



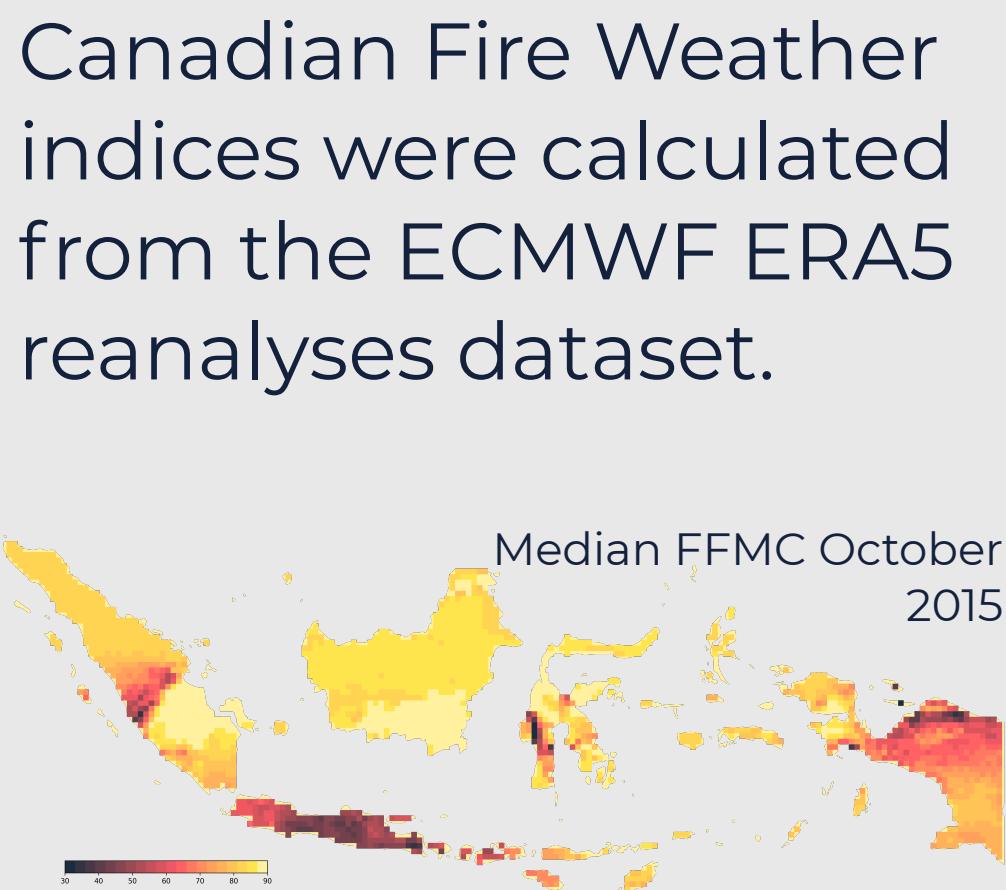
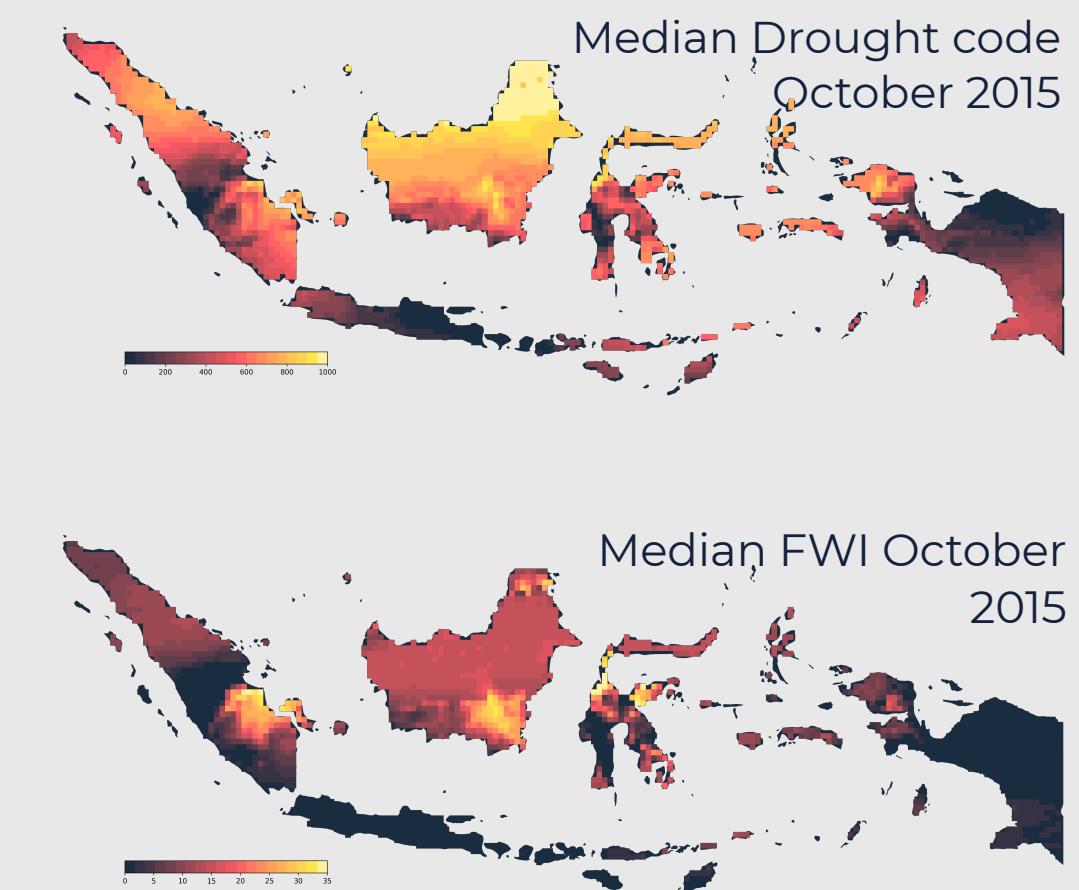
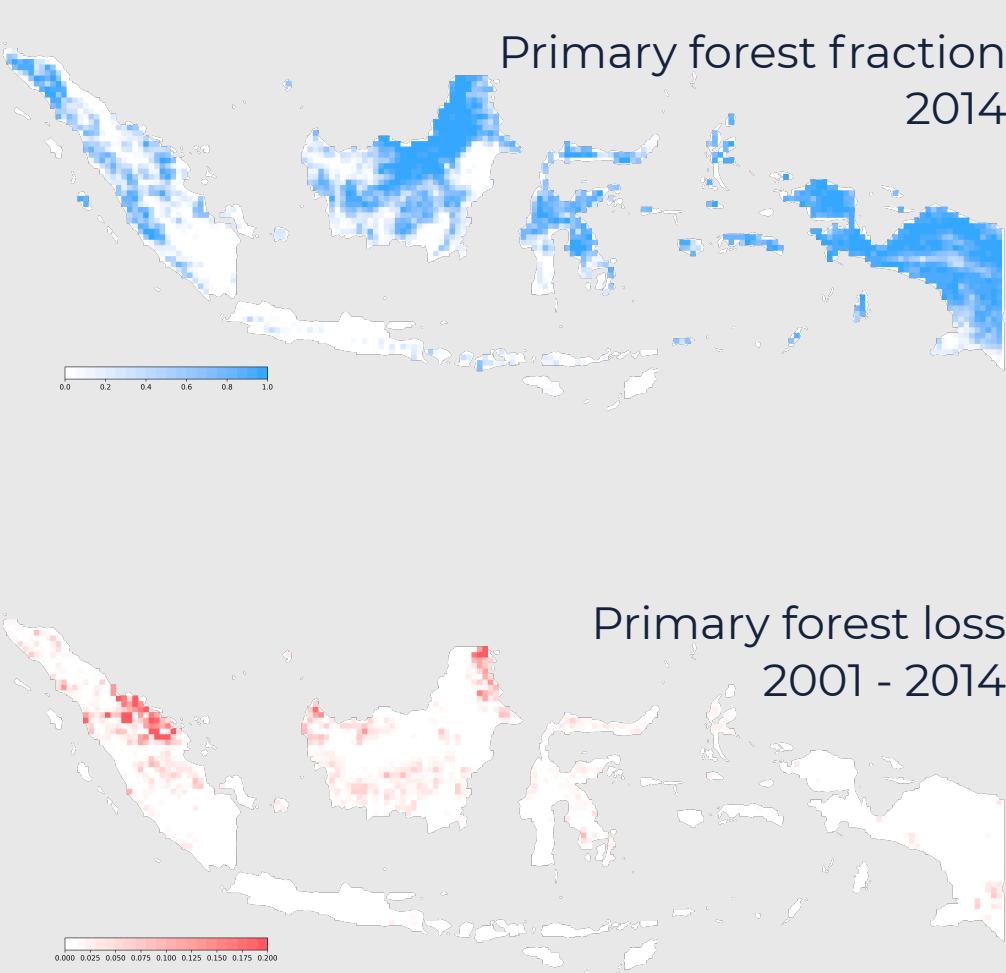
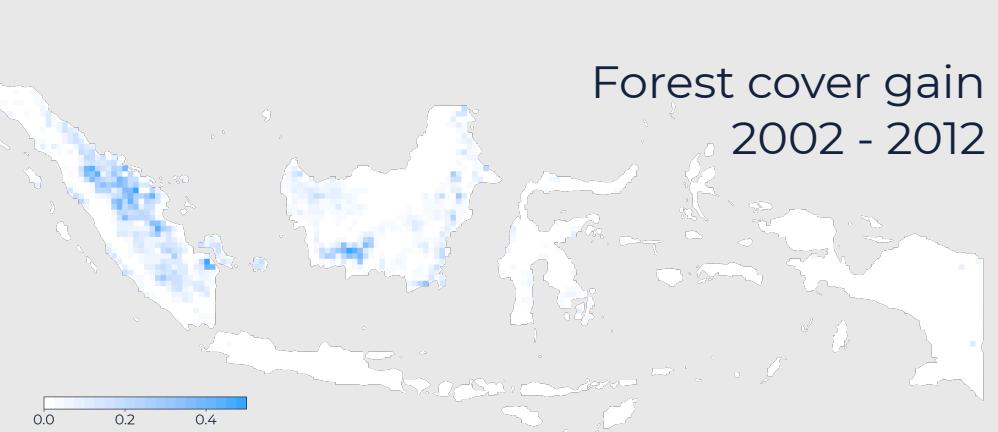
Forecasting fire activity in Indonesia

Towards an Fire Early Warning System for Indonesia (ToFEWSI)

<https://tofewsi.github.io>

This study, part of the ToFEWSE project, explored if extreme peatland and forest burning events could be predicted by supervised learning methods using fire weather indices and available land use datasets.

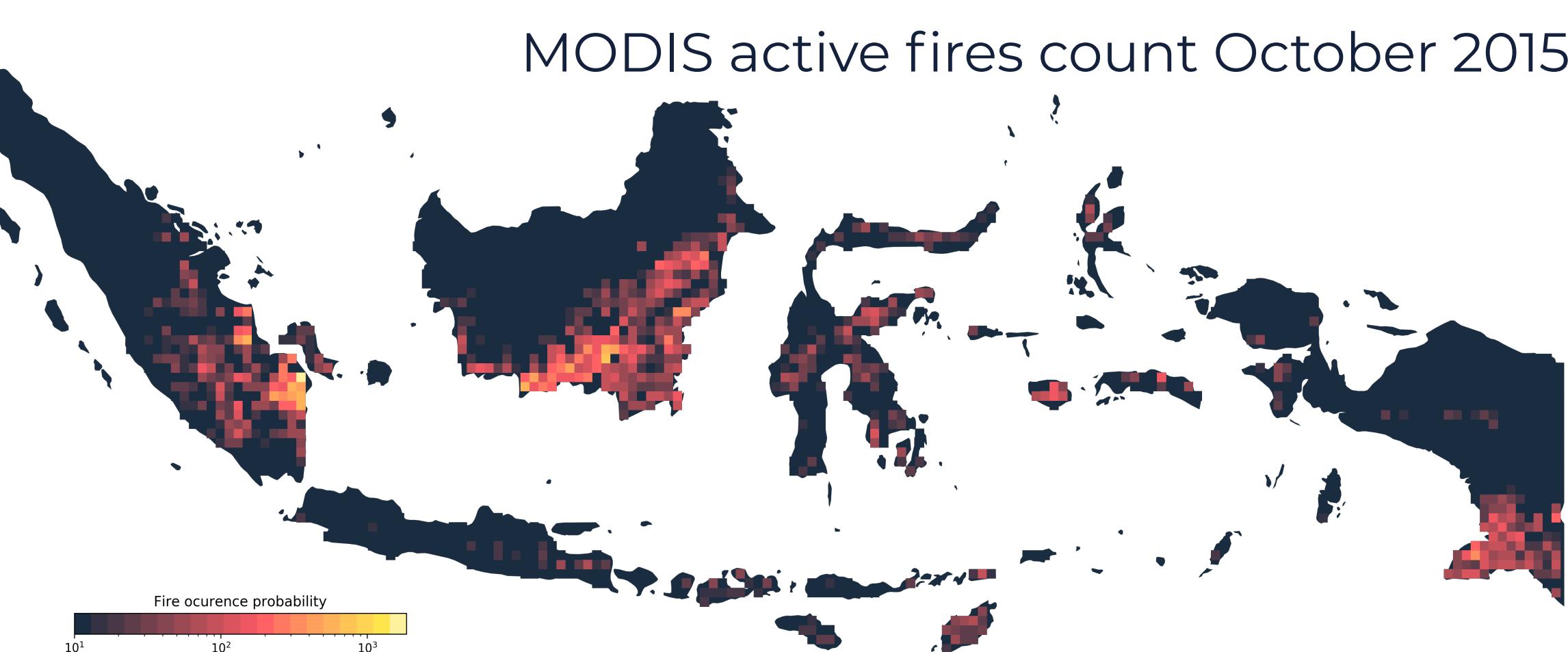
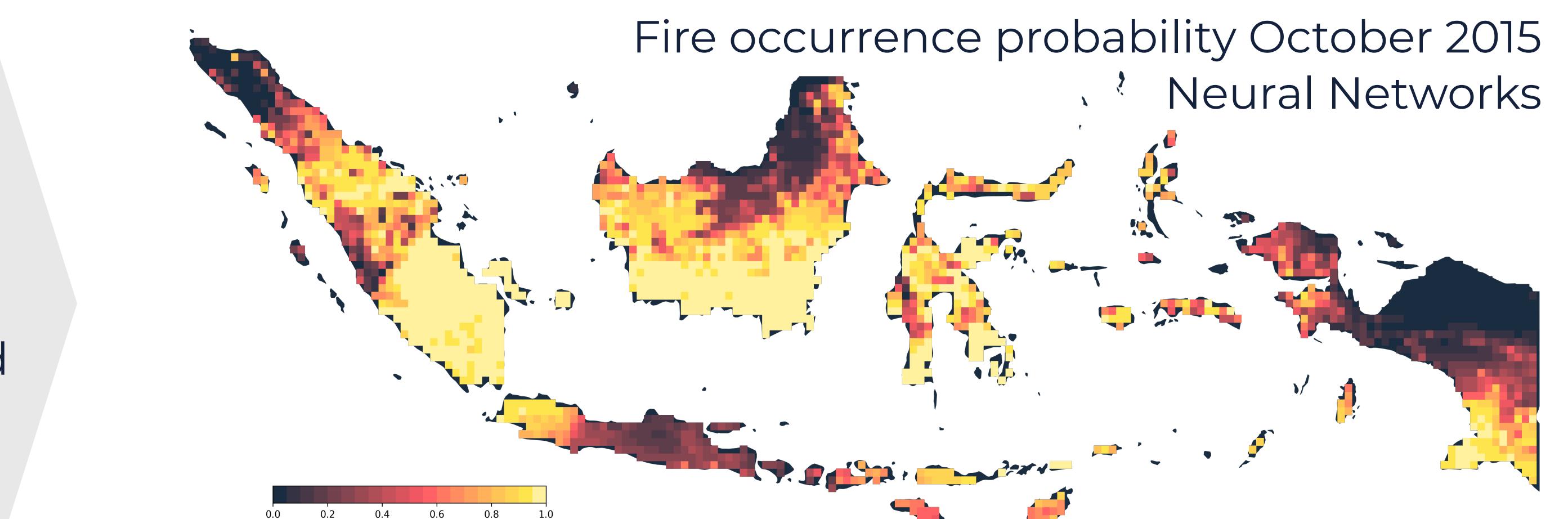
Some of the land cover datasets used for model training. Derived from Hansen et al., 2013, Science 342.



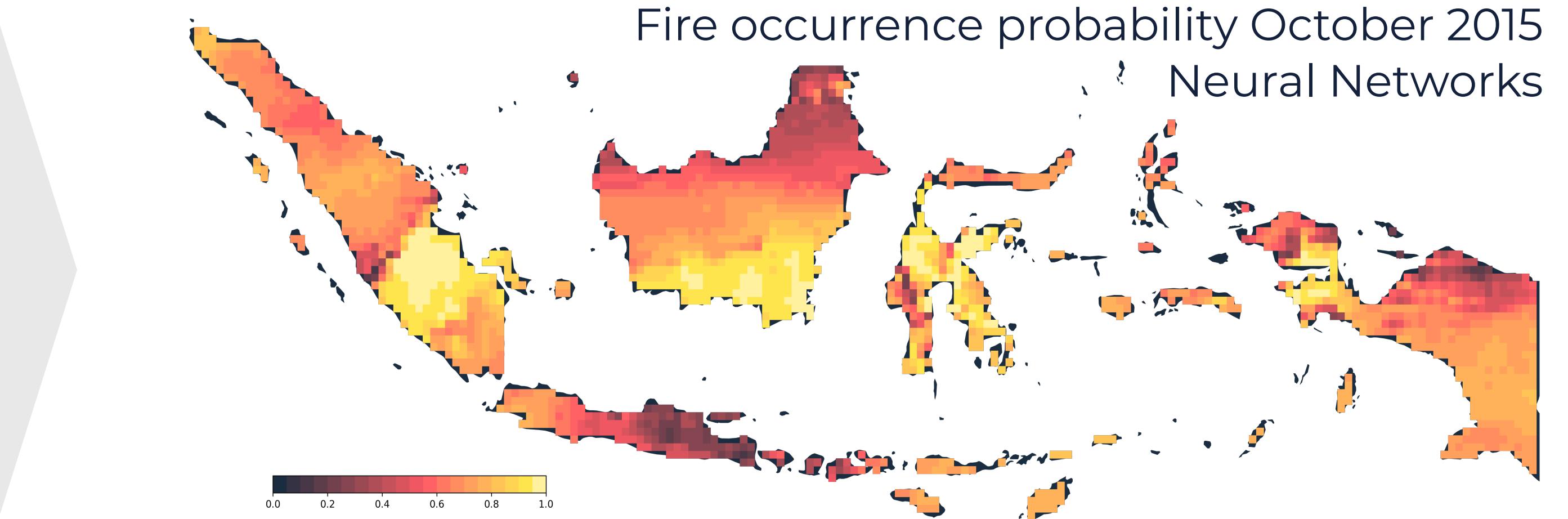
Modelling was performed on 25km grid and monthly temporal resolution for 2002 - 2018 period. Logistic regression, maxent, support vector classifier and neural networks algorithms were tested.

Land cover and land use information is critical for modelling fire activity in Indonesia

Full set of features used for learning and prediction



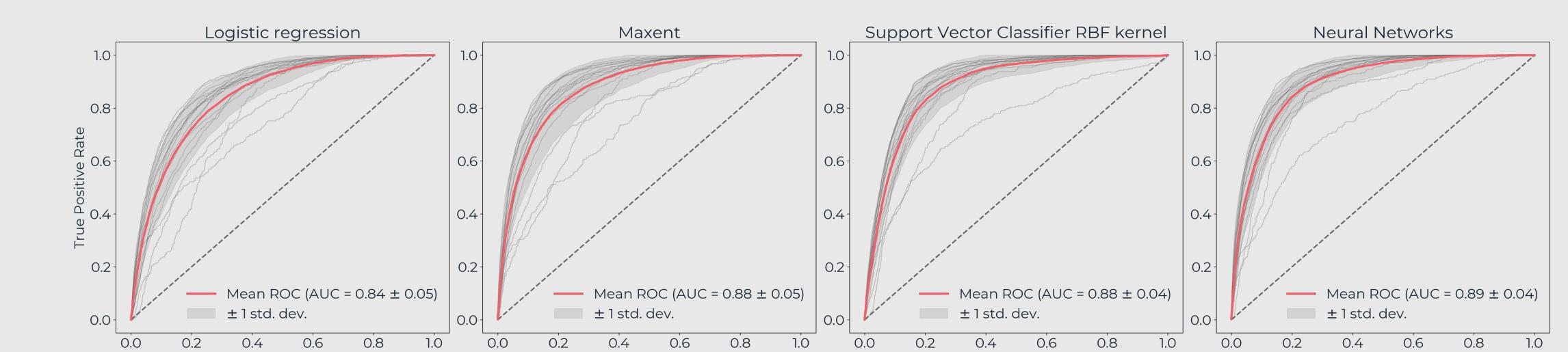
Only fire weather features used for learning and prediction



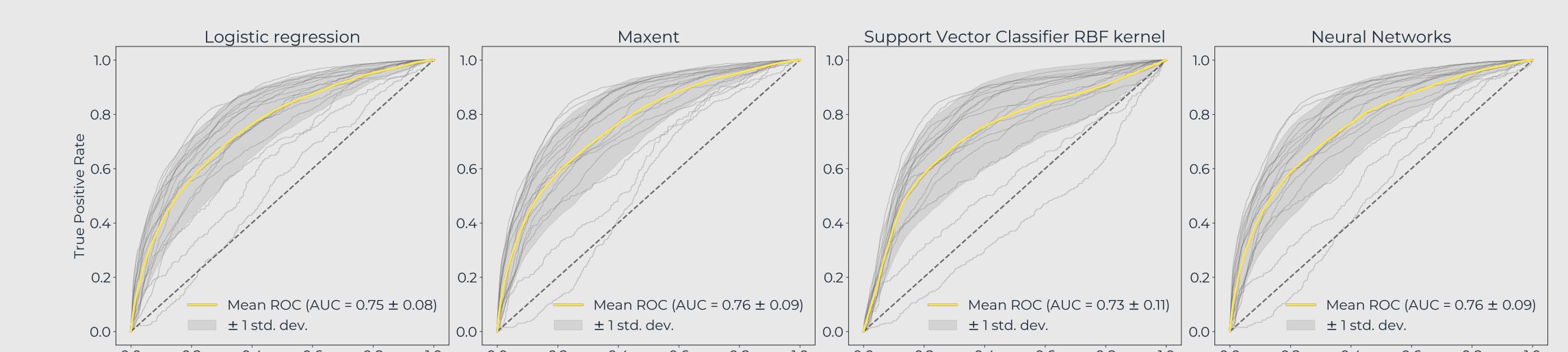
Tadas Nikonoas (1), Allan Spessa (1), and Symon Mezbahuddin (2)
(1) Swansea University, College of Science, Geography Department, Swansea, United Kingdom (tadas.nik@gmail.com),
(2) Department of Renewable Resources, University of Alberta, Canada

Models have significantly better prediction skill when trained with full feature set.

ROC curves for the models, full feature set.

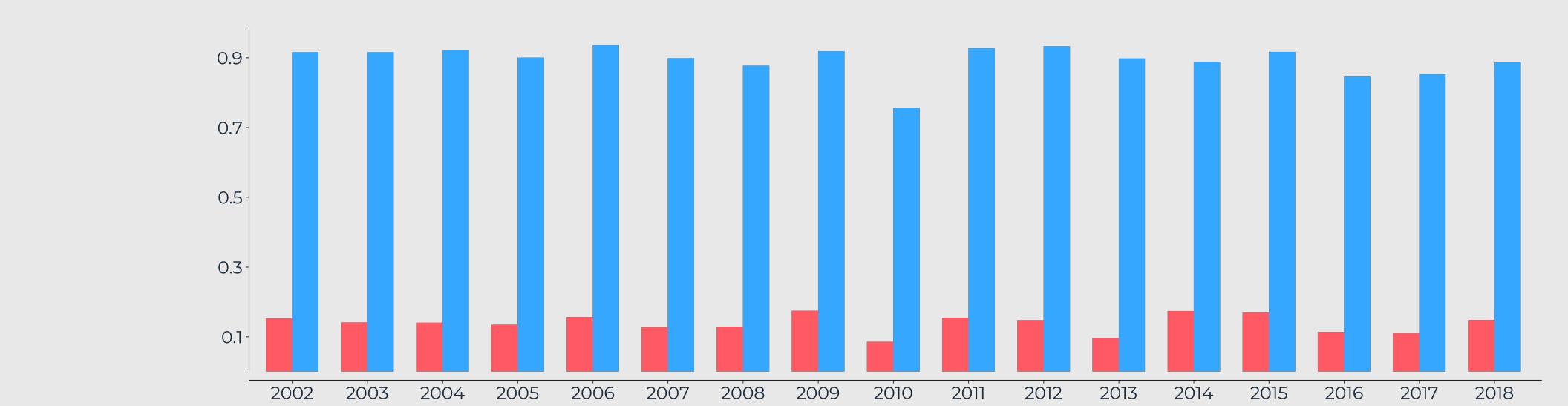


ROC curves for the models, fire weather features only.

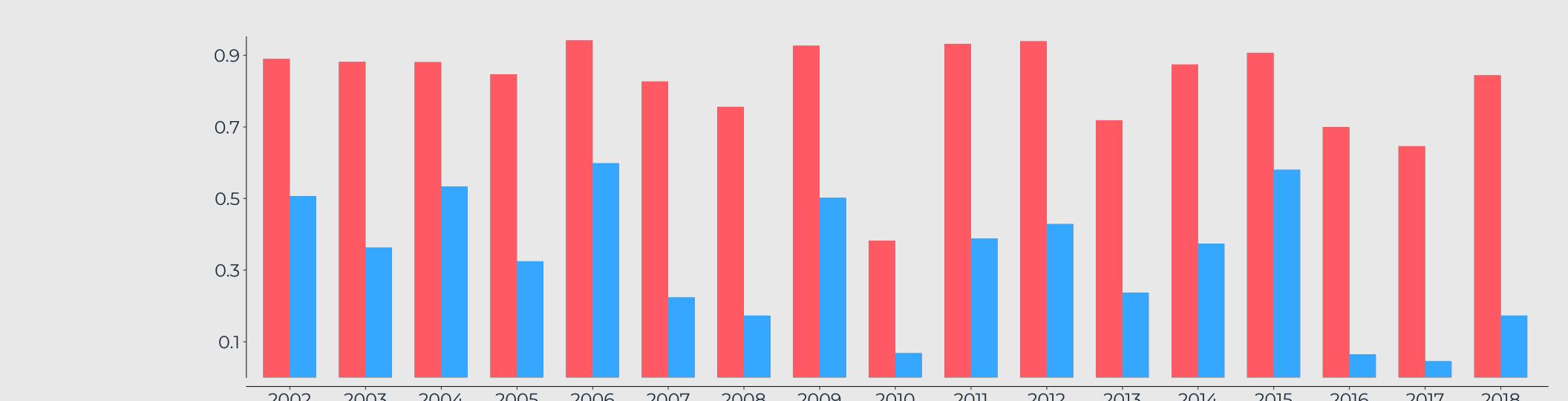


Validation was performed leaving one year out during training and using it as testing data.

Brier score and ROC for each year, Neural Networks



Recall and precision for each year, Neural Networks



ToFEWSI project is funded by the UK's National Environment Research Council (NERC) and the Indonesia Endowment for Education (LPDP). For more information visit <https://tofewsi.github.io>