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## Supplementary Material

# Effects of different sampling strategies for unburned label selection in machine learning modelling of wildfire occurrence probability

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## S1. Foliage fuel load (FFL) validation

A total of 320 FFL measurements were sampled at 30 × 30 m scale over the grasslands and forests of China (Table S1). For grasslands, three subplots (0.5 × 0.5 m) were randomly selected to destructively sample the aboveground grass by removing all grass from the ground level. For forests, the leaf area index (LAI) and crown coverage (ccov) of the tree canopy were measured using a fisheye camera system (Hemiview & EOS60D & Sigma EX DC4.5), and the crown width and height of trees were measured using a laser altimeter (ORPHA 800A). The tree foliage was measured using a portable power projectile, and the shape and type of tree crowns were also recorded. A GPS was then used to locate the geographical position of each sample which were immediately sealed in plastic bags to prevent the loss of water and transported to the laboratory for further processing: samples were weighed (fresh weight, $W_{fresh}$), over-dried for 24 hours at 105 ºC for grass and 48 hours at 70°C for the forest, and then weighed again (dry weight, $W_{dry}$). The FFL was firstly retrieved using the radiative transfer model from MCD43A4 products. The accuracy of retrieved FMC was validated using the field measurements (Table S1), with the overall $R^2$ = 0.66 and RMSE = 0.08 kg/m$^2$ (Fig. S1). Further details on the estimation of this variable from remote sensing data are available in our previous works (Quan *et al.* 2017a; Quan *et al.* 2017b).

Table S1. FFL field sites.

| Site | Fuel class | Latitude | Longitude | *n* | $FFL_{mean}$ (kg/m$^2$) | $FFL_{std}$ |
|---|---|---|---|---|---|---|
| Wutumeiren | Grassland | 92.585 | 37.205 | 84 | 0.18 | 0.16 |
| Ruoergai | Grassland | 102.66 | 33.982 | 50 | 0.43 | 0.15 |
| Qinghaihu | Grassland | 100.554 | 37.191 | 135 | 0.12 | 0.05 |
| Lushan | Forest | 102.267 | 27.835 | 41 | 0.15 | 0.08 |
| Baigongyan | Forest | 104.2987 | 30.576 | 10 | 0.15 | 0.05 |

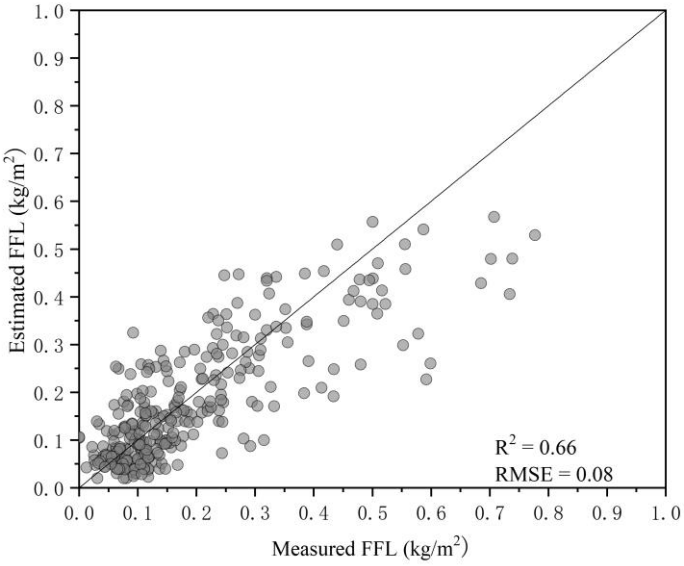


Figure. S1. Scatter plot of the measured FFL vs. estimated FFL.

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