

RiverCare Newsletter

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Preface

In RiverCare (2014-2019), we recognize the importance as well as the challenges to join efforts in a multi-disciplinary program. In this newsletter, prepared twice per year by researchers, we share our efforts to stimulate collaboration and progress with the communication tools. We give an overview of collected datasets. We share insights from the last NCR days and update you about our outreach activities.

We hope you enjoy this newsletter, contact us to get additional information and share this edition with your colleagues.

Joining efforts in the RiverCare day

On June 22th/2017, the fifth RiverCare day was held at the University of Twente in Enschede

By Pepijn van Denderen

Twice per year researchers and supervisors meet with an overarching theme. This edition's theme addressed feedback from the last mid-term review and aimed to boost collaboration and communication efforts.

- The day started with a visual update from each project. In one slide and three minutes presentation, researchers illustrated the progress of the eight projects and their main outcomes since the last RiverCare day.

- Next, results from a collaboration survey between researchers and supervisors were presented. Collaborations cost time and alignment of expectations. However, benefits are not only for integration and joint publications but also to have fun and complement each other's expertise!

“Researchers reported a total of 29 collaborations, 10 of which were newly established within the last year (Fig 1a).”

- The morning finished with speed dates between researchers. According to intended collaborations, three dates were set up to agree or coordinate expected outputs of the collaboration (Fig 1b).

- In the afternoon, researchers attended the dedicated workshops about the communication tools (See Boxes). The day ended with a nice BBQ dinner.

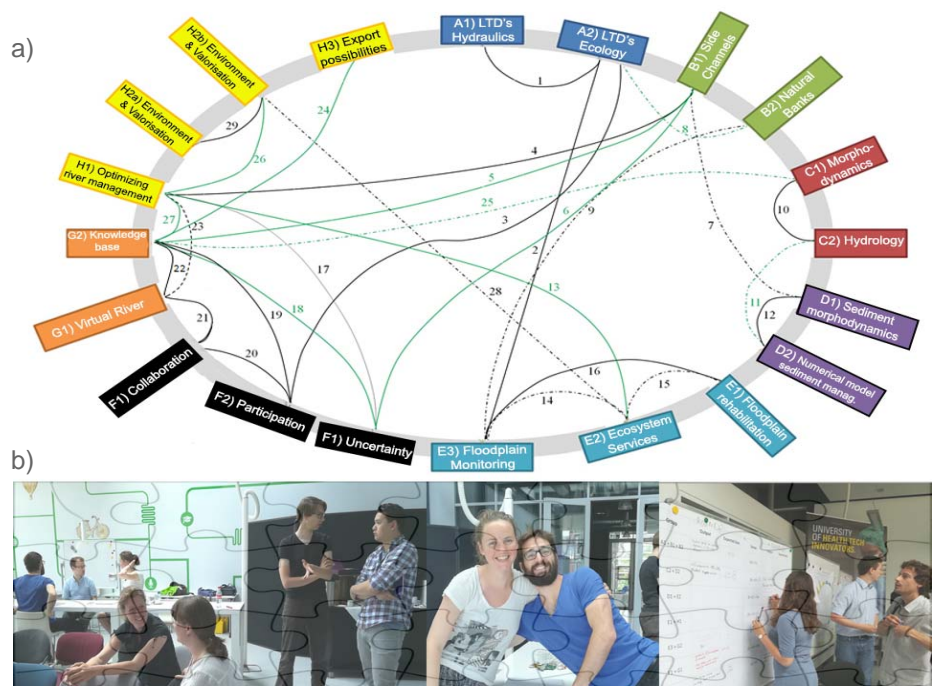


Fig. 1. a) RiverCare day collaborations reported in May/2016 (black line) and newly reported collaborations (green line). Dotted lines indicate need for coordination; b) Snapshots of speed dates and researchers reporting expected outputs.

Virtual River workshop

By Robert Jan den Haan

- Developed meta-goal and scope of the gaming environment were explained based on extensive interview analysis.
- Sneak preview of serious gaming environment using Tygron game engine was shown.
- Interactive discussion with researchers was held to explore if 'rule of thumbs' on their results could be formulated.

Knowledge-base workshop

By Juliette Cortes

- Goal and progress were introduced from detailed interview analysis and dissemination days feedback.
- Interactive presentation of an storyline about one project results combining communication needs and narrative elements.
- Researchers suggested to prepare examples for other type of results, define target audience and evaluate benefits.

Research Spotlights

As a programme, we study processes driving eco-morphological changes to:

- Predict mid-term consequences of river measures such the ones implemented in the Room for the River.
- Improve the design and management of such measures to reduce maintenance needs and increase benefits in biodiversity and eco-system services.

To that end, researchers in **geomorphology** and **hydraulic engineering**, **ecology** and **environmental management** are collecting field and experimental datasets in the following locations (See Fig 2). The list below gives an overview per project.

“We are documenting our datasets in Geonetwork to make them findable by researchers and river management organizations!”



Fig. 2. Location of the study areas.

LOCATION IN Fig 2 | CASE STUDY PROJECTS Field and experimental collected datasets

A: Optimizing longitudinal training dam (LTD) design

1 Location at the River Waal between Tiel and Ophemert	A1. Hydraulics and morphology of LTDs	Scale model experiments and field data analysis for hydraulic and morphodynamic implications of LTDs.
	A2. Ecology of LTDs	Field surveys of ecological conditions and monitoring data on fish, crustaceans and molluscs.

B: Side channels and erosion of natural banks

2 Side channels at a) Bakenhof, b) Klompenwaard and c) Gameren locations	B1. Side channels	Field surveys to analyze the grain size distribution and bed levels at side channels locations.
3 Meuse river near Boxmeer	B2. Natural banks	Field surveys to analyze hydraulic loads from both ships and floods, bank erosion rates, river bathymetries and bank vegetation distribution.

C: Regional River Systems

4 Fluvial deposits in stream valleys: a) Drentsche Aa, b) Overijsselse Vecht and c) Dommel	C1. Morphodynamics	Field surveys for stream planform evolution during the Holocene.
5 Tributaries a) Leerinkbeek , b) Ramsbeek, c) Tungelroysebeek and d) Tongelreep	C2. Hydrology	No field or experimental datasets are collected. Analysis of historical discharge and water level time series.

D: Sediment nourishment

Application to the Dutch river interventions	D1. Mixed-sediment river morphodynamics	Data from existing and new laboratory experiments are used to study physical mechanisms under ill-posed mathematical conditions.
	D2. Numerical modelling sediment management	No field or experimental datasets are collected. Numerical modelling of flood waves and longitudinal trend of the river profile.

E: Ecosystem services of floodplain monitoring and rehabilitation

6 Floodplains a) Duursche Waarden (Ijssel river), b) Millinger & c) Erlecomsewaard at the Waal River	E1. Floodplain rehabilitation	Field survey about fundamental relationships between plant traits and (a)biotic conditions on 30 small plots (circa 1.0-1.5m2)
River Nederrijn-Lek, Ijssel and Waal	E2. Ecosystem services	Analysis of biomass production based on existing landscape classification systems.
7 a) Breemwaard Floodplain in the river Waal b) 4 Multiparameters sensors locations	E3. Floodplain Monitoring	a) Vegetation mapping based on remote sensing data acquired with mobile laser scanning, unmanned airborne vehicles and satellites. b) Continuous monitoring of abiotic conditions of floodplain waterbodies

LOCATION IN Fig 2| CASE STUDY

PROJECTS

Field and experimental collected datasets

F: River governance: uncertainties, participation and rehabilitation

8 Application to the Dutch river interventions Sint-Andries location at the Waal River	F1. Uncertainty ↗	Idealised and existing hydrodynamic models/data to analyse model performance and uncertainties.
1 Location at the Waal River between Tiel and Ophemert	F2. Public perception and participation ↗	Interview and survey data to inform participatory monitoring.
9 a) Municipalities in the floodplain area of the WaalWeelde program and b) floodplain area of the Rijnwaardense Uiterwaarden	F3. Collaboration ↗	Social network analysis at location 10a) and interviews at location 10b).

G: Communication programme outcome

Representatives of organizations of Dutch river and floodplain maintenance	G1. Virtual River ↗	Interviews and workshops with potential end-users.
Members or colleagues of Ecosystem Services and River Governance committees	G2. Knowledge-base ↗	Interviews and workshops with potential end-users.

Project H: Self supporting hydrosystems and valorisation

Application to the Dutch river restoration interventions	H1. Optimising river manag. ↗	No field or experimental datasets are collected. Existing spatial and hydrodynamic models/data to quantify biodiversity and ecosystem services.
Policy review about Self Supporting River Systems (ex durante evaluation)	H2. Wealthy Waal: environment and valorization: 2-1 ↗ & 2-2 ↗	Interviews and workshops with stakeholders.
Dutch delta technology subsector	H3 Wealthy Waal: export possibilities ↗	Workshops with stakeholders.

2017 Netherlands Centre for River studies (NCR) days

From 1st to 3th of February/ 2017 at Wageningen University & Research (WUR).

By Timo de Ruijscher

This was the first time that the gathering took place in the winter season. That turned out well according to the number of abstracts and about 100 participants (see snapshots in Fig. 3 and the [book of abstracts](#) ↗).

- During the two days, 24 oral presentations and 22 posters were presented to the public under the overarching theme 'From Catchment to Delta', covering morphology, (eco)hydraulics and river management.

“ From all contributions, 6 oral and 5 poster presentations were delivered by RiverCare researchers. One of them took home the traditional 'poster prize':
Victor Chavarrias (Project D1)! ”

- The afternoon before the NCR days, a field trip was organized with focus on the hydrogeology in the Nederrijn region. The enthusiasm of organizers (Roel Dijkema and Jasper Candel) triggered numerous questions from participants!

- In between the conference sessions, there was time to visit the [Krajenhoff van de Leur Laboratory for Water and Sediment Dynamics](#) (↗) and the [Netherlands Centre for Luminescence dating](#) (↗), led by prof.dr. Ton Hoitink and prof.dr. Jakob Wallinga, respectively.

For the social part of the program, a dinner was held at hotel 'De Wereld', which is famous as historic location of the surrender of the German occupation forces (although this might not be the place of the actual signing of the paperwork). After the drinks and the dinner, with enough time for social contacts, there was only one thing left to do: the traditional NCR pub quiz. **These NCR days were a great success and we are looking forward to the next edition in February 2018!**



Fig. 3. Snapshots of the NCR days: Welcoming and Posters presentations.

- Spread out over the days, four key note lectures were delivered. Prof.dr. Huub Reijnders (WUR) introduced the audience to water related research in Wageningen, dr. Kim Cohen (Utrecht University) was so kind as to replace dr. Liviu Giosan on a talk on the Anthropocene in the Netherlands. Finally, both prof.dr. Stuart Lane (Université de Lausanne) and dr. Victor Bense (WUR) delivered a talk stressing the importance of groundwater for the river community, although from a different point of view.

Outreach

With input from Wessel Ganzevoort & Robert Jan den Haan

Under the umbrella of the Netherlands Centre for River studies (NCR), our communication strategy includes not only the knowledge-base and the virtual river tools. The strategy also includes presence at research conferences, a multimedia product combining an interactive menu and promotional videos, and news articles at water related platforms.

Presence at international conferences

RiverCare made presence at international conferences by co-convening sessions and presenting in the following events:

■ **European Geoscience Union - EGU 2017 (Austria)** - Hans Midelkoop (Supervisor) co-convened a session with a total of 6 presentation and 9 posters about Sustainable management and river deltas under pressure (🔗).

At specific sessions, Tjitske Geertsema (Project C2) presented results about back water development of woody debris (🔗). Juliette Cortes (Project G2) presented a preliminary example of the storyline (🔗) and the communication strategy of RiverCare (🔗).

■ **World's Large Rivers Conference (India):** Menno Straatsma (Project H1) made presence at this triennial event by presenting the RiverScape methodology to assess seven flood reduction intervention types (🔗).

■ **Symposium structural and functional relationships in plant ecology (UK)** Valesca Harezlak (Project E1) presented her poster about plant traits as floodplain management aid (🔗) and exchanged with researchers in plant ecology.

■ **International Symposium on Society and Resource Management (Sweden):** While Jan Fliervoet (Project F3) presented his work on the challenges of collaboration in maintaining multi-functional floodplain (🔗); Wessel Ganzevoort and Laura Verbrugge (Project F2) discussed preliminary results of the second round of perception data in the longitudinal dams case study (🔗). The room was packed, and the session provided many examples of the importance of taking local views and motivations into account in environmental governance.

Multimedia products

To increase the exposure of RiverCare abroad, we are recording four movies, each released approx. every six months.

Interactive menu: In parallel to the recording of the four RiverCare movies, we are developing an interactive menu around the movies. Goal of the interactive menu is to:

- (1) Provide a portal where all four movies can be accessed; and
- (2) Serve as a business card for each individual RiverCare project.

“The second objective focuses on showing all RiverCare projects related to the theme of each movie, present a first glance of the project and provide a link to the project's knowledge-base page.”

RiverCare video #2: The floodplain: We are planning to launch this interactive menu in combination with the second RiverCare movie, which is based around the floodplain. You can expect to see Frank (Project A2), Gonzalo (Project B2) and Wimala (Project E3) take the stage and star in this movie!

Currently, the final adjustments to the script are made and the first recording sessions have taken place (Fig. 4). Coming to a theatre near you this October.



Fig. 4. Sneak preview of recording session

News articles

Sinuosity in peat-filled low energy valley systems: H2O (🔗 in Dutch) and **Resource from Wageningen University** (🔗 in Dutch): Jasper Candel (Project C1) was featured both in the Waterboard and university magazine for his research at the Drentsche Aa valley.

Follow the pretty pebbles. - **TU Delft Stories of science** (🔗): Victor Chavarrias (Project D1) was featured for their laboratory experiments on important mechanisms for the modelling of mix-sediment river morphodynamics.

UPCOMING EVENTS FOR RIVERCARE

- July 17-21: 11th International Conference Fluvial Sedimentology, ICFS 2017, Calgary, (Canada)
- September 15-22: 10th Symposium on River, Coastal and Estuarine Morphodynamics RCEM 2017, (Trento-Padova, Italy)
- November 2-6: International Water Week AIWW (Amsterdam, Netherlands)
- February 8-9: NCR DAYS 2018 (Delft, The Netherlands)
- June 4-8: Integrative Sciences and Sustainable development of rivers 2018 (Lyon, France)

NCR WEBSITE

NCR website (<http://www.ncr-web.org/>) is being used to communicate the RiverCare activities.

NEXT ISSUE (DEC/2017):

Give us [here](#) your feedback about this Newsletter edition.

Do you have something to contribute to the RiverCare newsletter?

Let us know:

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