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Supplementary material for

Exploring spatially varying relationships between forest fire and environmental factors at different quantile levels

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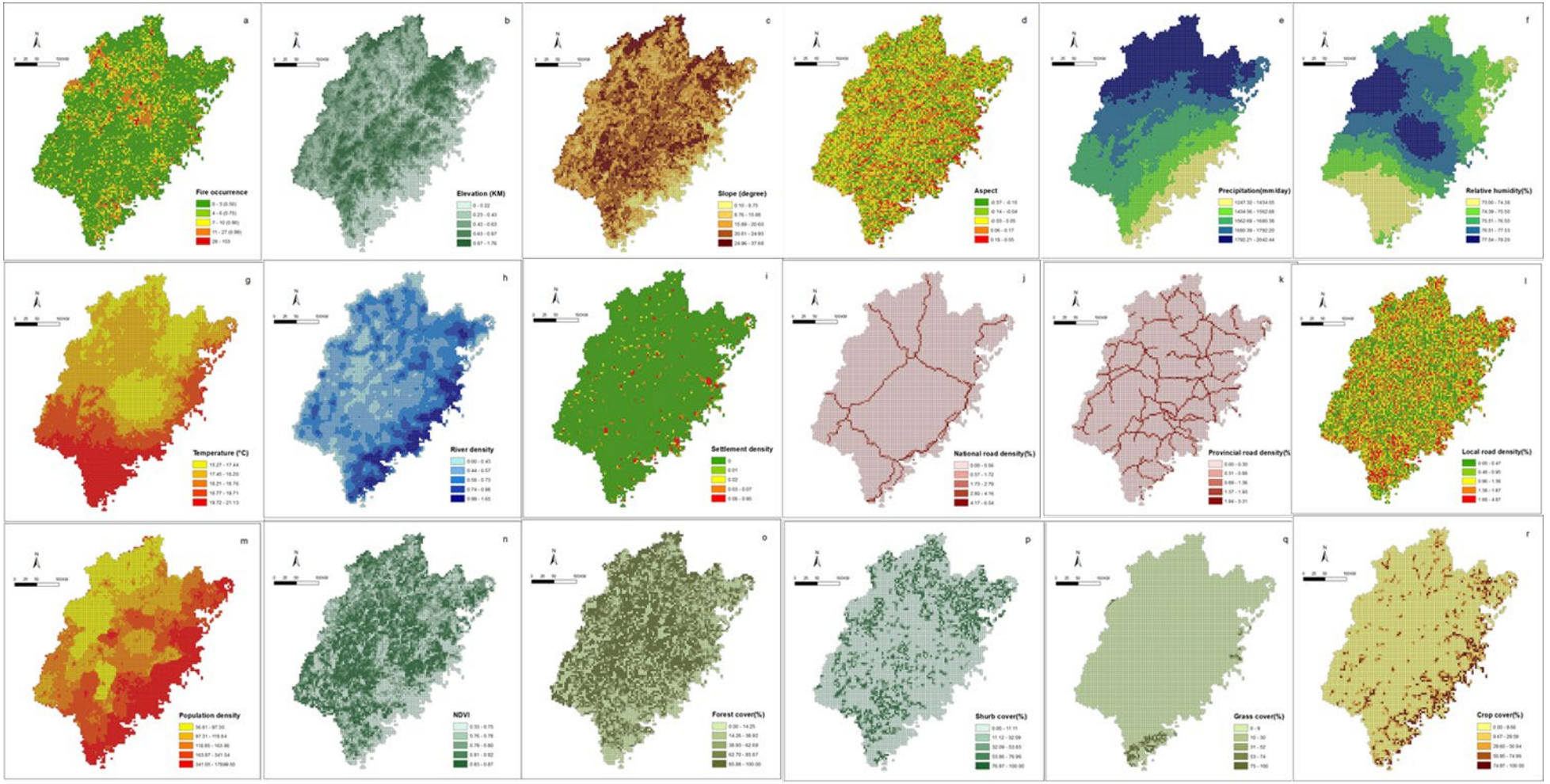


Figure S1. Spatial distributions of (a) Forest fire counts classified by quantiles, (b) Elevation, (c) Slope, (d) Aspect, (e) Precipitation, (f) Relative humidity, (g) Temperature, (h) River density, (i) Settlement density, (j) National road density, (k) Provincial road density, (l) Local road density, (m) Population density, (n) NDVI, (o) Forest cover, (p) Shrub cover, (q) Grass cover, and (r) Crop cover.

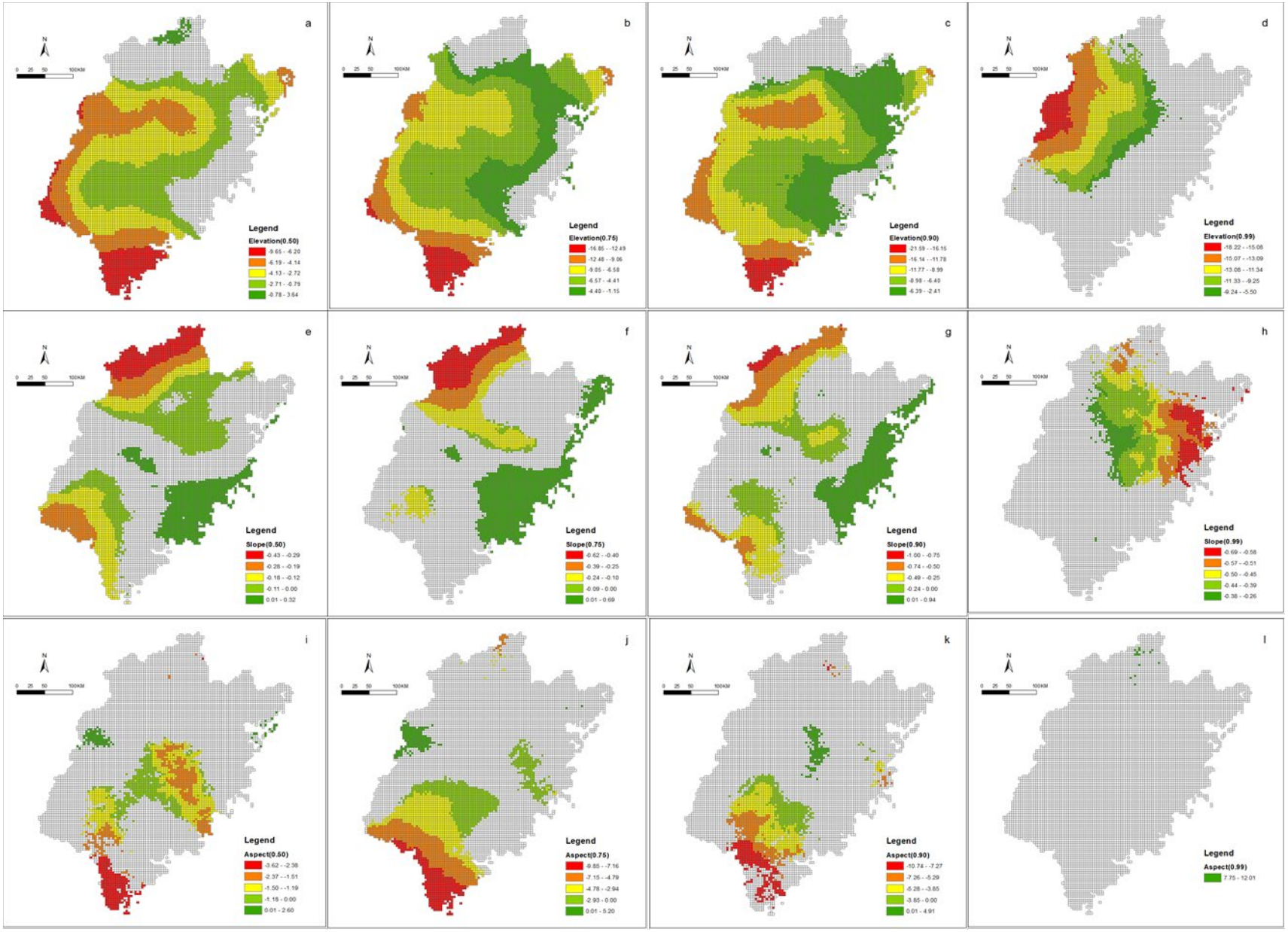


Figure S2. Spatial maps of significant model coefficients of GWQR for topographical predictors. Significance of local model coefficients were determined based on the *p*-value of a local t-test smaller than $\alpha = 0.05$ at a specified quantile (i.e., $\tau = 0.50$, 0.75, 0.90, and 0.99). Grey pixels represent non-significant model coefficients. A larger quantile τ indicates more fire occurrences or higher wildfire risk.

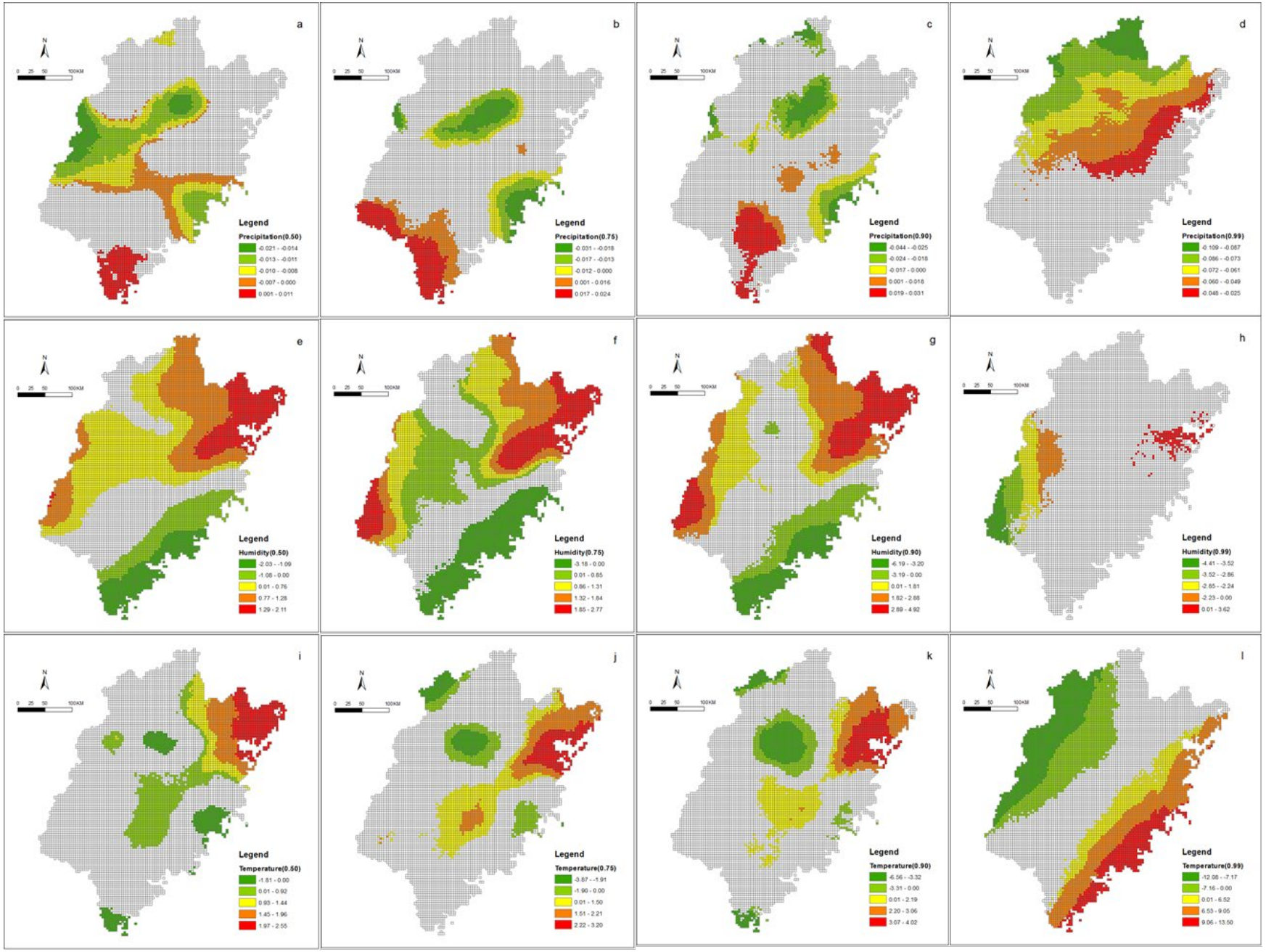
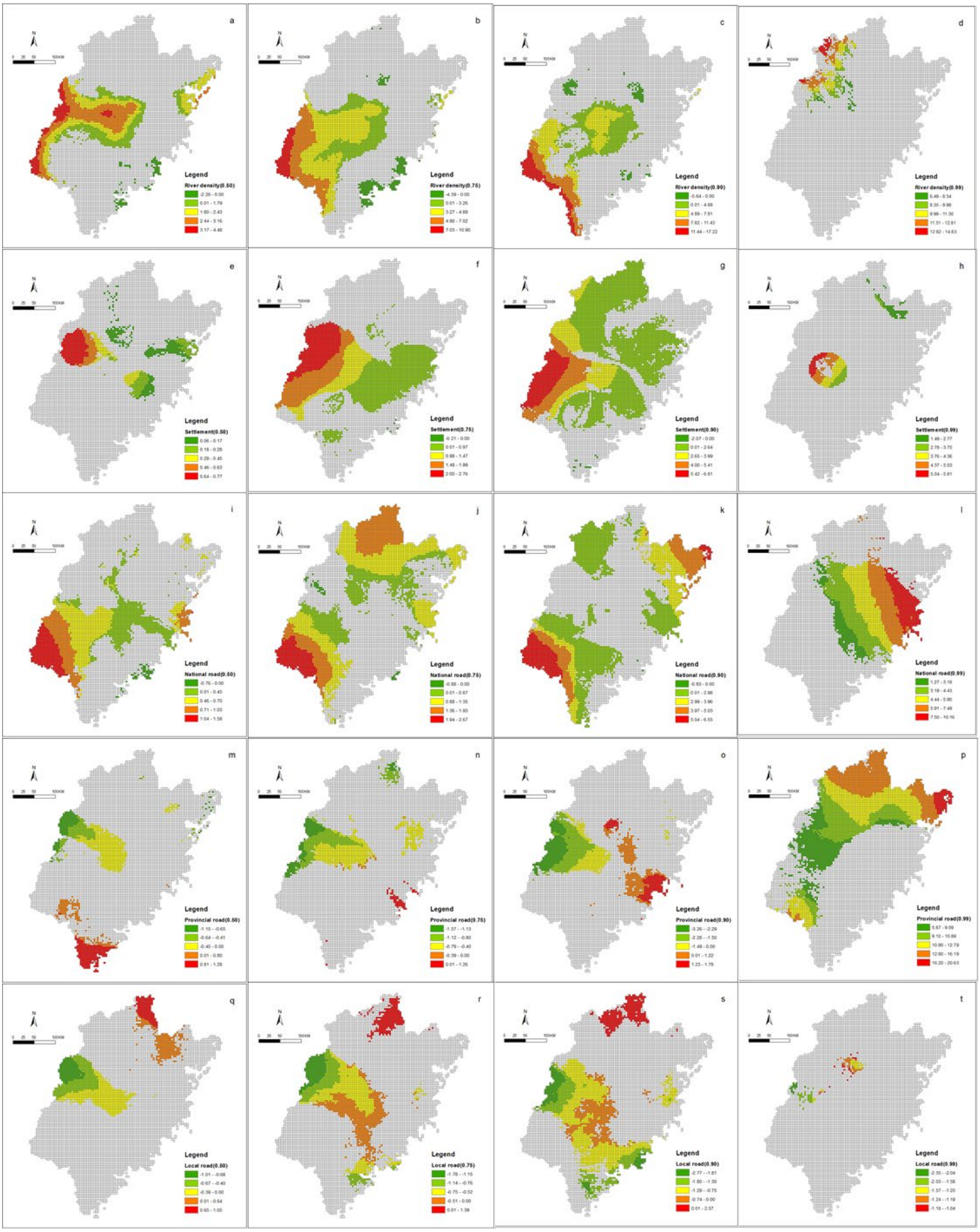


Figure S3. Spatial maps of the significant coefficients of GWQR for meteorological predictors. Significance of local model coefficients were determined based on the *p*-value of a local t-test smaller than $\alpha = 0.05$ at a specified quantile (i.e., $\tau = 0.50$, 0.75, 0.90, and 0.99). Grey pixels represent non-significant model coefficients. A larger quantile τ indicates more fire occurrences or higher wildfire risk.


a
River density(0.50)
-0.26 - 0.00
0.01 - 1.79
1.80 - 2.43
2.44 - 3.16
3.17 - 4.48
b
River density(0.75)
-4.59 - 0.00
0.01 - 3.26
3.27 - 4.89
4.90 - 7.02
7.03 - 10.90
c
River density(0.90)
-5.64 - 0.00
0.01 - 4.88
4.89 - 7.81
7.82 - 11.43
11.44 - 17.22
d
River density(0.99)
6.49 - 8.34
8.35 - 9.98
9.99 - 11.30
11.31 - 12.81
12.82 - 14.83
e
Settlement(0.50)
0.06 - 0.17
0.18 - 0.28
0.29 - 0.45
0.46 - 0.63
0.64 - 0.77
f
Settlement(0.75)
-0.21 - 0.00
0.01 - 0.97
0.98 - 1.47
1.48 - 1.99
2.00 - 2.76
g
Settlement(0.90)
-2.07 - 0.00
0.01 - 2.64
2.65 - 3.99
4.00 - 5.41
5.42 - 6.61
h
Settlement(0.99)
1.49 - 2.77
2.78 - 3.75
3.76 - 4.36
4.37 - 5.03
5.04 - 5.81
i
National road(0.50)
-0.76 - 0.00
0.01 - 0.45
0.46 - 0.70
0.71 - 1.03
1.04 - 1.58
j
National road(0.75)
-0.88 - 0.00
0.01 - 0.87
0.88 - 1.35
1.36 - 1.93
1.94 - 2.67
k
National road(0.90)
-0.83 - 0.00
0.01 - 2.98
2.99 - 3.96
3.97 - 5.03
5.04 - 6.55
l
National road(0.99)
1.27 - 3.18
3.19 - 4.43
4.44 - 5.90
5.91 - 7.49
7.50 - 10.16
m
Provincial road(0.50)
-1.10 - -0.65
-0.64 - -0.41
-0.40 - 0.00
0.01 - 0.80
0.81 - 1.26
n
Provincial road(0.75)
-1.57 - -1.13
-1.12 - -0.80
-0.79 - -0.40
-0.39 - 0.00
0.01 - 1.26
o
Provincial road(0.90)
-3.26 - -2.29
-2.28 - -1.50
-1.49 - 0.00
0.01 - 1.22
1.23 - 1.78
p
Provincial road(0.99)
6.87 - 9.09
9.10 - 10.89
10.90 - 12.79
12.80 - 16.19
16.20 - 20.63
q
Local road(0.50)
-1.01 - -0.68
-0.67 - -0.40
-0.39 - 0.00
0.01 - 0.64
0.65 - 1.05
r
Local road(0.75)
-1.78 - -1.15
-1.14 - -0.76
-0.75 - -0.52
-0.51 - 0.00
0.01 - 1.39
s
Local road(0.90)
-2.77 - -1.81
-1.80 - -1.30
-1.29 - -0.73
-0.74 - 0.00
0.01 - 2.37
t
Local road(0.99)
-2.35 - -2.04
-2.03 - -1.58
-1.57 - -1.25
-1.24 - -1.19
-1.18 - -1.04

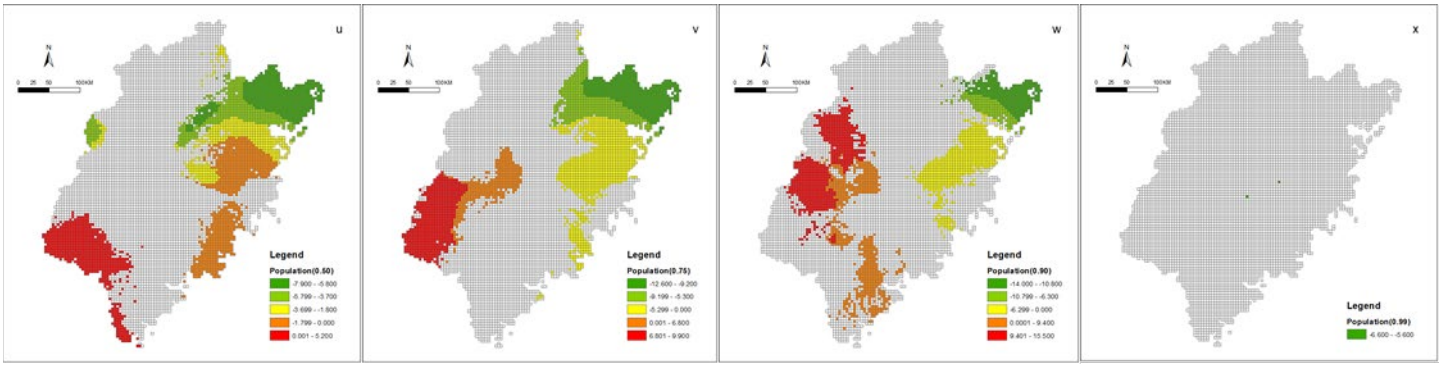


Figure S4. Spatial maps of the significant coefficients of GWQR for human related predictors. Significance of local model coefficients were determined based on the *p*-value of a local t-test smaller than $\alpha = 0.05$ at a specified quantile (i.e., $\tau = 0.50$, 0.75, 0.90, and 0.99). Grey pixels represent non-significant model coefficients. A larger quantile τ indicates more fire occurrences or higher wildfire risk.

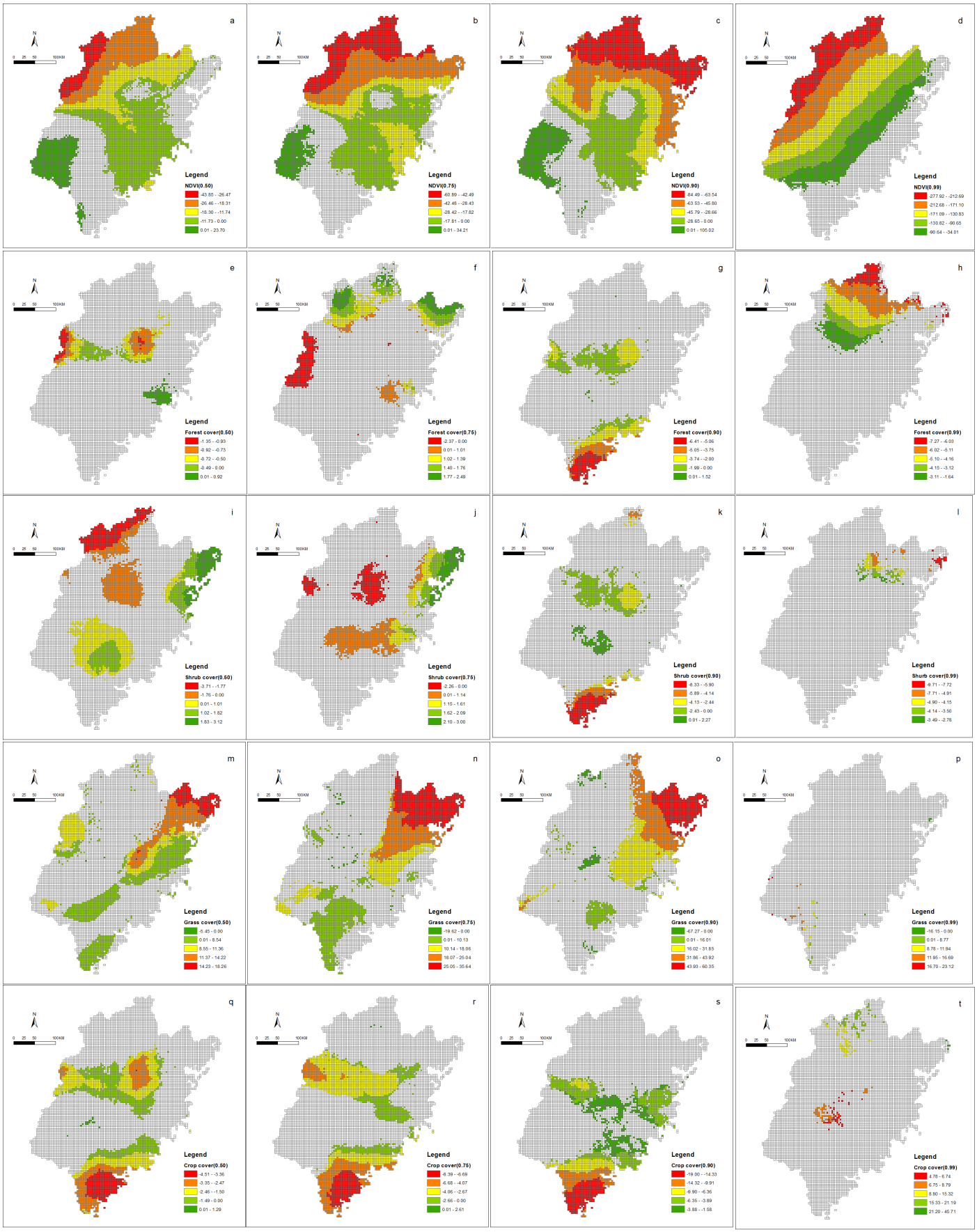


Figure S5. Spatial maps of the significant coefficients of GWQR for vegetation and land use predictors. Significance of local model coefficients were determined based on the *p*-value of a local t-test smaller than $\alpha = 0.05$ at a specified quantile (i.e., $\tau = 0.50$, 0.75, 0.90, and 0.99). Grey pixels represent non-significant model coefficients. A larger quantile τ indicates more fire occurrences or higher wildfire risk.