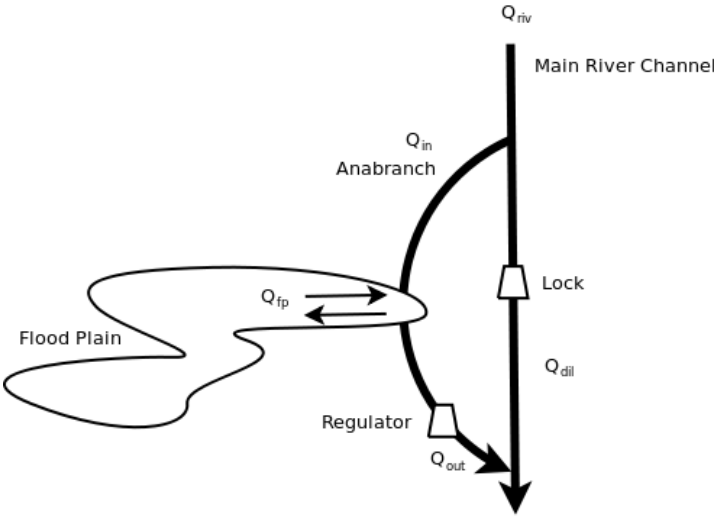


GOYDER INSTITUTE FOR WATER RESEARCH MODEL METADATA TEMPLATE

METADATA REQUIRED	DETAILS
Model Name and version	Black Water Risk Assessment Tool – Chowilla modification
Date of lodgement of Metadata Template. Name of Metadata Provider	August 2015 Dr Robert Daly, Rob.Daly@sawater.com.au Senior Scientist – Environment and Resource Services, SA Water T 08 7424 1033
Goyder Institute Project Number and Name	GOYDER INSTITUTE FOR WATER RESEARCH Project No. E.1.12 Science to inform operational decisions of major environmental infrastructure on the Chowilla Floodplain and other regulated floodplains in the SA River Murray: Stage 1.
Project Team	Project Leader: Todd Wallace, todd.wallace@adelaide.edu.au Dr Robert Daly, Rob.Daly@sawater.com.au
Creator/Developer	Robert Daly – Modified for anabranh wetlands (Chowilla)
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	<i>Where is the model archived? Available from contact person</i> The model is stored at SA Water. Dr Robert Daly, Rob.Daly@sawater.com.au Senior Scientist – Environment and Resource Services, SA Water T 8 7424 1033 http://river.sawater.sa.gov.au/teamsites/wer/Research%20Projects/GoyderArchive/E.1.12%20Blackwater%20Model/Black%20Water%20Risk%20Assessment%20Tool.zip <i>Is there a version of the model in active further development? Where is this active version located?</i> No.
IP or other permission requirements	*****REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT ***** Original Black Water Risk Assessment Tool Darren Baldwin Murray-Darling Freshwater Research Centre PO Box 991 Wodonga, Vic., 3689 AUSTRALIA +61 2 6024 9650 darren.baldwin@latrobe.edu.au

METADATA REQUIRED	DETAILS
Licences associated with model and/or dependencies	<p>** REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT ***</p> <p>There are no licenses associated with this model.</p> <p>The original Blackwater Model available from Darren Baldwin (details above). The modified model is freely available from SA Water. Contact: Robert Daly (details under 'Owner')</p>
Confidentiality agreements associated with model and/or dependencies	None
Brief outline of model	<p>The original Black Water Risk Assessment Tool spreadsheet was modified to be applicable to anabranch wetlands such as Chowilla or Katarpko Creek. These systems are characterised by filling during flood phase of hydrograph and draining during recession phase.</p>  <p>The model estimates quantities of DOC released into flood water via leeching from plant litter and the corresponding reduction in dissolved oxygen. The model also simulates the dilution that occurs at the point where the wetland water flows back into the anabranch as well as main river channel. Estimates for the downstream dissolved oxygen and organic carbon concentrations are calculated.</p> <p>Details are available in: Goyder Institute for Water Research Technical Report Series No. 15/18 Available at: http://goyderinstitute.org/</p>
Area/region covered	River Murray, Chowilla
Platform and language and version	Excel spreadsheet (Microsoft Office 2010)

METADATA REQUIRED	DETAILS
Dependencies upon: <ul style="list-style-type: none"> i) other models and/or platforms (including version) and location ii) essential data and data sources and location 	Flood inundation and recession hydrograph time series. Estimate of floodplain litter load.
How was model used	<p><i>Parameterisation/Validation (if applicable; include time period of calibration/simulation)</i></p> <ul style="list-style-type: none"> ○ 12/09/2014-11/01/2015 <p><i>Scenarios and outputs from various runs (indicate where these are stored)</i></p> <ul style="list-style-type: none"> ○ Chowilla regulator commissioning test was simulated and compared against observed data ○ A generic spreadsheet for future inundations was created <p><i>Assumptions behind model</i></p> <ul style="list-style-type: none"> ○ The model has many internal parameters for DOC and DO dynamics such as relative composition of litter (leaves, bark, twigs & grass) with corresponding leaching rates and yields; these were unchanged from the original version (Whitworth 2013). ○ Floodplain considered a fully mixed system ○ Complete mixing upon dilution is assumed <p><i>Limitations of model</i></p> <ul style="list-style-type: none"> ○ Annabranch-floodplain exchange is important during periods of constant water levels. An estimate for one particular event was included but may change with different systems or hydrographs. <p><i>Extensibility of model (can it be run for different time periods)</i></p> <ul style="list-style-type: none"> ○ Provided hydrograph and litter load data are available the model is suitable for any time period. <p>Goyder Institute Technical Report 15/18 is available at http://goyderinstitute.org/</p>
Specificity of data	For this test <ul style="list-style-type: none"> ○ Inundation modelling was undertaken by Andrew Keough (MBDA) using both the 1D MIKE11 model and the 1D-2D MIKE FLOOD model. ○ Survey of floodplain litter load by Todd Wallace (Wallace 2015).
Datasets/data products produced	Trial dataset, observed data & model validation included in zip archive with model spreadsheet. Details provided in 'Model Location'.
Other Information	

METADATA REQUIRED	DETAILS
Publications (papers and technical reports)	<p>Whitworth KL, Baldwin DS and Keogh A (2013) Improving the capacity to manage blackwater in the southern Murray-Darling Basin. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, June 2013.</p> <p>Wallace, T.A., Furst, D., Upadhyay, S and Daly, R. 2015, Science to inform operational decisions of major environmental infrastructure on the Chowilla Floodplain and other regulated floodplains in the SA River Murray, Goyder Institute for Water Research Technical Report Series. No. 15/18, Adelaide, South Australia.</p> <p>Goyder Institute Technical Report 15/18 is available at http://goyderinstitute.org/</p>
Collaborations and acknowledgements	
Keywords	River Murray, Chowilla, black water, dissolved oxygen, water quality model