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Catchment Hydrology Explorer for Water Stewards (CatchX Platform)

Susana Almeida (1), Luis Velasquez (2), Mark Trigg (1), Wim Clymans (2), Suraje Dessai (1), Conor Linstead (3), Christopher Sampson (4), Andrew Smith (4), Richard Carter (5), Klaudia Schachtschneider (6), Christine Colvin (6), Hazel Culley (7), Jane Tanner (8), Denis Hughes (8), Ian Thornhill (2,9)

(1) University of Leeds, Leeds, United Kingdom (s.almeida@leeds.ac.uk), (2) Earthwatch, Oxford, United Kingdom, (3) WWF-UK, Woking, United Kingdom, (4) Fathom, Bristol, United Kingdom, (5) Richard Carter and Associates Ltd., Bedford, United Kingdom, (6) WWF-SA, South Africa, (7) Marks and Spencer plc, London, United Kingdom, (8) Rhodes University, South Africa, (9) Bath Spa University, Bath, United Kingdom

Sustainable management of water resources and associated freshwater ecosystems fundamentally requires datasets that describe water availability within a catchment. However, the required level of hydrological monitoring data (e.g. long term river gauging) is rarely available, in particular in developing countries, making the application of good water stewardship a significant challenge globally. While there has been widespread development of hydrological global datasets in recent years using satellite remote sensing and reanalysis products that offer potential solutions to these challenges, these datasets are not readily available or localised for non-experts, and even expert modellers face significant challenges in combining and selecting between the plethora of alternative datasets that have been released in recent years.

To address these issues, we introduce CatchX, a new global web-based catchment hydrological information platform that allows both scientists and non-expert users to easily access and visualise hydrological information for local-level water management and water stewardship in catchments. On the basis of the stated needs of platform end users, as identified from a worldwide survey of individuals from research organisations, government agencies, private industry, and NGO's, a key feature of CatchX is the ability to synthesise and pre-process gridded global hydrological datasets (e.g. precipitation, temperature, land cover) to catchment scales using a globally consistent set of catchment boundaries provided by the HydroSHEDS dataset. The CatchX platform will also provide estimates of annual/seasonal water balances and natural river flows (e.g. flow duration curves) for each catchment and sub-catchment, combining information from multiple global hydrological datasets and models to guide and inform decision-making about water resource management.

We will present a pilot version of the CatchX platform, and seek to gain feedback from the hydrological modelling and water management community on the initial platform design, along with key data and information needs to inform development of the finalised CatchX platform to be released in July 2018.