



Book of abstracts



**NCR DAYS 2018**  
The future river  
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# The Future River

NCR DAYS 2018 | Delft, February 8-9



Ymkje Huismans, Koen D. Berends,  
Iris Niesten, Erik Mosselman (eds.)

NCR publication 42-2018

Netherlands  
Centre for  
River studies **NCR**

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Deltares  
Boussinesqweg 1  
2629 HV Delft  
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The Netherlands

telephone: +31 88 335 82 73  
fax: +31 88 335 85 82  
e-mail: [info@deltares.nl](mailto:info@deltares.nl)  
www: <https://www.deltares.nl>

**Contact NCR**

ir. K.D. Berends (Programme Secretary)  
Netherlands Centre for River Studies  
c/o University of Twente  
P.O. box 217  
7500 AE Enschede  
The Netherlands

telephone: +31 6 21 28 74 61  
e-mail: [secretary@ncr-web.org](mailto:secretary@ncr-web.org)  
www: <http://www.ncr-web.org>

**Cite as:** Huismans, Y., Berends, K.D., Niesten, I., Mosselman, E. (2018), *The future river: NCR DAYS 2018 Proceedings*. Netherland Centre for River Studies publication 42-2018

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# Usefulness of storylines to increase the accessibility and transparency of RiverCare knowledge

Juliette Cortes Arevalo<sup>1\*</sup>, A. Sools<sup>2</sup>, L.N.H. Verbrugge<sup>1</sup>, M. Brugnach<sup>1</sup>, R.P. van Denderen<sup>1</sup>, J.H.J. Candel<sup>3</sup>, J.E.W.C. van Gemert-Pijnen<sup>2</sup> and S.J.M.H. Hulscher<sup>1</sup>.

<sup>a</sup> Department of Water Engineering and Management, University of Twente

<sup>b</sup> Department of Psychology, Health, and Technology, University of Twente, P.O. Box 217, 7500 AE, Enschede, the Netherlands

<sup>c</sup> Soil Geography and Landscape group, Wageningen University, P.O. Box 47, 6700AA Wageningen, The Netherlands

**Keywords** — science communication, river management, knowledge-base

## Introduction

Communication and outreach is a fundamental concern for river research. River management increasingly requires adaptive, collaborative and integrated approaches. Such approaches challenge the way knowledge is produced and communicated between the actors and disciplines involved (Dieperink et al., 2016). Increasing awareness and shared understanding between researchers and practitioners start by acknowledging both technical and experiential knowledge (Ingram et al., 2015). Modelling approaches play a central role in research for innovation or understanding. However, the models and their outputs need to be better communicated to be useful for multi-disciplinary researchers and practitioners. On the other side, practitioners are concerned with the temporal and spatial scales of the problem at hand, possible solutions, related stakes and benefits according to their perspective (Acreman, 2005). Therefore, river researchers are increasingly required to improve their communication efforts, both for a multi-disciplinary technical and management-driven audience.

As part of the RiverCare research programme, we explore the use of online storylines as main component of a knowledge-base (KB) that is under design. The storylines include “*distinctive narrative elements such as questions and answers, images of the research context and interactive charts to effectively communicate river research outcomes in a way that is captivating and easily understood by multi-disciplinary water professionals.*” (Cortes Arevalo et al., 2017) The aim of the KB is to communicate the context of the programme, its projects, outputs and updates while linking to existing platforms to reach a wide water professional audience. Our storyline

methodology involves a co-creation approach to increase the accessibility and transparency of RiverCare knowledge (research context, collected datasets, modelling outputs and publications). The perceived accessibility includes the availability of scientific outputs but also the perceived usefulness to allow the user interaction with the knowledge and retrieve the potential relevant (useful) information for own work or interest (Zulkafli et al., 2017). Moreover, transparency regarding the methodological assumptions and limitations of the outputs is needed to place the research in context (Brugnach and Pahl-Wostl, 2008).

## Co-creation of storylines

Narrative approaches are used in science communication to increase user engagement and ease of understanding (Dahlstrom, 2014). We used the framework of Murray and Sools (2015) to create our storylines. This methodology allows to outline the key story elements, highlight benefits and limitations as well as the central problem to be solved. We followed a five-step approach to co-create and integrate the storylines into the RiverCare KB:

1. Define the storyline structure based on design considerations as identified from interviews with potential users (Cortes Arevalo et al., 2017).
2. Co-create an outline of the storyline with the RiverCare researchers.
3. Create maps and visualizations to communicate both the context and key outputs of the research.
4. Incorporate the storyline into the KB and review its content with a multidisciplinary group of RiverCare researchers and practitioners.
5. Evaluate the usability of storylines via online feedback and face-to-face workshops with potential users.

\* Corresponding author

Email address: [y.j.cortesarevalo@utwente.nl](mailto:y.j.cortesarevalo@utwente.nl)

**Usefulness of the storylines**

To evaluate the perceived usefulness of the online storylines, examples were created from RiverCare results in environmental management, geomorphology and river dynamics (see one of the examples in Fig. 1). Two storylines were evaluated by a group of 10 master students in Water Systems studies and members of the RiverCare programme board, as part of preliminary research (See Fig. 2).



Figure 1. Storyline “How do side channels develop?” based on published work by Van Denderen et al., (2017).

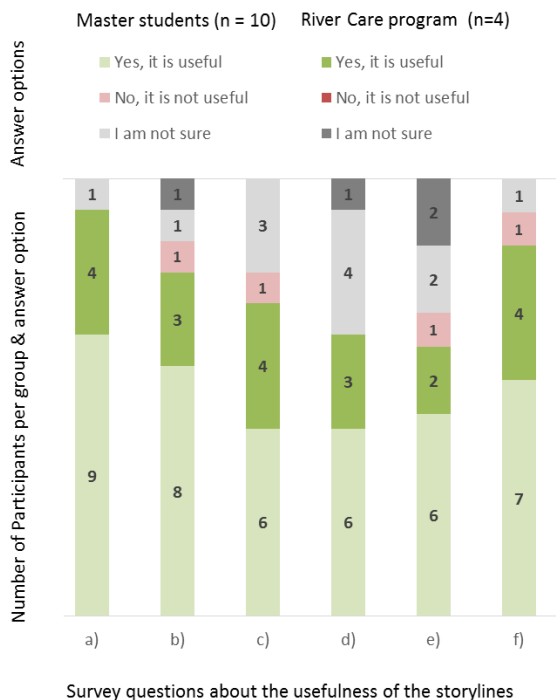


Figure 2. Results for the storyline “How do side channels develop?”. Survey questions to evaluate the usefulness of storyline examples included :

- a) Explain why the study was done
- b) Give examples about how results can be useful
- c) Share it with other colleagues or friends interested in river management
- d) Revisit it anytime I would like to explain or understand about this topic
- e) Trigger my interest to read the paper
- f) Use storylines as communication method for my own study or project

Fig. 2 shows first results. Participants positively evaluated the storyline mainly referring to its ability to explain why the study was done and its potential use as communication method for its own project.

**Next steps**

To further evaluate the storyline usefulness for a wider scientific and practitioner audience a series of workshops is being prepared. The first of these workshops will be held at the NCR days. Come and join us to discuss in sub-groups: the take home message from the results presented in the storyline; and co-create your own storyline on the potential usefulness of RiverCare knowledge for your work.

**Acknowledgements**

RiverCare is funded by STW, part of the Dutch Organization for Scientific Research under grant number P12-P14 (Perspective Programme).

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