

Project: **1202**

Project title: **Modelling the impact of global change on the terrestrial biosphere with LPJ-GUESS**

Principal investigator: **Matthew Forrest**

Report period: **2020-11-01 to 2021-08-31**

## **Status**

Unfortunately, I have thus far unable to use my requested resources for 2021. This is extremely regrettable and I can only apologise. However, this has occurred due to circumstances outside of my control and has been for two reasons. Firstly, the ISIMIP3 climate forcing datasets were found to have been affected by a bug in the bias-adjustment procedure which caused discontinuities in the time series. For details, please see here the latest few entries here:

<https://www.isimip.org/gettingstarted/input-data-changelog/>

The ISIMIP3b (future scenario) climate forcing data has been replaced although I am still waiting for a collaborator to finish preparing the data for LPJ-GUESS input. Approximately 50% of the ISIMIP3b is available (already 1.2Tb stored on /work/bb12020). The last I heard from this colleague is that they are waiting for rest the data to be made available following another pre-processing step. The issue with ISIMIP3a (present day) data is not yet resolved.

The second reason is that LPJ-GUESS v4.1 has been delayed and the final version is not yet released. A serious bug concerning the ability of the plants to store nitrogen was discovered earlier this year and fixed in late April. The follow up retuning, some of which concerns the BLAZE fire model, is ongoing. However, I am assured that the final version is “close”. I can obtain confirmation of the delay from the relevant parties if required.

Due to those two circumstances, I did not commence with any simulations. Given the broad usage of ISIMIP simulations and the large computational requirements of these runs, it didn't seem wise spend any resources producing simulations with bugged input data and an untuned model version.

## **Outlook**

It is not entirely clear when these bottlenecks will be resolved, but by the end of the year seems reasonably safe estimate. I therefore resubmit my entire request from 2021 for 2022, the particulars haven't changed, just the timing.

I can only offer my sincere apologies for the unused resources that I was granted for this year to date. Since I am almost certainly not going to be able to use my Q3 compute time and possibly not my Q4 compute time, I would have no objection to the remainder of my compute time for this year being made available for projects better able to use it.