Water Research Technical Report Series No. 14/26 Available at: http://goyderinstitute.org/
Area/region covered	Torrens Lake from Weir to Hackney Rd Bridge, Adelaide
Platform and language and version	Model was run under LINUX Ubuntu 10.04 LTS operating system. Input files should be usable with other operating systems (suitable executable files required) but this has not been tested.
Dependencies upon: i) other models and/or platforms (including version) and location ii) essential data and data sources and location	Model output visualisations were created using ARMS (CWR) and Matlab (Mathworks) No external data connections required.

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How was model used	*Parameterisation/Validation (if applicable; include time period of calibration/simulation)*
	    ○ Lake dynamics were validated using temperature and comparing against thermistor chain data from three locations
	
	Scenarios and outputs from various runs (indicate where these are stored)
	    ○ Various flow and temperature scenarios were simulated.
	    ○ Simulated parameters were velocity, temperature, salinity, tracer, algal population growth
	    ○ Passive tracers were simulated in each amenity flow.
	Details are provided in Goyder Institute Technical Report 14/26.
	
	Assumptions behind model (indicate where these are stored)
	    ○ Algal growth was simulated using a constant growth rate of 0.3/day representing ideal conditions.
	    ○ Lake extinction coefficient was assumed to be constant and is based on a single measurement
	    ○ Bathymetry for the section Frome Rd to Hackney Rd was estimated based on knowledge from boating and Google Earth imagery.
	Details are provided in Goyder Institute Technical Report 14/26.
	
	Limitations of model
	    ○ Model is unable to simulate the large natural inflow resulting from 95mm of rain beginning 13 Feb 2014
	    ○ Salinity validation revealed an unaccounted for source of salinity most likely ground water inflow.
	
	Peer review process (if applicable)
	    Reviewed by two external reviewers
	
	Extensibility of model (can it be run for different time periods)
	    ○ Input data covers the period of the trial from 11 Jan to 21 Feb 2014, but additional data could be added to extend the time covered
	Details are provided in Goyder Institute Technical Report 14/26.
	
	Goyder Institute Technical Report 14/26 is available at
	http://goyderinstitute.org/

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Specificity of data	Inflow related data were publically available and sourced from Water Data Services (http://wds.amlr.waterdata.com.au/Amlr.aspx). Weather data were sourced from NOAA (http://www.noaa.gov/) for the BOM site Kent Town, South Australia. Solar radiation data were from SA Water's weather station on Myponga Reservoir available from Rob Daly (SA Water) upon request
Datasets/data products produced	All outputs and model files are stored in a folder structure located on the SA Water server network '/home/rob/Documents/Torrens/Amenity Flow Trial 3'. For access contact Rob Daly (SA Water)
Other Information	
Publications (papers and technical reports)	Brookes JD (ed) (2012) River Torrens Water Quality Improvement Trial - Summer 2011-12, Goyder Institute for Water Research Technical Report Series No. 12/4

Brookes JD (ed) (2013) River Torrens Water Quality Improvement Trial - Summer 2012-13, Goyder Institute for Water Research Technical Report Series No. 13/16

Brookes, JD and Daly, R (2014) River Torrens Water Quality Improvement Trial - Summer 2013-14, Goyder Institute for Water Research Technical Report Series No. 14/26 |
| Collaborations and acknowledgements | |
| Keywords | ELCOM, Hydrodynamic model, Torrens Lake, Dilution, Algal growth |