wflow Newsletter, June 2021

Dear user,

In this spring edition of the wflow newsletter, you'll find news of our latest developments in wflow and other highlights.

Wflow in Julia
Computational performance of distributed physically-based hydrological models, such as wflow, as always been a challenge with the drive towards higher resolutions and larger model domains. This led to Deltares developing the latest versions of wflow in the Julia programming language. This has resulted in improved computation times by two- or three-fold and allows Deltares to explore parallelization of the code in the search for additional improvements. The new wflow since 2021 is available with the following concepts:

- Wflow-sbm
- Wflow-hbv
- Wflow-sediment

The code of the latest wflow Julia version is available directly from our GITHUB.

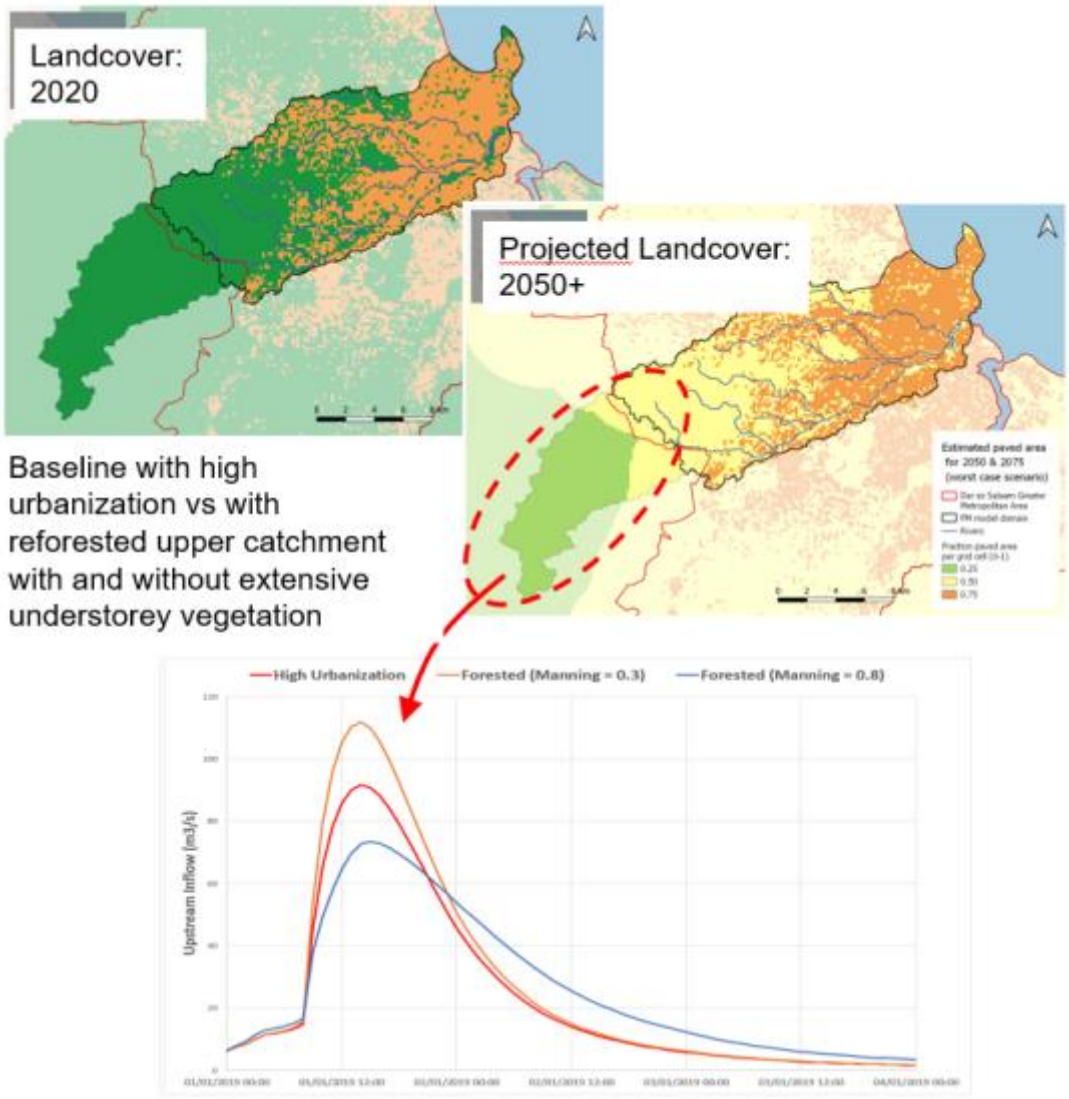
The new wflow julia documentation is available HERE. And the Windows OS version of the executable of the wflow Julia version is available directly from Deltares software download portal. The previous wflow version in PCRaster Python language remains available to users, though we do not envisage any further developments of wflow in PCRaster Python but bug fixes may be possible. If you have existing operational models in the wflow PCRaster Python framework and you want to look into updating the software then let us know.

A LINUX OS version of wflow.jl is also available upon request.

If you want to find out more about wflow in Julia contact us at wflow@deltares.nl.

Dar es Salaam - Wflow for testing nature based solutions to flooding problems
In the coming years cities will face increasing flooding problems as populations grow and urban sprawl increases, with its attendant increase in stormwater runoff. This is exacerbated as increased air temperatures are expected to result in increased rainfall intensities. This is especially pertinent in Dar es Salaam, which is expected to grow rapidly, becoming a megacity by 2030 increasing the already severe flood risk. To help define appropriate flood risk measures, Deltares applied wflow to simulate the change in upstream runoff and effective rainfall under different nature-based solutions. This has helped us better understand how wflow parameters can be manipulated to reflect changes in vegetation cover (i.e. tree storage, soil infiltration and surface roughness). Particularly for the upper catchment of the Msimbazi river, it was clear that increased canopy, stem storage and soil infiltration had little effect given the intensity of the rainstorms experienced and that higher surface roughness values (replicating dense understory vegetation) seemed to be the key factor in reducing runoff.

If you want to find out more about the application of wflow for nature based solutions contact us at wflow@deltares.nl.



Other news
SAVE THE DATE: The International Delft Software Days: wflow user day is scheduled for: **Wednesday 17th November 2021**. More news will follow closer to the date.

If you have any other questions or you just want to let us know what applications you are using wflow for, then let us know at wflow@deltares.nl.

Yours,
The wflow team @ Deltares
