

Interactive comment on “A national-scale seasonal hydrological forecast system: development and evaluation over Britain” by Victoria A. Bell et al.

Anonymous Referee #1

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The manuscript illustrates the development and the evaluation of a national-scale seasonal hydrological forecast system over Britain. A high resolution hydrological model is used to estimate the initial conditions of a simple water balance model used to forecast regional seasonal flows over Britain. As meteorological forcings seasonal re-forecasts from GloSea5 and historical rainfall are used. As additional reference for verification flow persistence is used.

General: The paper is well written, the methodology and results are nicely presented and compared. The real value of this study is the combination of a high resolution hydrological model to estimate the initial conditions and a simple water balance model which fits better to the meteorological seasonal forecast input data than a high resolu-

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tion model. The regional WBM performance using observed data and the forecasting skill show promising results. The paper should be foreseen for publication in HESS after minor revisions.

Comments: The objective of the seasonal forecasting system is not really clear. From the introduction I assume the focus on flood forecasting, from the forecast variables, regional mean flow 1-month / 3-month ahead, I assume the focus on drought forecasting. Please specify! If the focus is flood forecasting, the relationship between regional mean flow and relevant flood properties (peak, volume,...) should be shown to demonstrate the potential flood predictability of the system. p 7 | 15: What is UK mean SAAR? Please add explanation / reference. p 12 | 6: do you use ensemble mean of GloSea5 / historical rainfall 1-month / 3-month ahead as input for WBM or do you use the ensemble mean of the WBM seasonal flow forecasts? What is the difference in skill between the two ensemble mean forecasts (rainfall ensemble mean as input vs. flow ensemble mean)?

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