# Mat á hönnunarflóði á ómældum vatnasviðum með notkun afrennslisgagna úr endurgreiningu á veðurspálíkaninu Harmonie. Andréa-Giorgio R Massad, Tinna Þórarinsdóttir og Matthew J. Roberts . Veðurstofan – mars 2022.

Ágrip skýrsluhöfunda:

Extreme flood estimates are important in the design of hydrological infrastructure, including highways, stormwater drains, bridges, and culverts. In this research, a first attempt to estimate extreme values based on simulated runoff from the ICRA reanalysis data is investigated. Firstly, runoff is converted into discharge and compared to measurements from44 stations around Iceland. Hierarchical cluster analysis is then used to identify groups of stations that cluster similarly whether the analysis is based on observed or simulated discharge. Cluster-based corrections are then investigated to correct systematic overestimation in the simulated dataset. An Extreme Value Analysis is then performed and showed closer results between return level values based on observations and simulations after applying the correction in a majority of cases. Overall, these result show that extreme discharge values based on catchment-accumulated runoff from the ICRA dataset is able to simulate the observed high discharge after correction. The findings of this study represent an initial methodology that could successfully assess design-flood values for ungauged catchments throughout the country.