

# Supplementary Material

## The relationship between conditioning factors and hazards

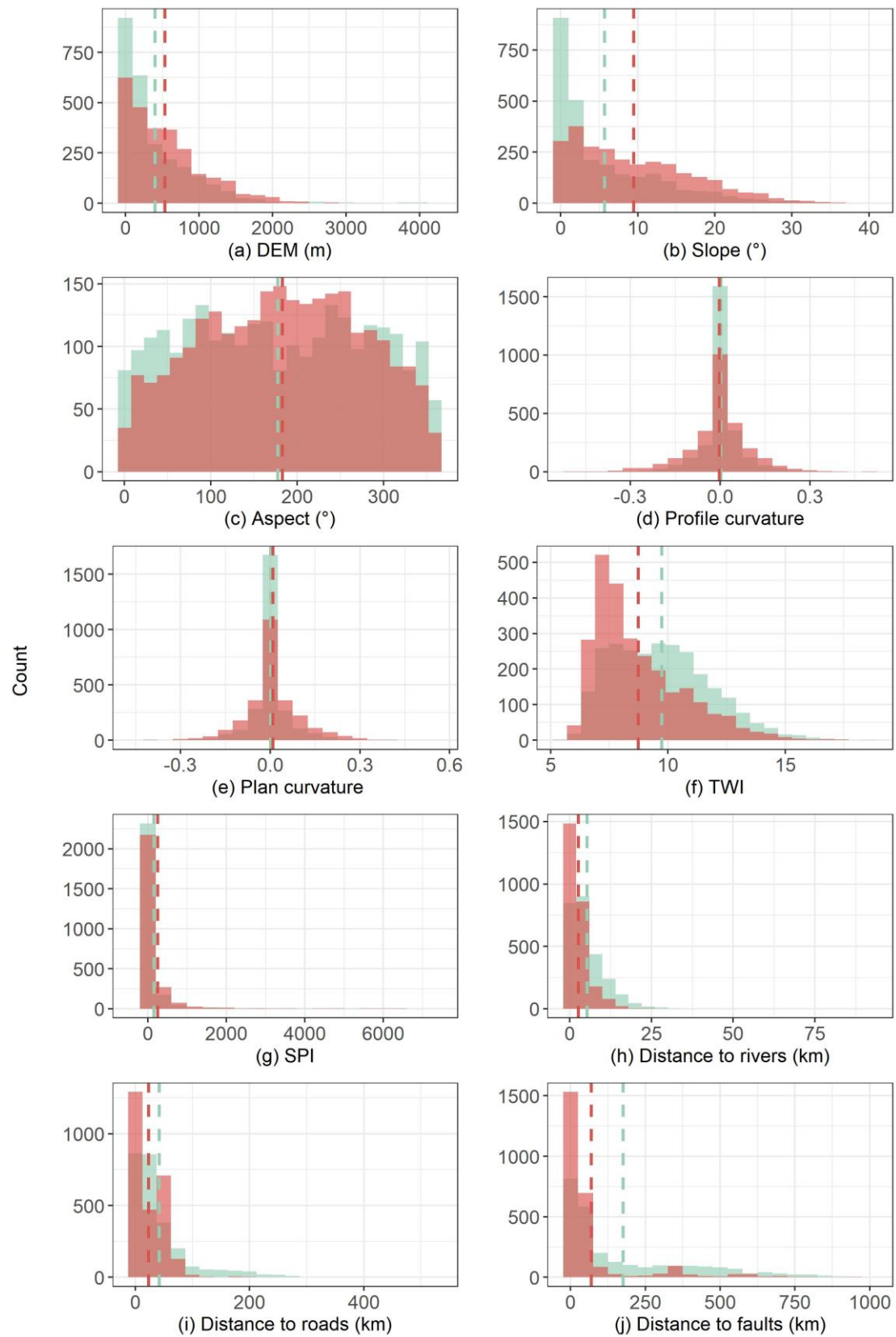


Fig. S1 The relationship between conditioning factors and landslide

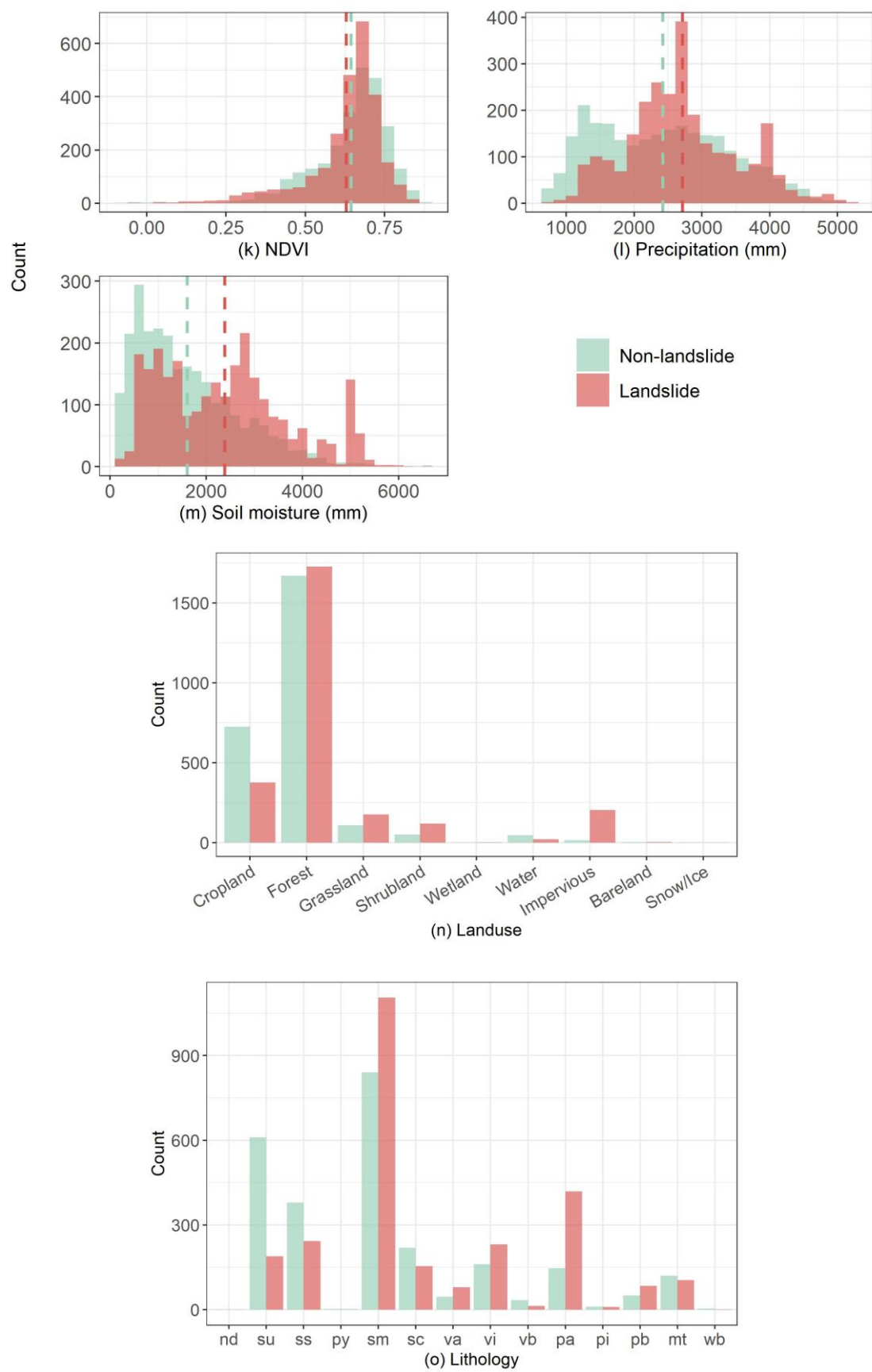


Fig. S1 (Continue)

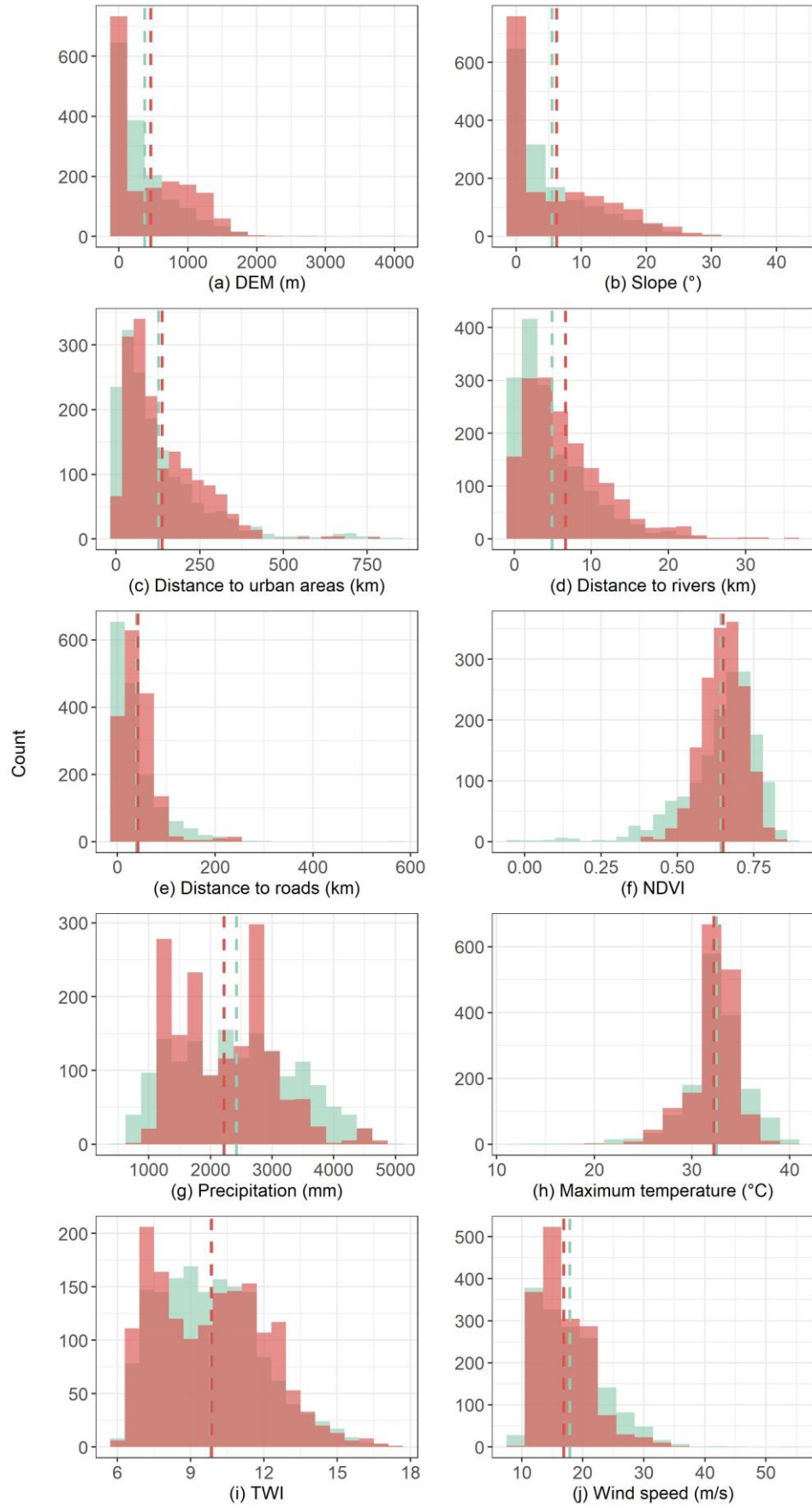


Fig. S2 The relationship between conditioning factors and wildfire

### **Multicollinearity analysis of the conditioning factors**

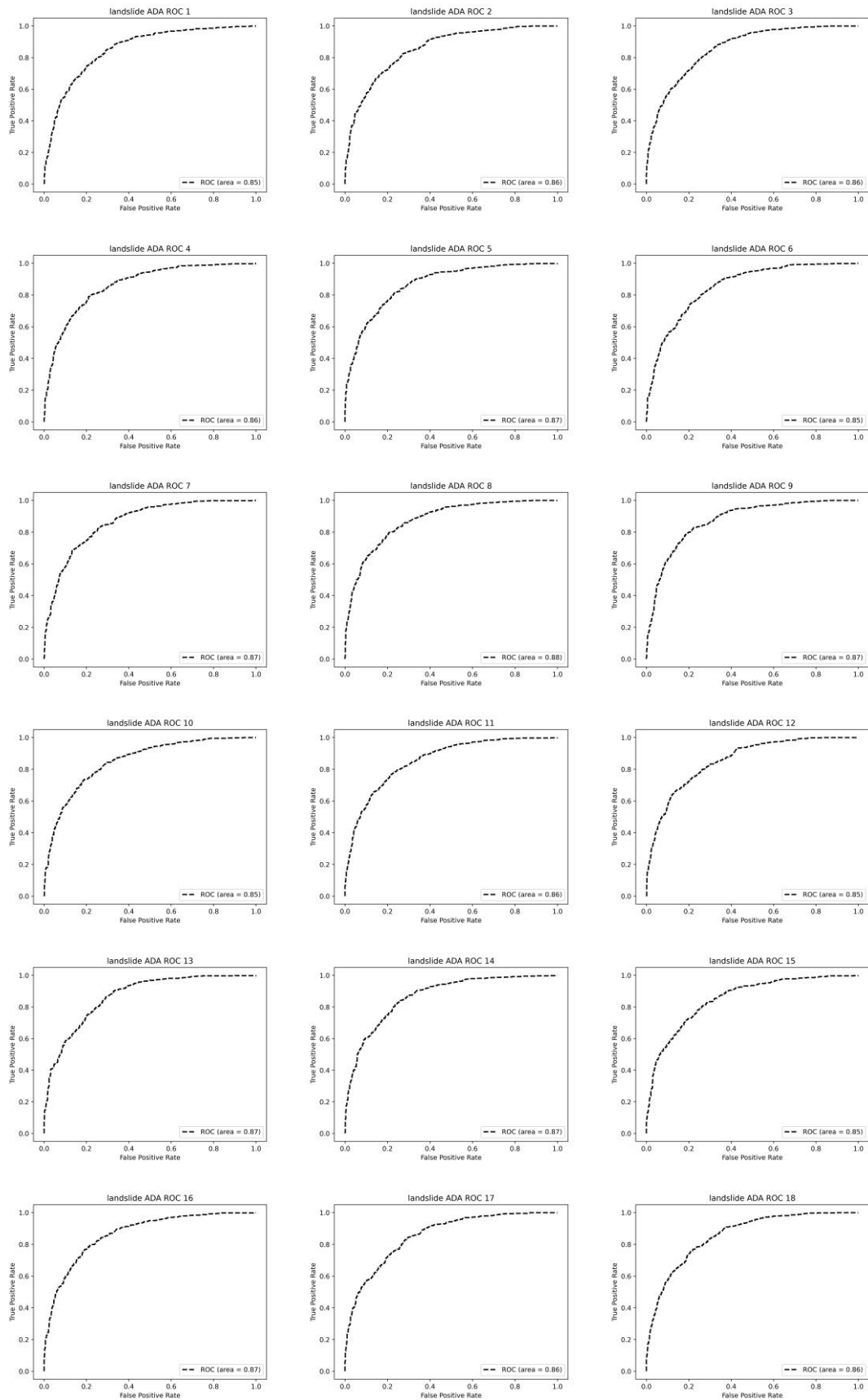
Table S1 Multicollinearity analysis of landslide conditioning factors

Conditioning factors	TOL	VIF
Elevation	0.579	1.726
Slope	0.367	2.728
Aspect	0.993	1.007
Profile curvature	0.647	1.546
Plan curvature	0.627	1.596
Distance to rivers	0.876	1.142
Distance to roads	0.847	1.181
Distance to faults	0.773	1.294
Lithology	0.858	1.165
Land use	0.823	1.216
NDVI	0.71	1.408
TWI	0.369	2.711
SPI	0.829	1.207
Soil moisture	0.811	1.233
Mean annual precipitation	0.817	1.224

Table S2 Multicollinearity analysis of wildfire conditioning factors

Conditioning factors	TOL	VIF
Elevation	0.190	5.269
Slope	0.360	2.776
Distance to urban areas	0.816	1.225
Distance to rivers	0.934	1.071
Distance to roads	0.817	1.223
NDVI	0.781	1.281
Mean annual precipitation	0.485	2.062
Mean annual maximum temperature	0.253	3.956
TWI	0.430	2.327
Mean annual windspeed	0.855	1.170

## ROC (the receiver operating characteristic) curves for AdaBoost, GBDT, and RF



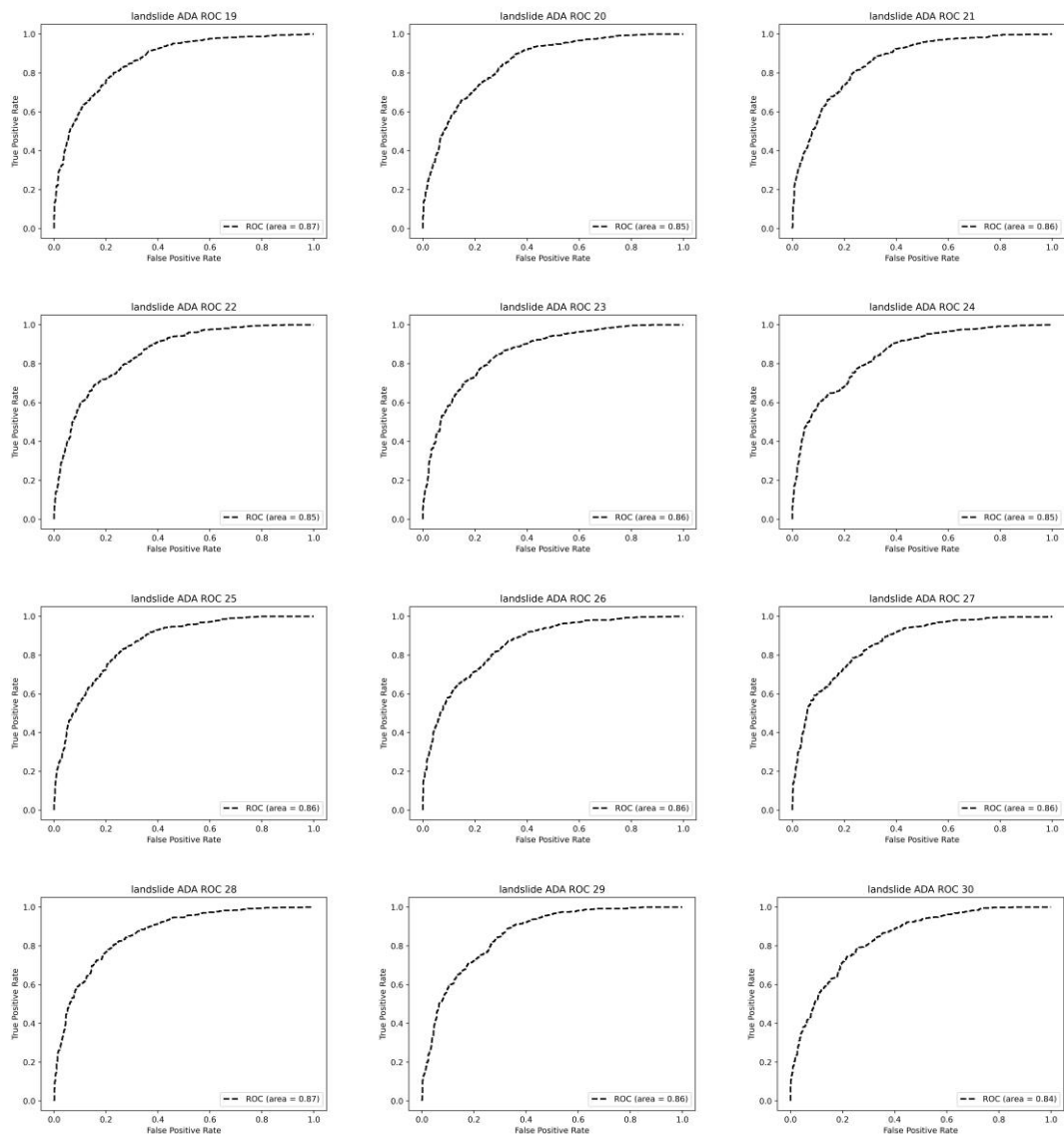
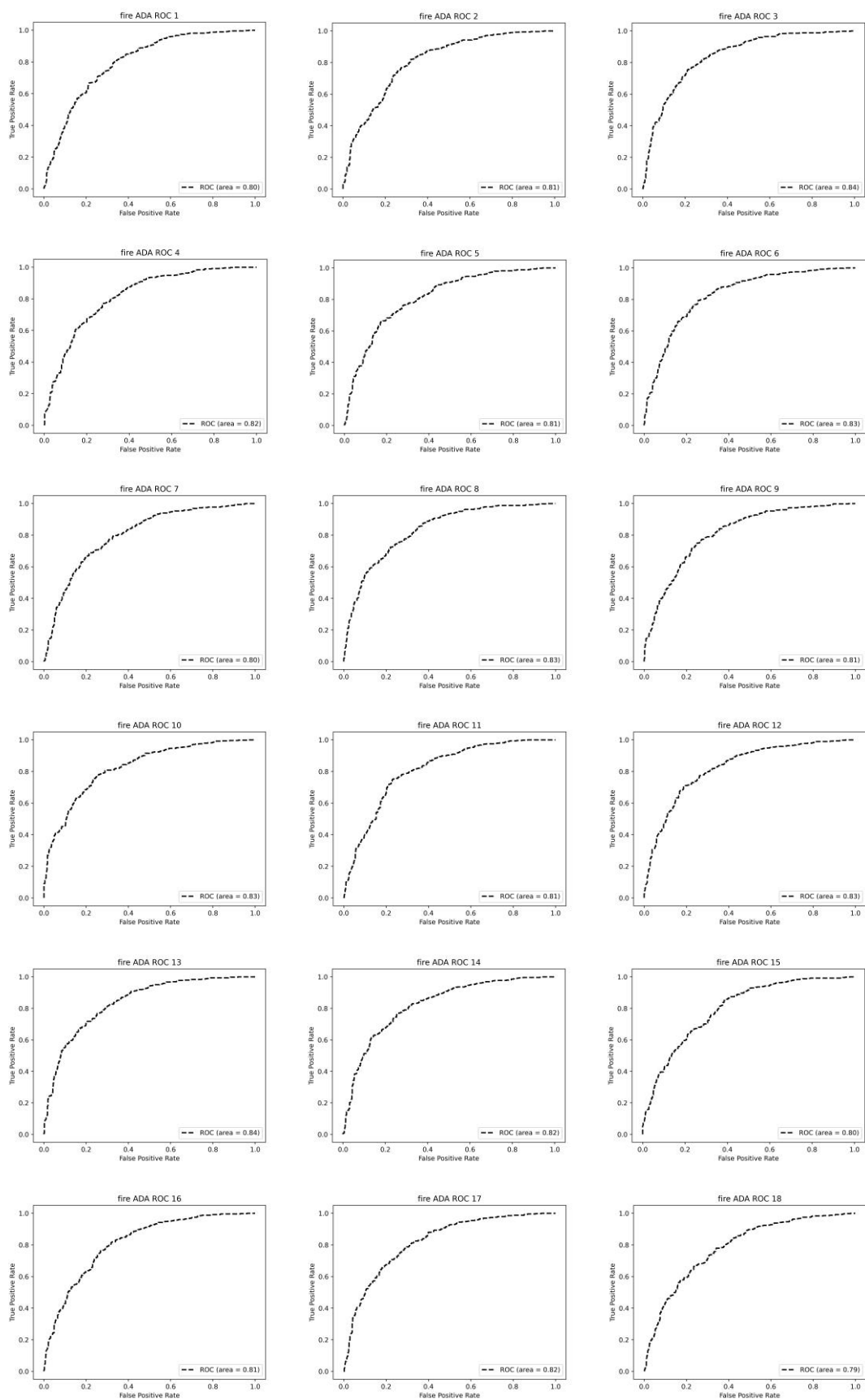


Fig.S 3 ROC curves for landslide susceptibility using AdaBoost





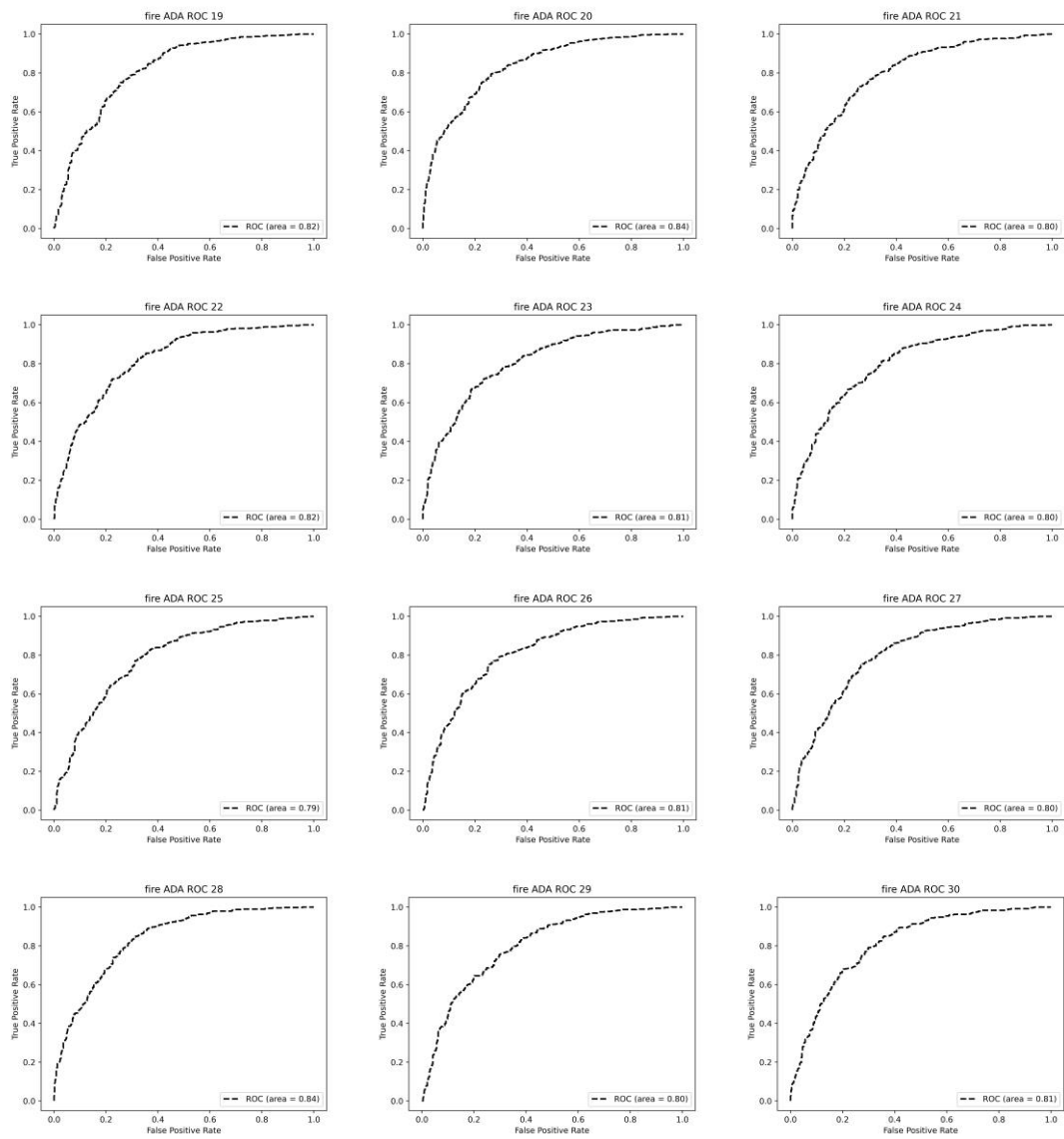
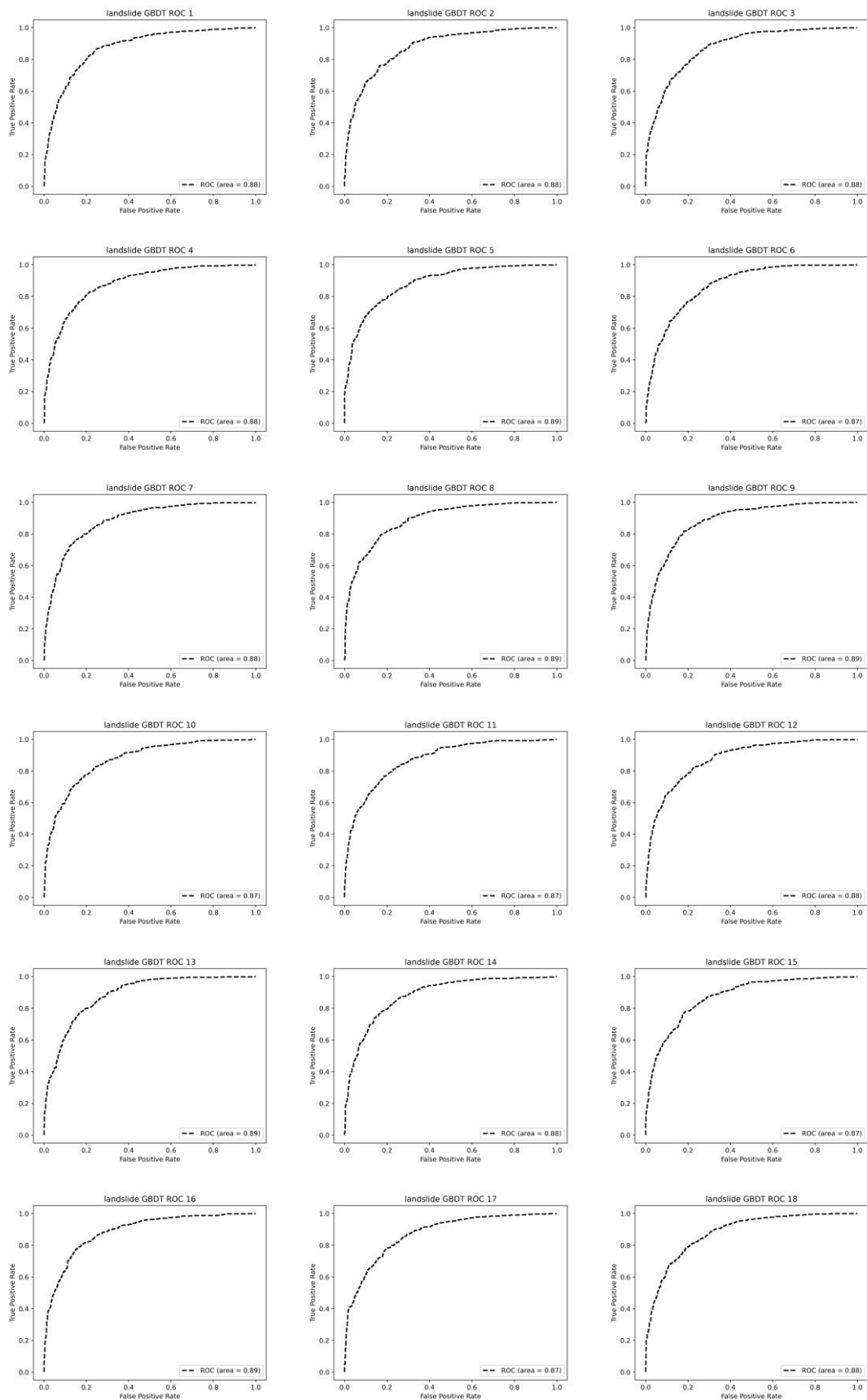


Fig.S 4 ROC curves for wildfire susceptibility using AdaBoost



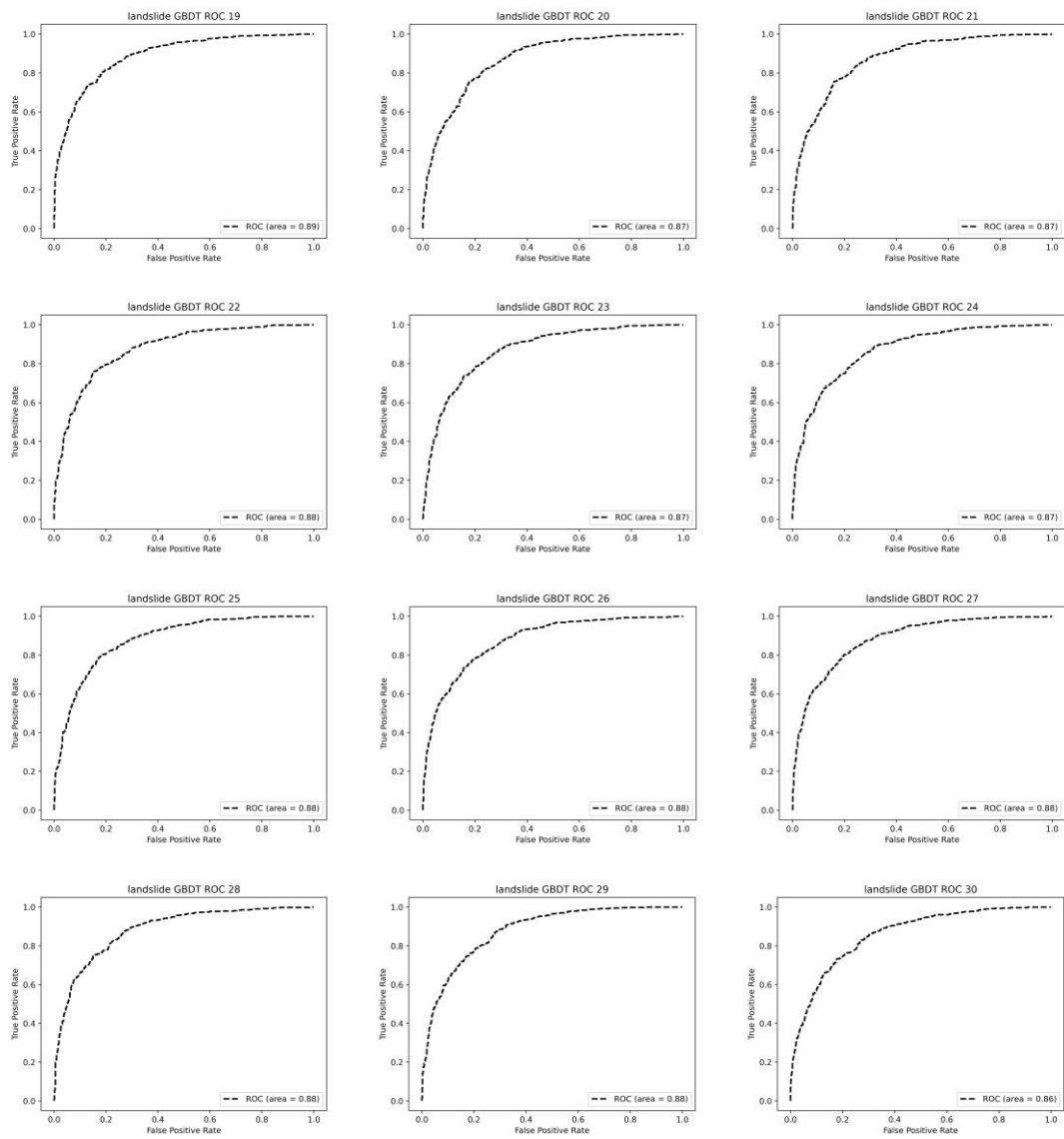
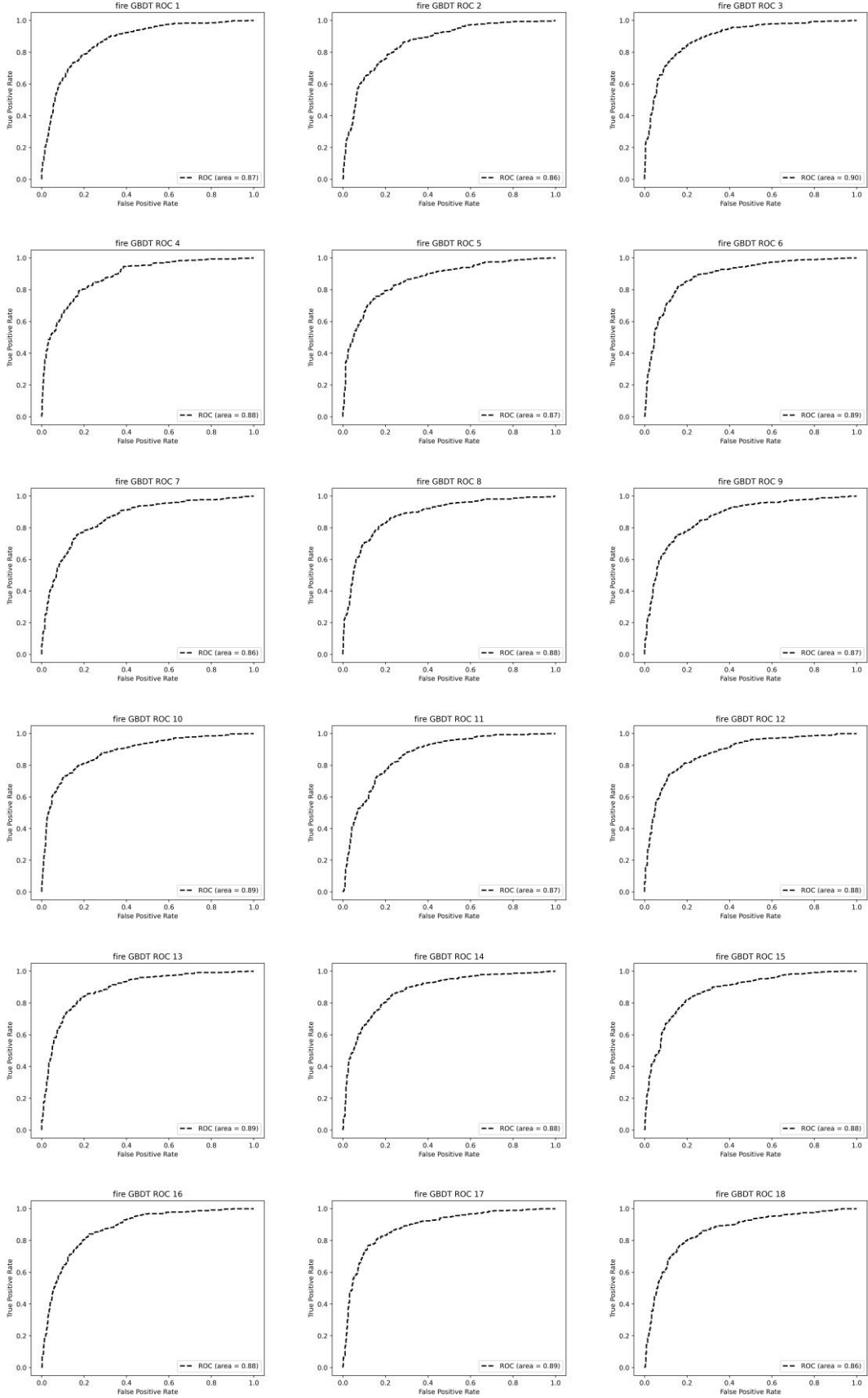


Fig.S 5 ROC curves for landslide susceptibility using GBDT



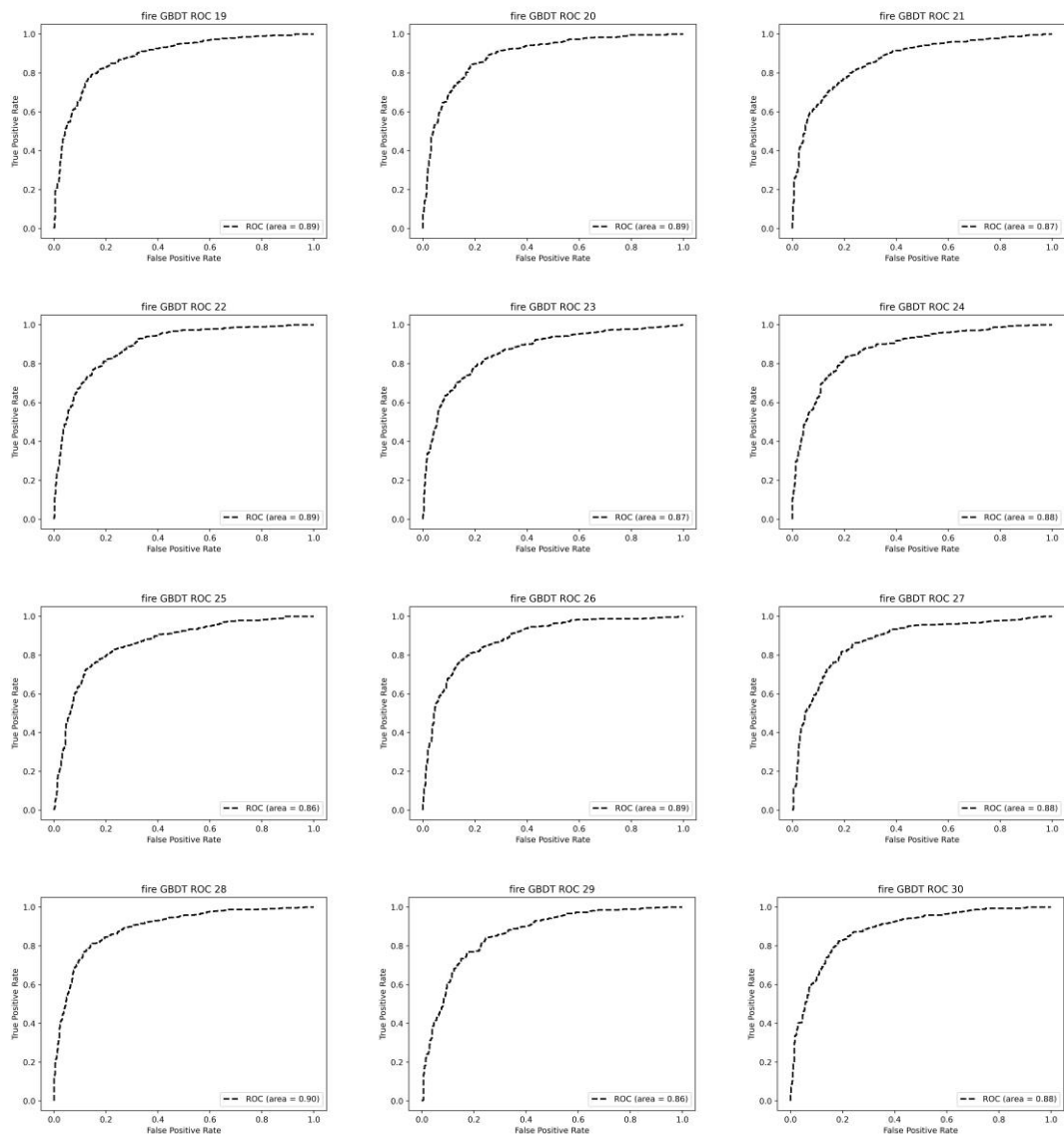
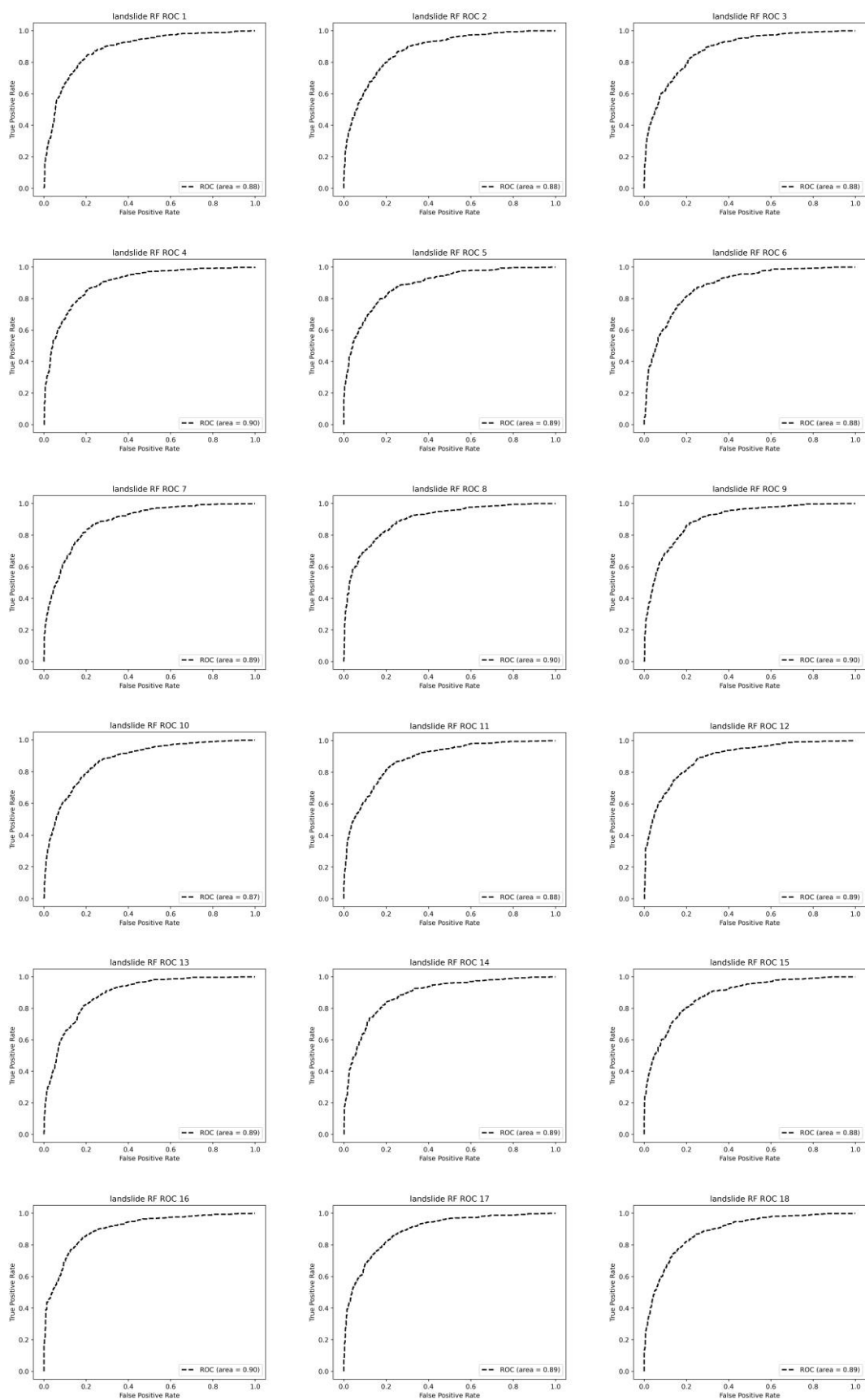


Fig.S 6 ROC curves for wildfire susceptibility using GBDT



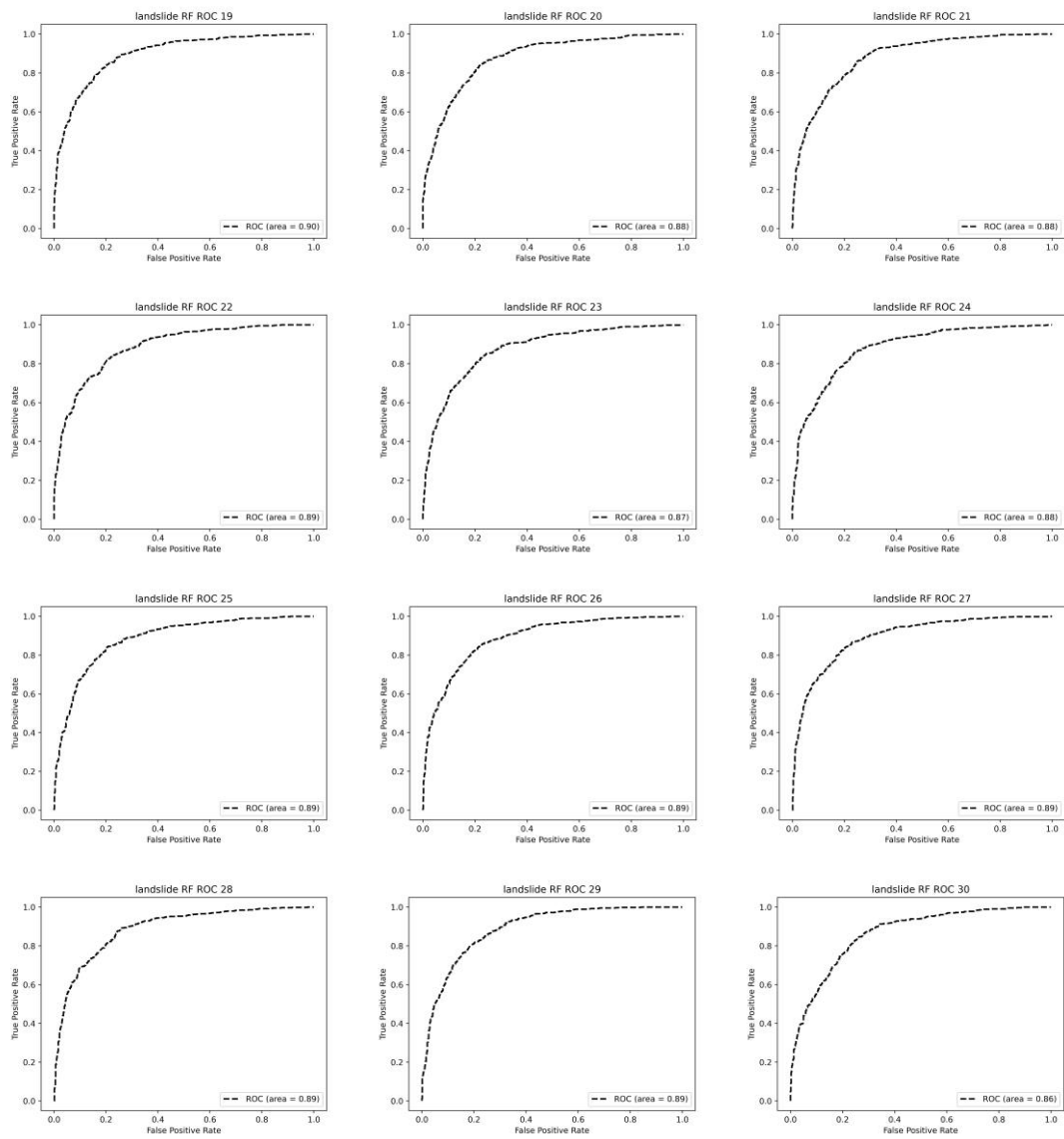
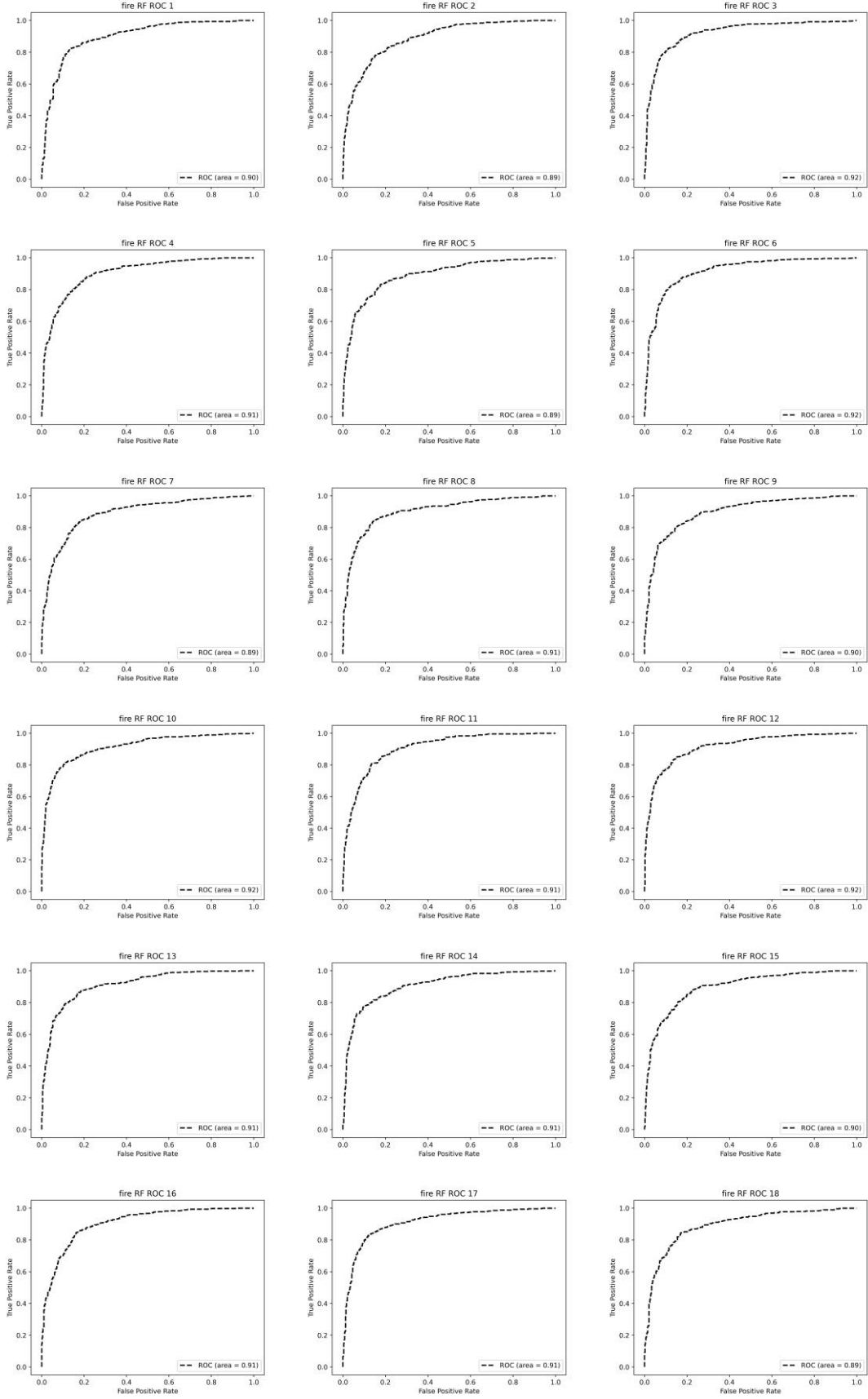


Fig.S 7 ROC curves for landslide susceptibility using RF





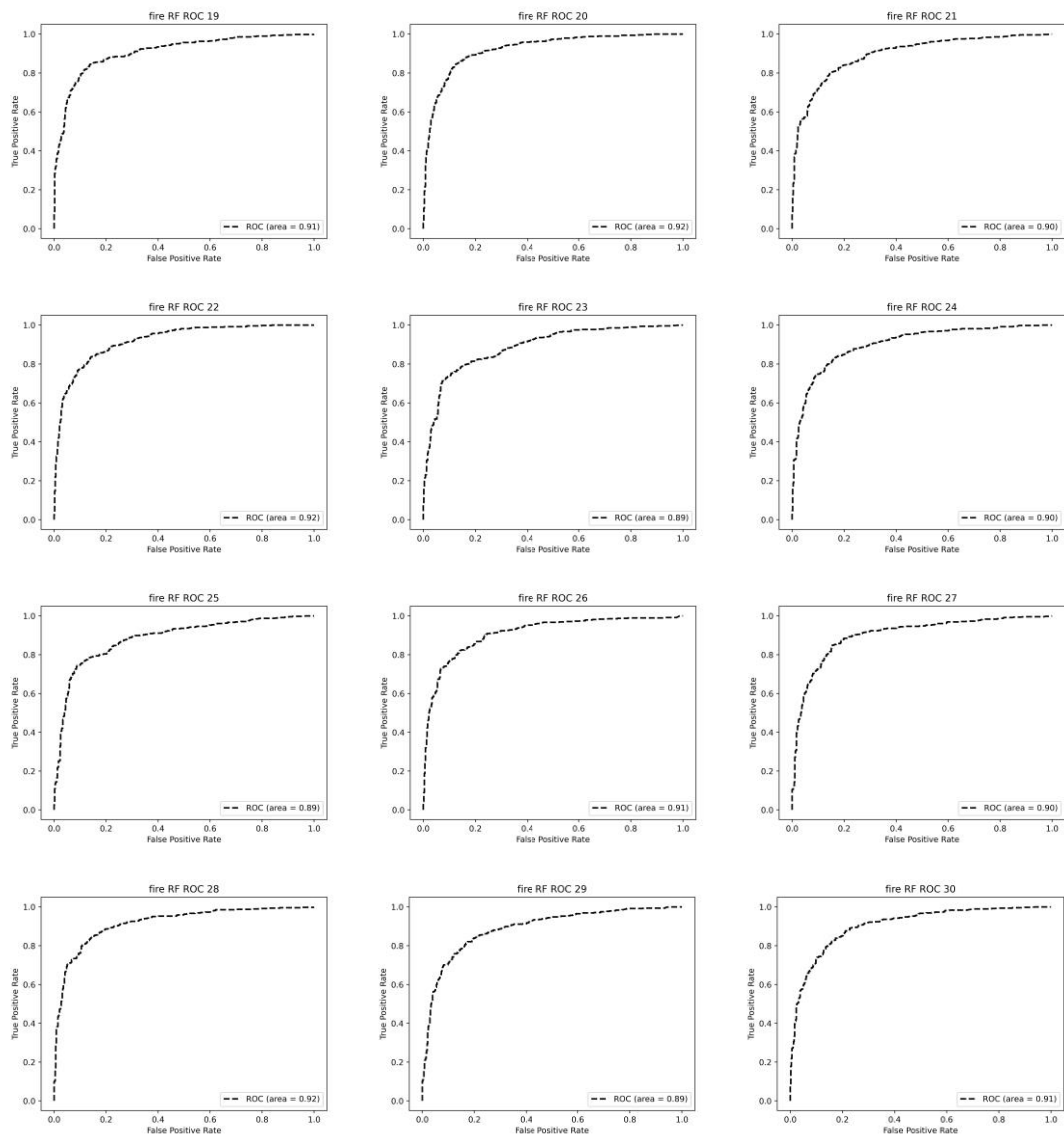


Fig.S 8 ROC curves for wildfire susceptibility using RF