CURRENT AND FUTURE HEAT STRESS IN PIGS

UGANDA MAPBOOK

CIAT
International Center for Tropical Agriculture
Since 1967 *Science to cultivate change*

CGIAR
RESEARCH PROGRAM ON
Livestock

ILRI
INTERNATIONAL
LIVESTOCK RESEARCH
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ACKNOWLEDGEMENTS

DISCLAIMER

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PROJECT DESCRIPTION

In 2018, a team from CIAT and ILRI working in the CGIAR Research Program on Livestock set out to develop a method for mapping current and future heat stress in livestock species, as proposed by IOWA State University, August 2002 for grow-finish swine - the mapping was implemented in R version 3.4.3 "Kite-Eating Tree" (R Core Team, 2017). We used both temperature and relative humidity datasets, and identified areas with different heat stress levels i.e. none, alert, danger and emergency for both current and future climate conditions. The results presented in this map book highlights how spatial analysis can be a valuable tool for mapping areas where pigs are exposed to and at-risk of heat stress as Uganda prepares for impeding impacts of climate change and inform terms of agricultural extension and policy.
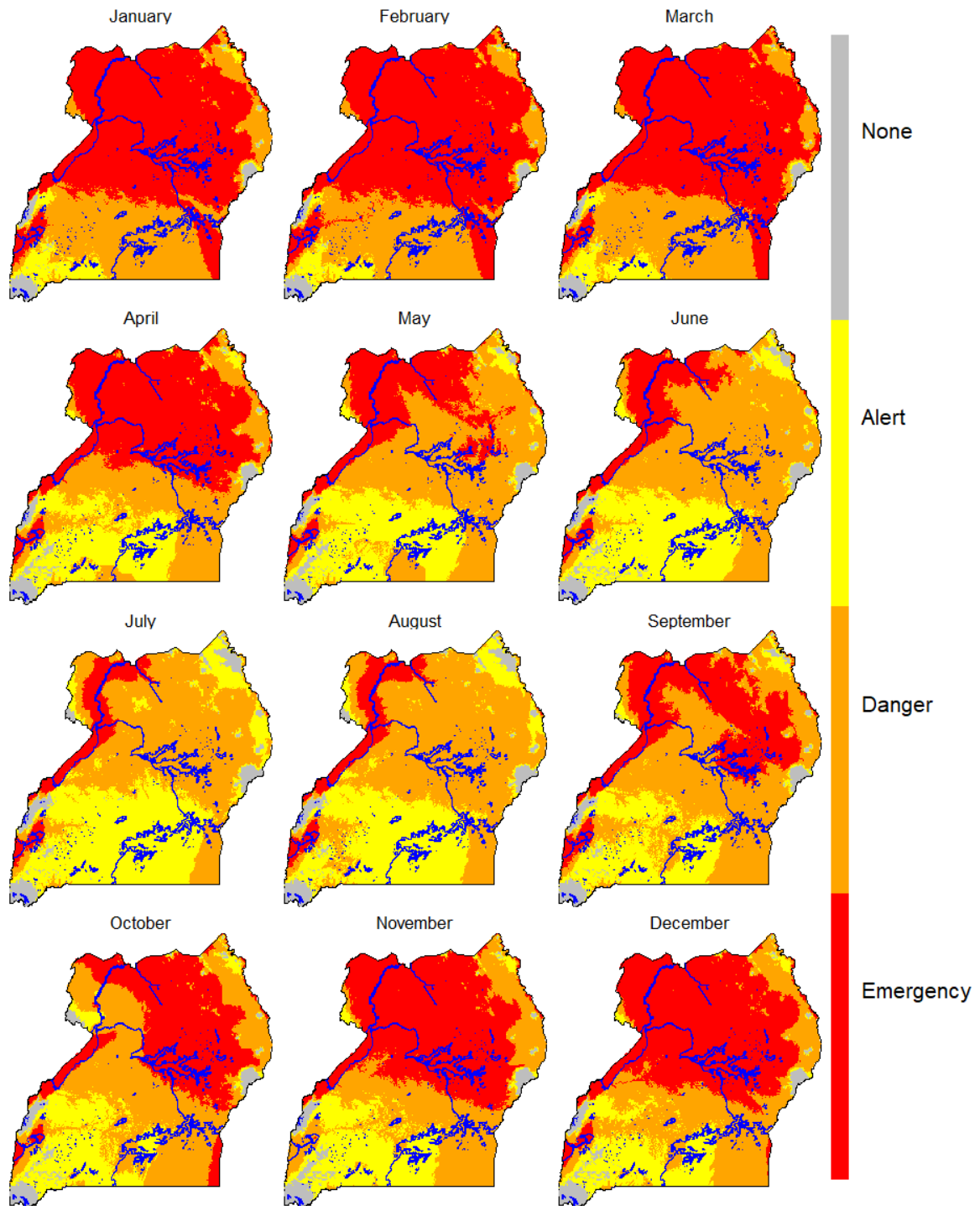
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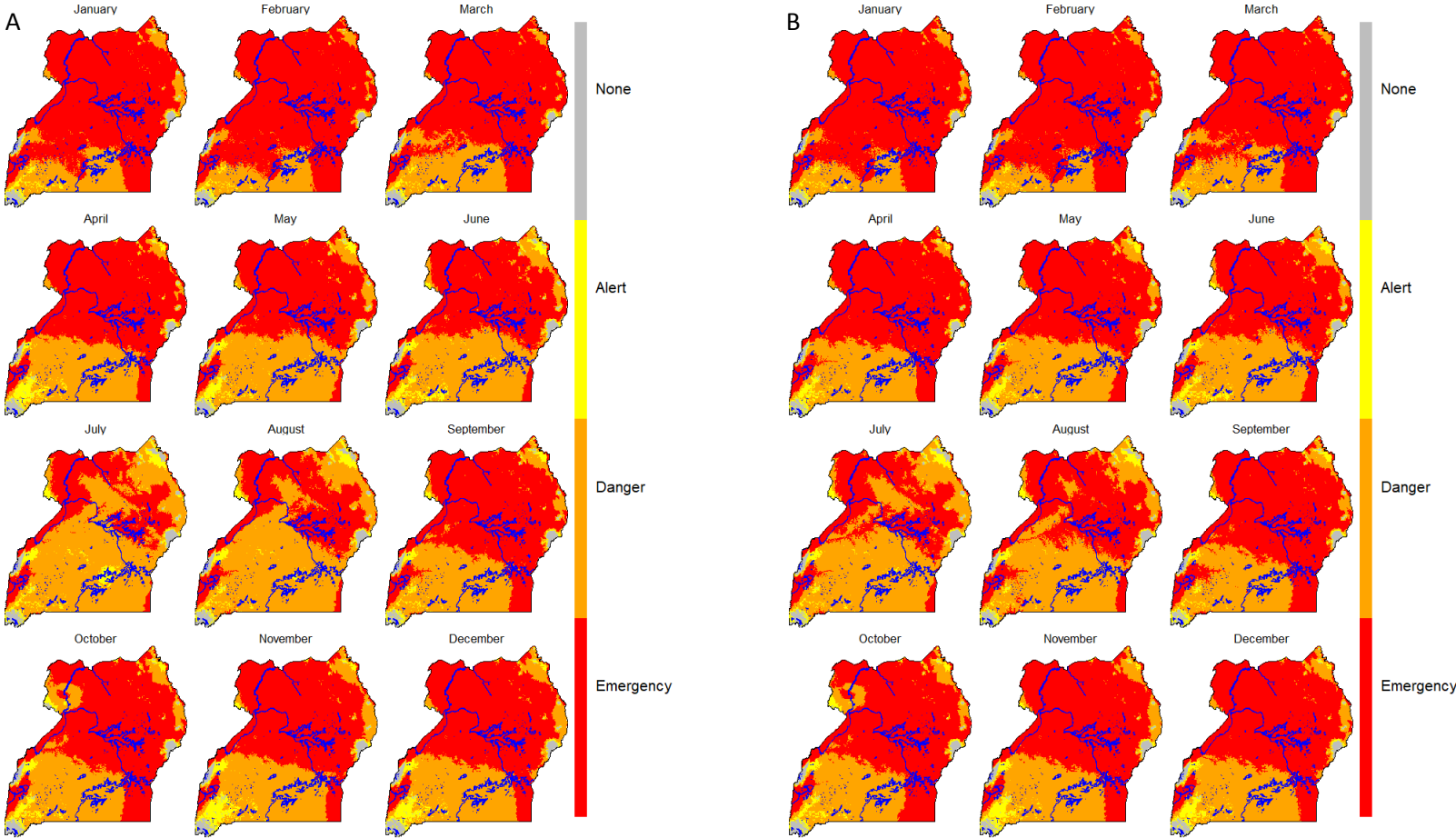
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Figure 2 Future heat stress; RCP: 2.6; Period: 2030s (A) & 2050s (B), Blue colour indicates water bodies
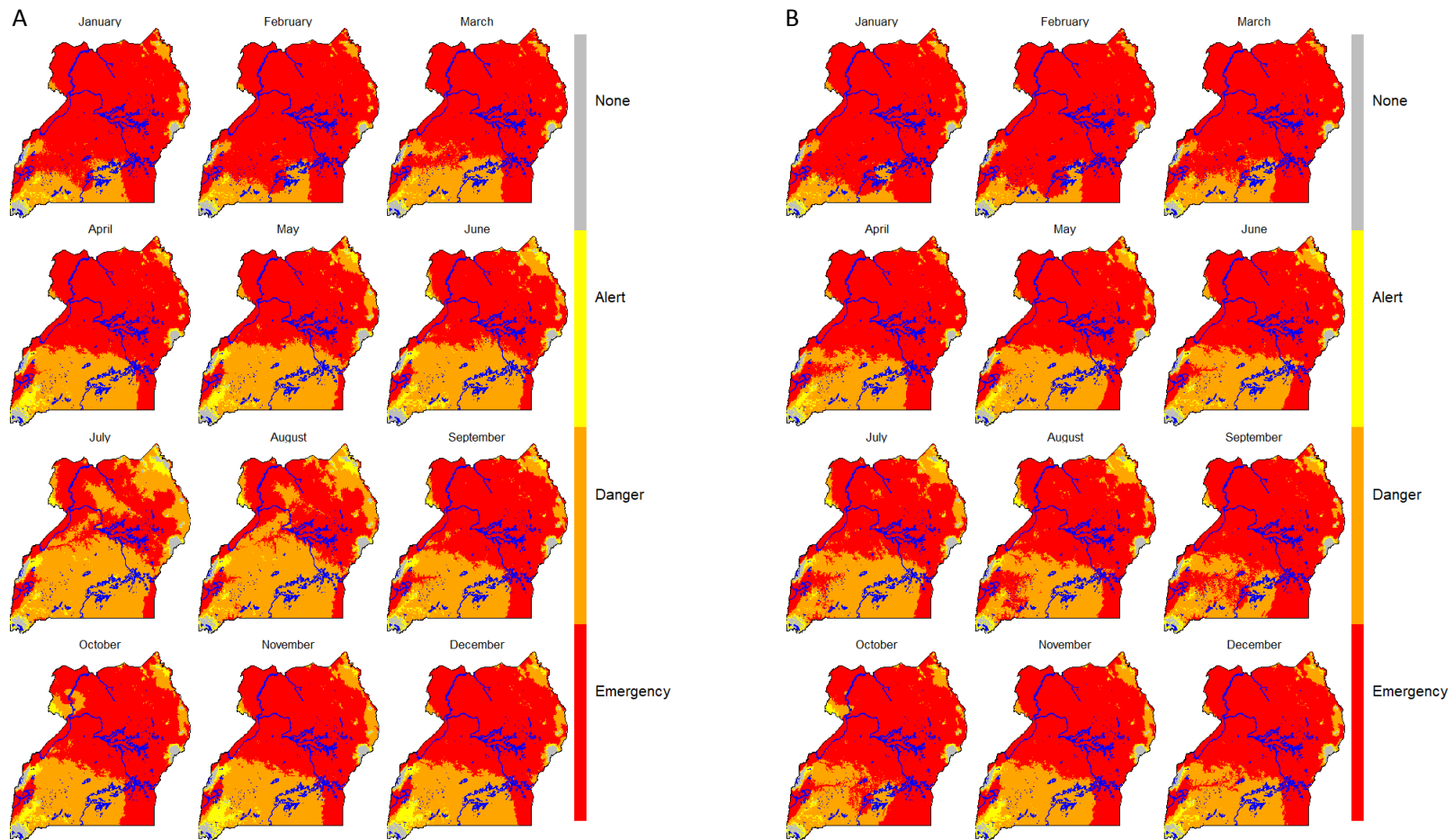
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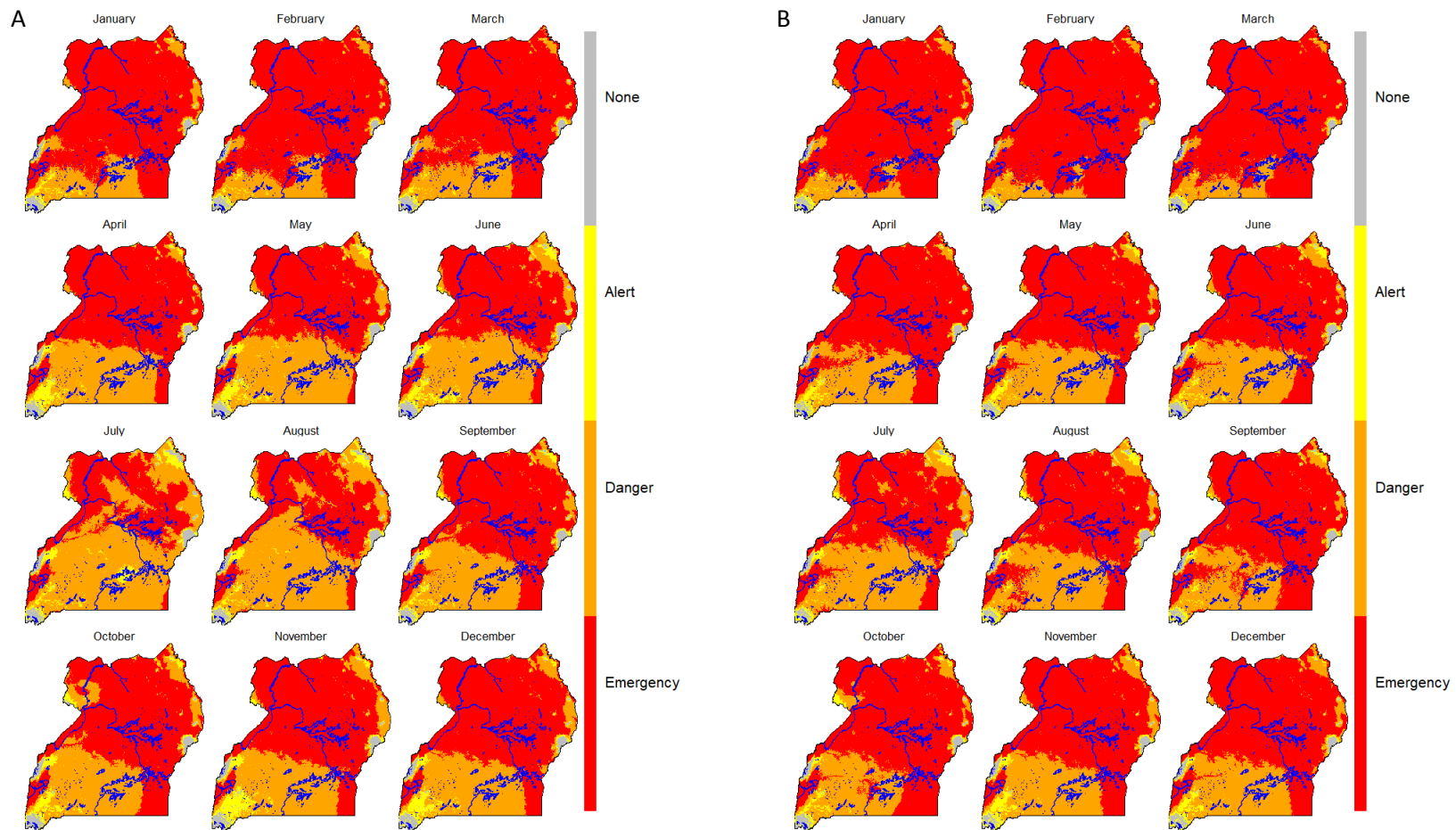
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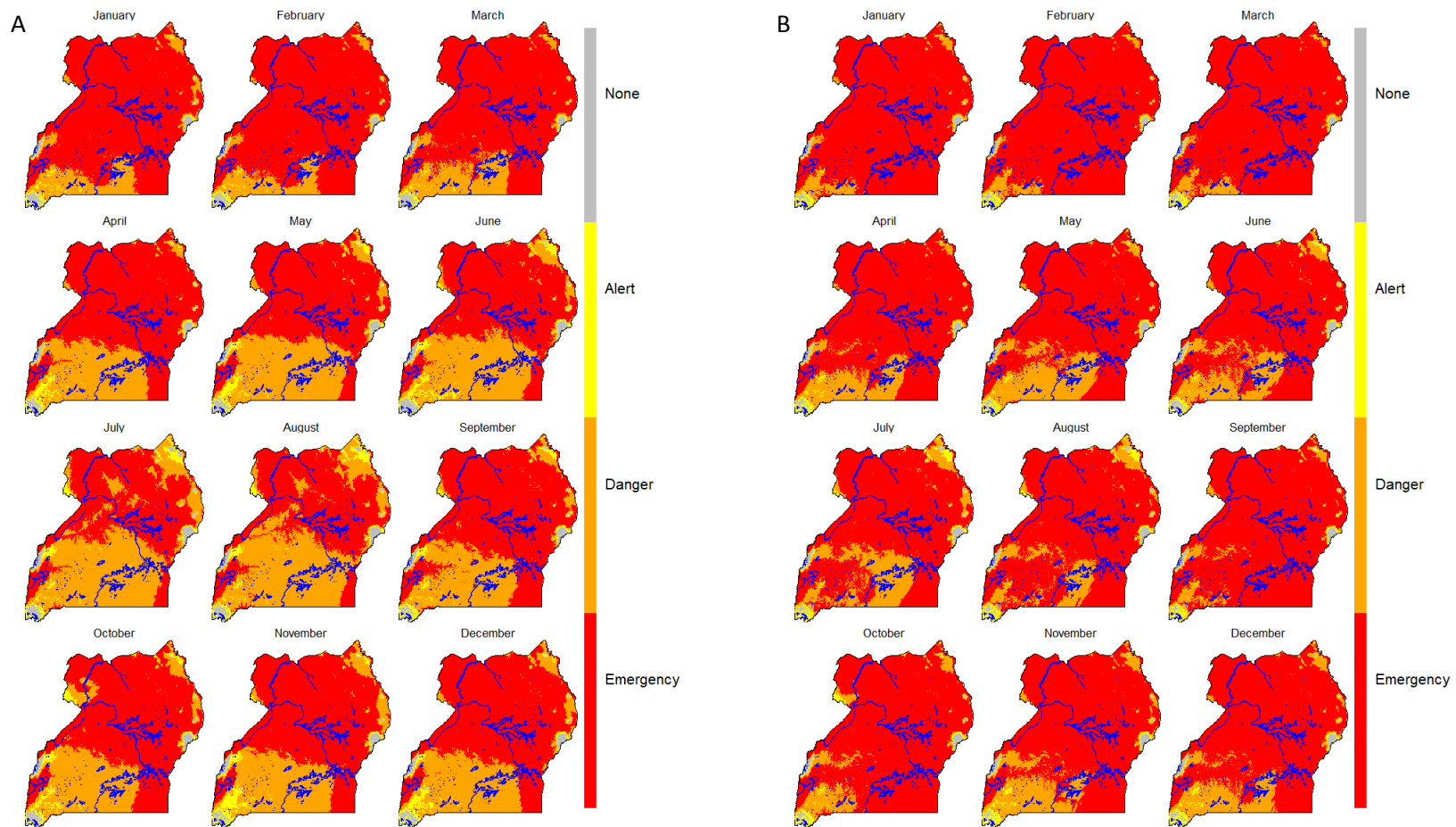
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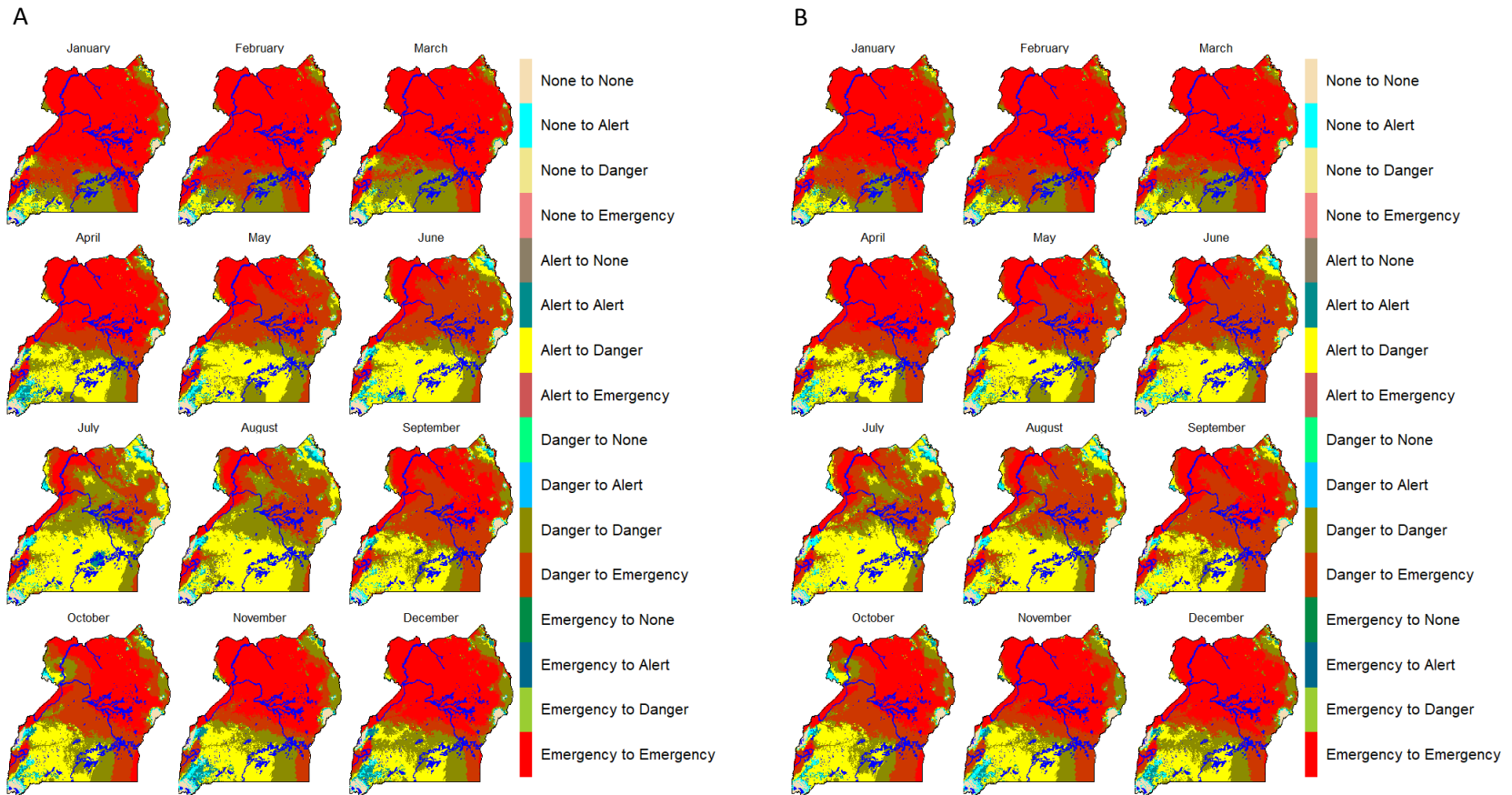
CHANGE IN HEAT STRESS

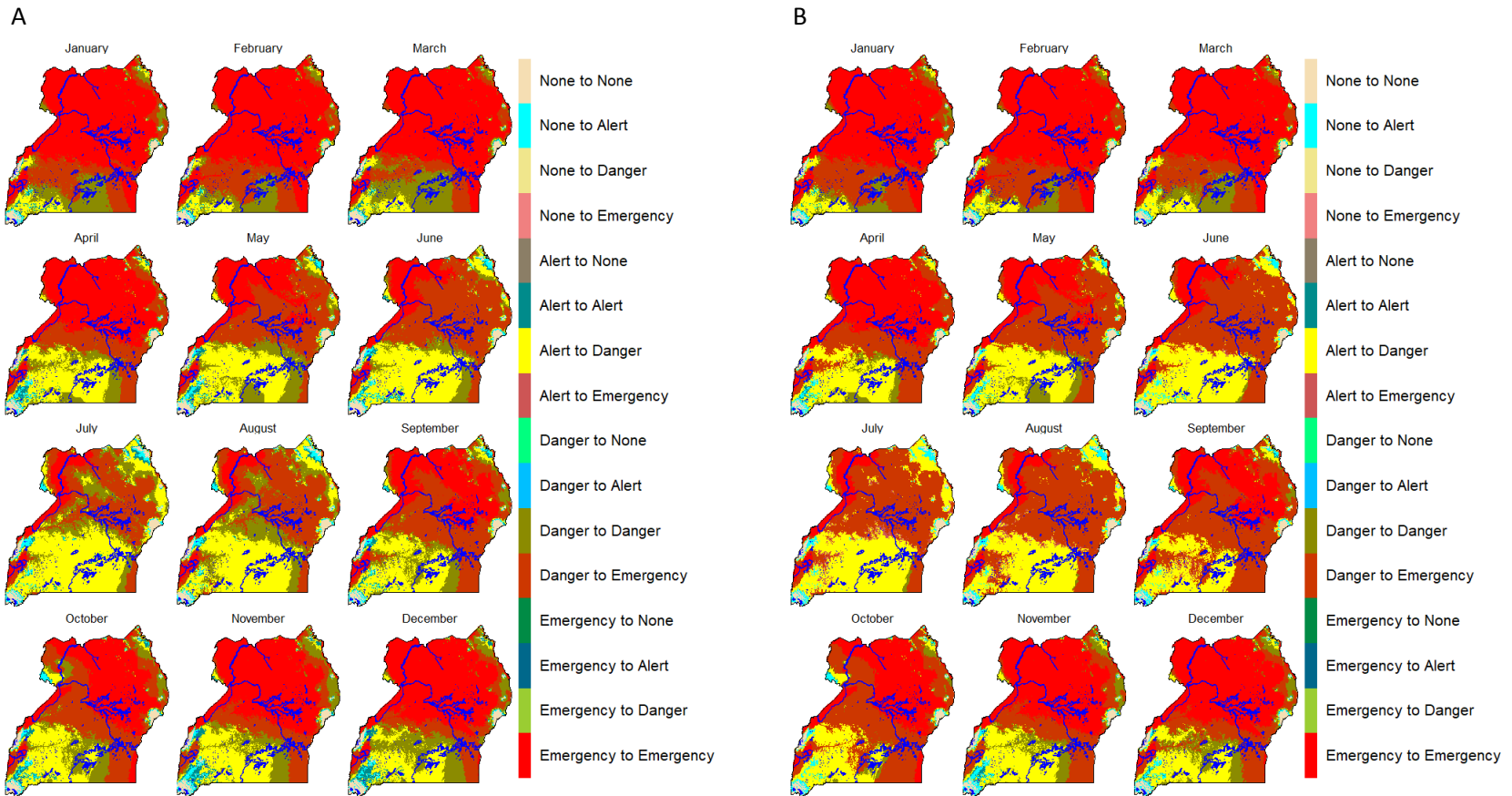*Figure 6 Change in heat stress; RCP: 2.6; Period: 2030s (A) & 2050s (B), Blue colour indicates water bodies*

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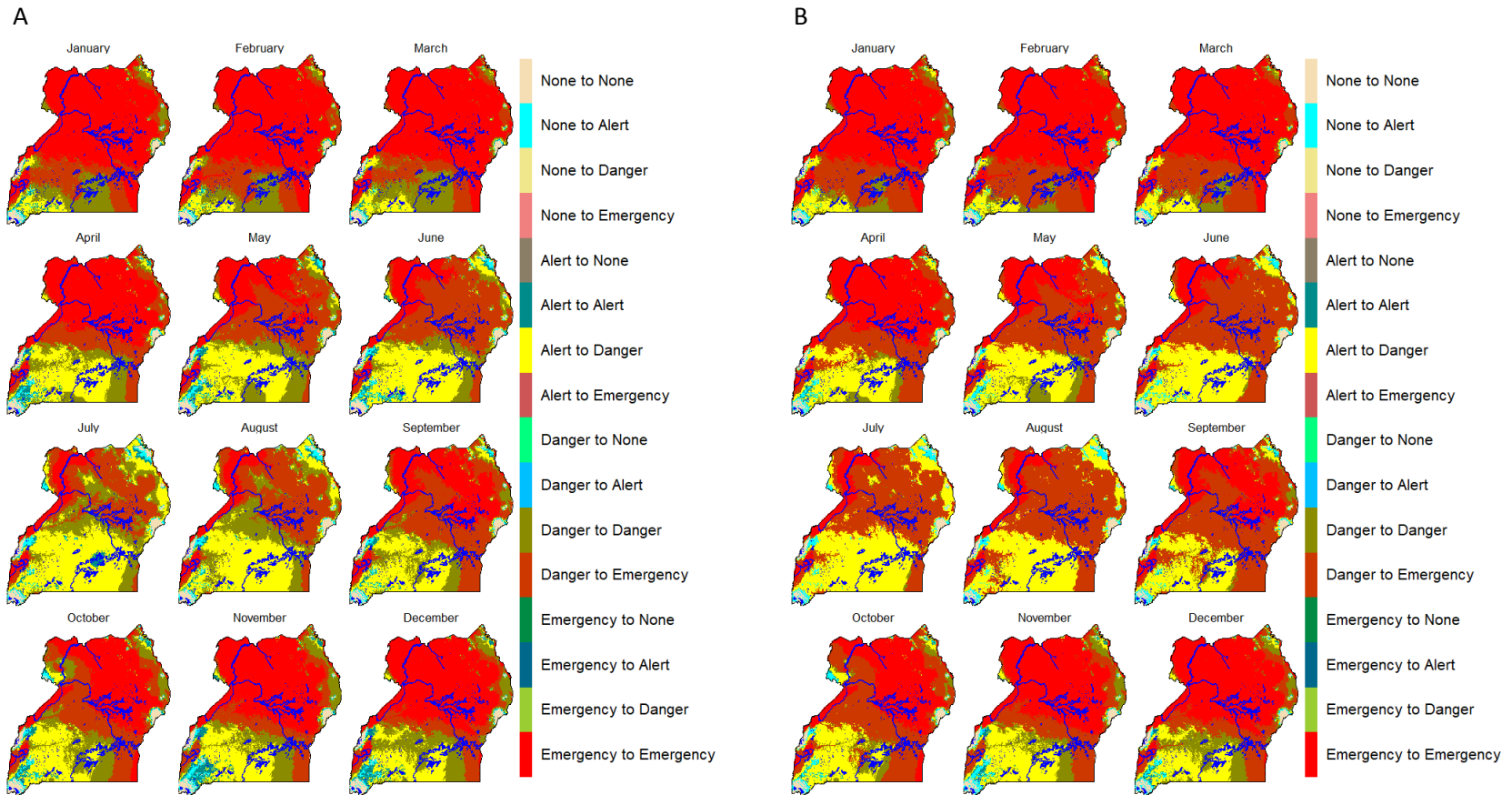
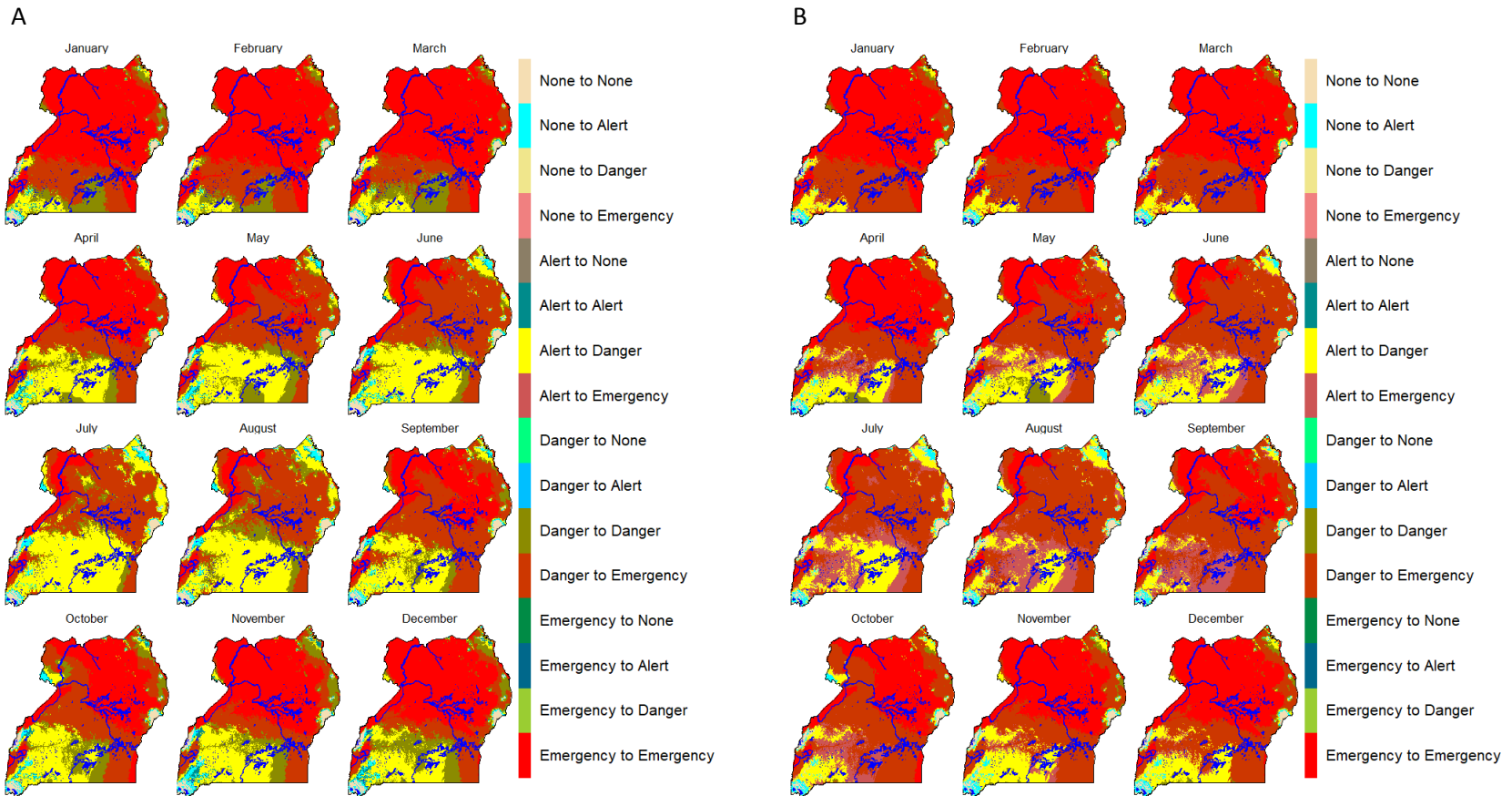*Figure 8 Change in heat stress; RCP: 6.0; Period: 2030s (A) & 2050s (B), Blue colour indicates water bodies*

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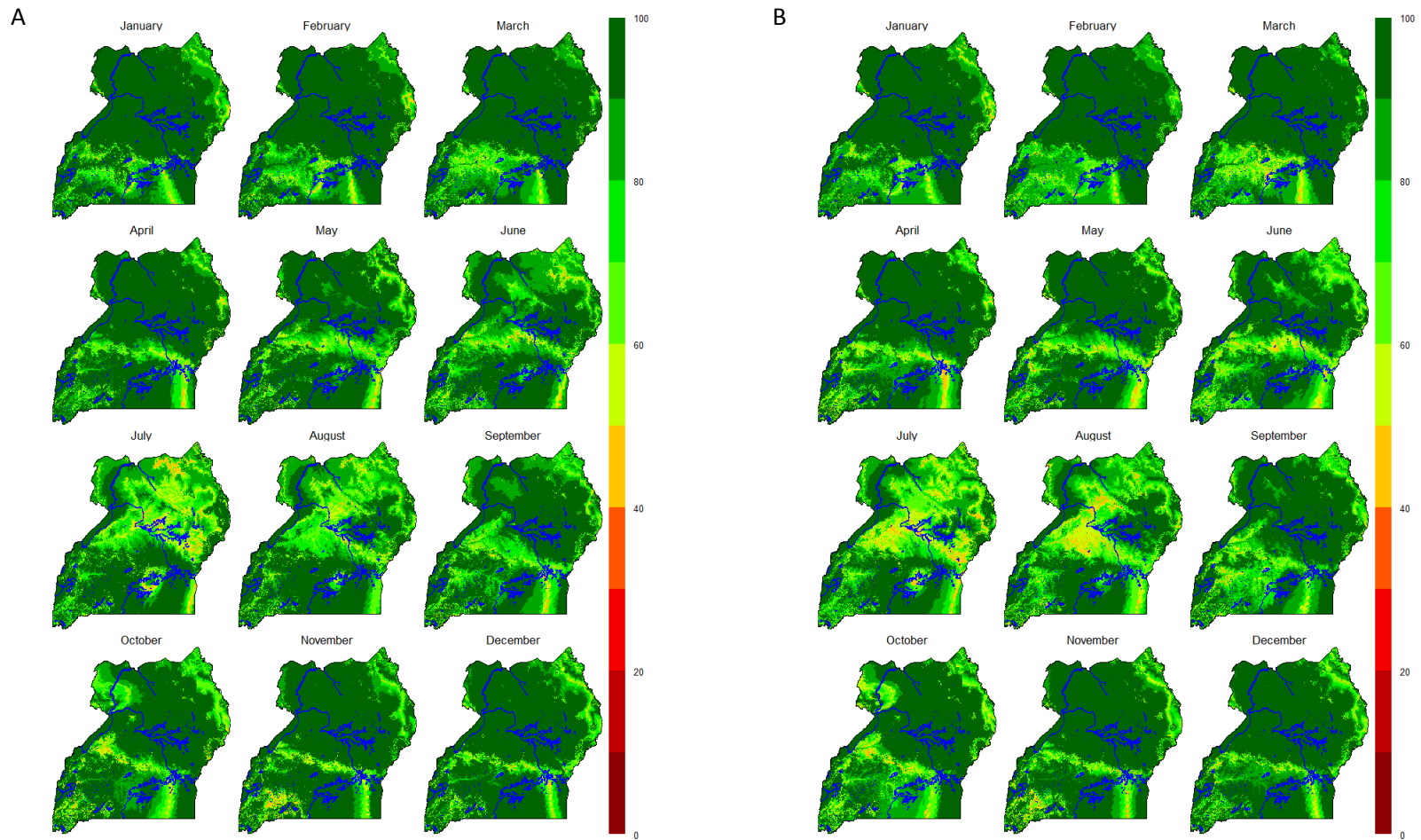
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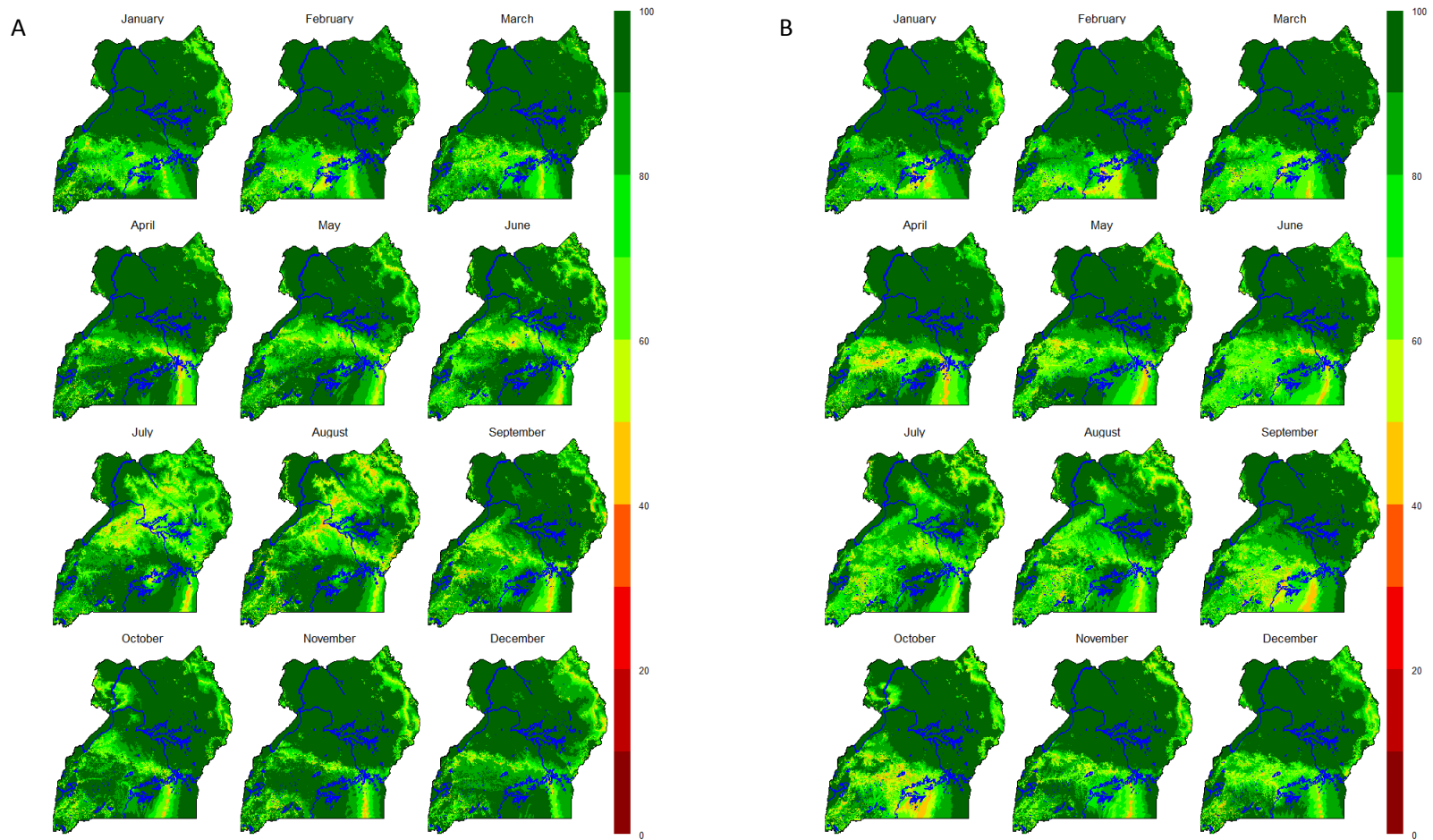
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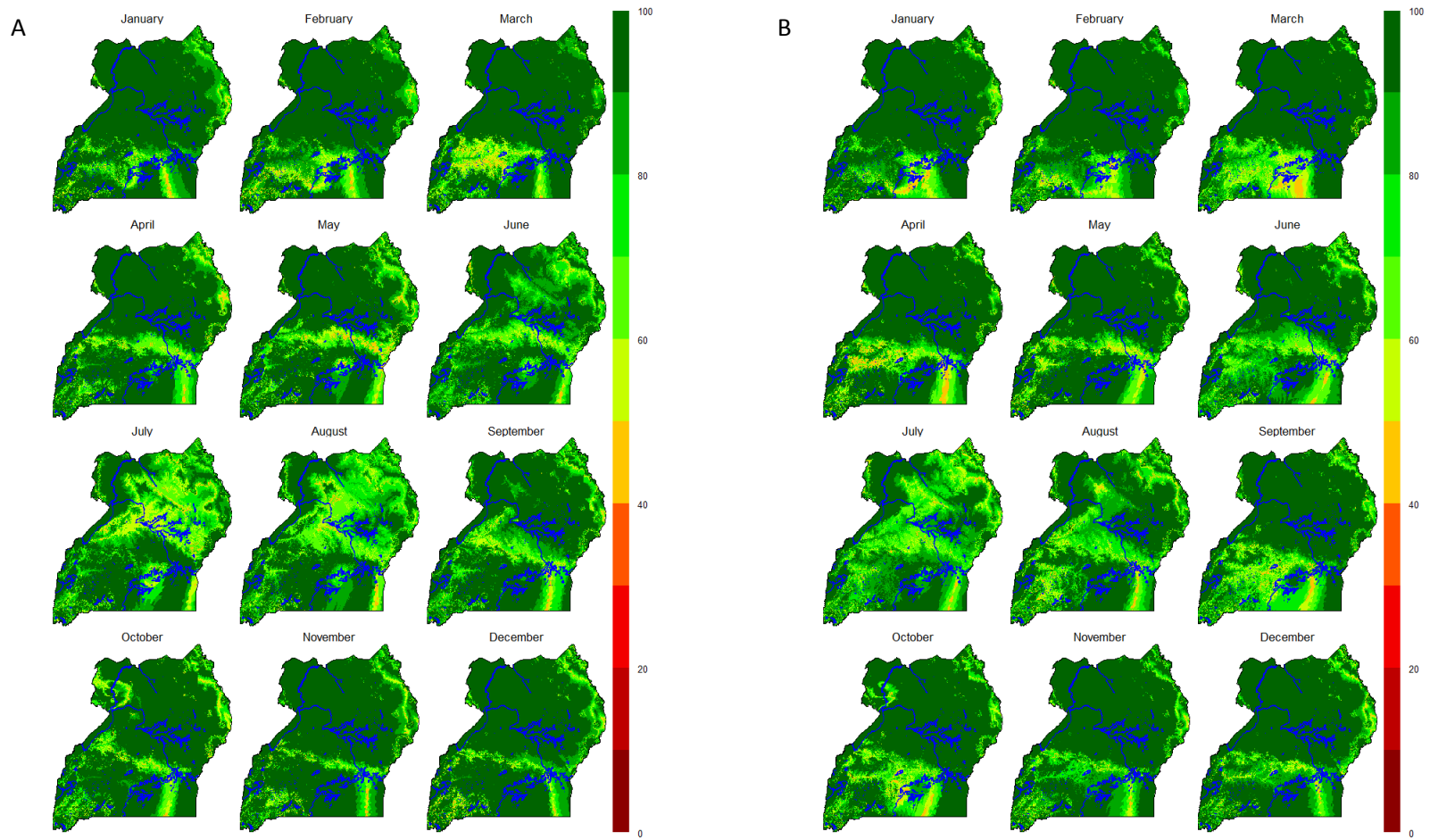
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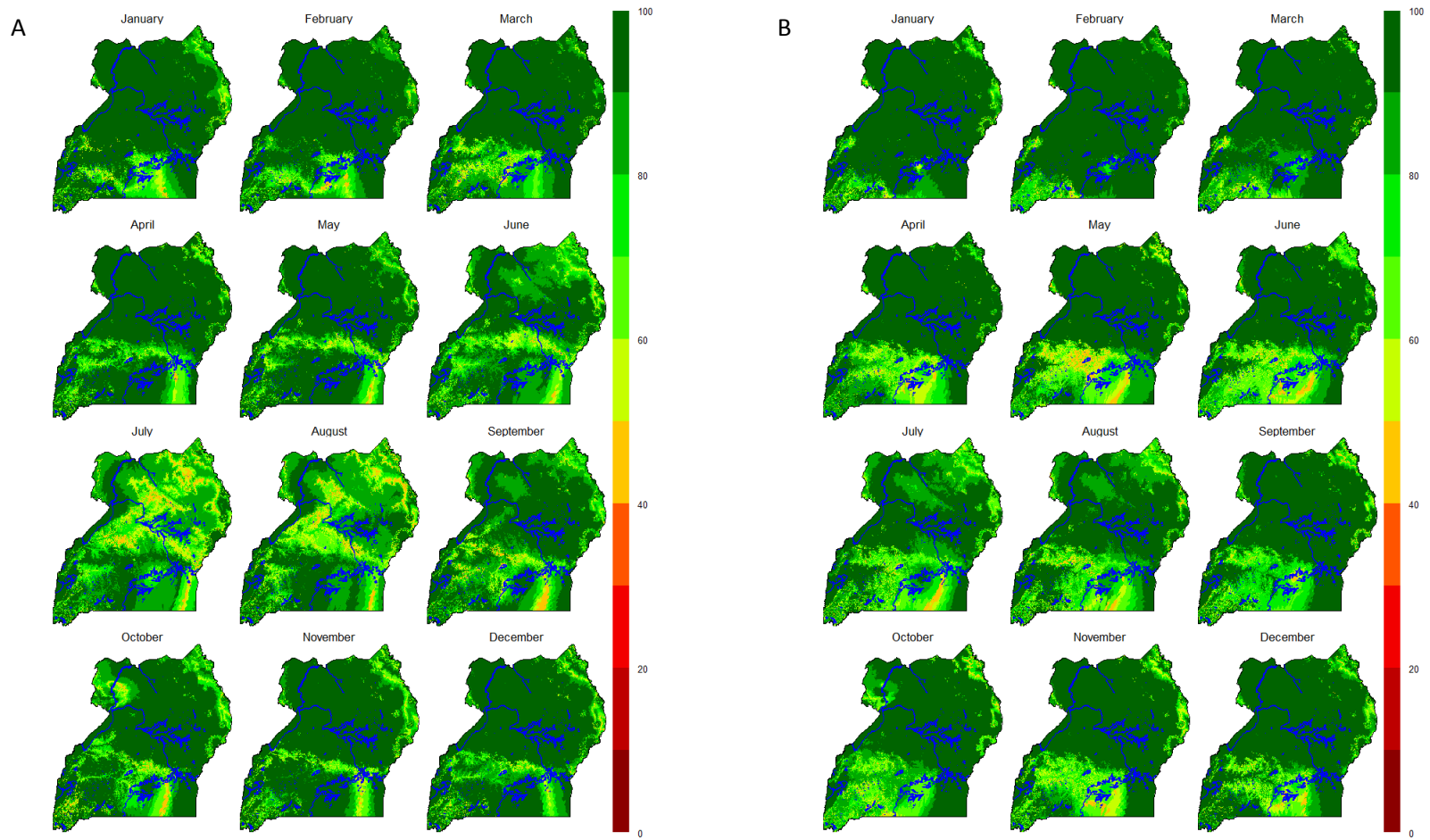
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LIMITATIONS

The data represented in this map book were the results of efforts by the team to provide a method for mapping livestock species that are exposed to and at-risk to heat stress. Just like all other modelling processes, the results are limited by the quality of the data used in the model.

REFERENCES

R Core Team. (2017). R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from http://www.r-project.org/