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# REHYDRATE - an international HELPING working group to REtrieve historical HYDRologic dATa and Estimates

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Historical hydrological observations are often stored in printed documents and volumes of archives worldwide. This makes them practically inaccessible and unusable for modern hydrological studies as well as puts them at risk of permanent loss due to the deterioration of their medium. In addition to the intrinsic value of rescuing past observations, having access to historical data is essential for understanding better the complexity and changes in the hydrological cycle and its extremes.

Several data rescue initiatives exist, but the efforts are highly fragmented in space and time. Current tools for data digitization include optical character recognition (OCR) software and manual transcription. The latter is often carried out through participatory citizen science projects. The use of OCR software is cheap and fast, but it still requires a considerable amount of manual work due to the diversity of the documents, and its accuracy is, to date, not always acceptable. Manual transcription is more accurate, but extremely resource-intensive. For these reasons, there is a general need for better and less costly methods for hydrological data rescue. New tools are becoming available, and new technologies are developing rapidly.

In response to these challenges, the REHYDRATE Working Group has been proposed as part of the IAHS HELPING Science for Water Solutions decade in summer 2023 (https://iahs.info/uploads/HELPING/WG%20Proposal%20REHYDRATE.pdf). The Working Group aims to connect scientists engaged in data rescue, fostering a collaborative community to exchange knowledge, experiences, and best practices in hydrological data rescue and digitization. The ultimate objective is to promote and facilitate hydrologic data digitization initiatives and to ensure their accessibility through open-access repositories.

Approximately 80 scientists from diverse geographical regions have joined the Working Group at the time of writing this abstract. Initial meetings were organized in late 2023, and the group is currently working towards its first short-term objective: conducting a comprehensive state-of-the-art assessment of methods, initiatives, and articles related to the digitization of historical hydrological data.

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