

*for all the analyses below, the dataset was filtered for only odd years (from 1993 to 2015)

Fire count and burnt area by time variables (month & year)

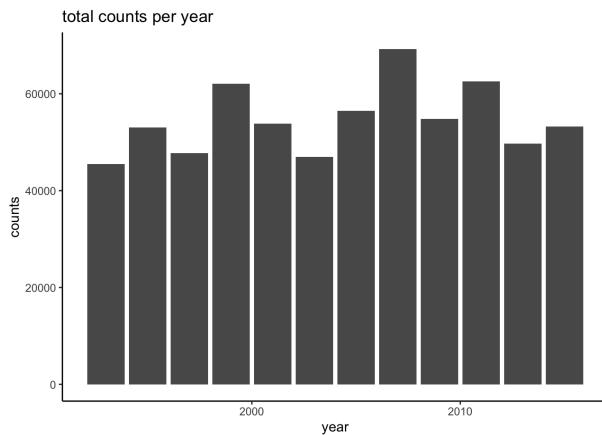


Fig. 1 Total counts of fire per (odd) year

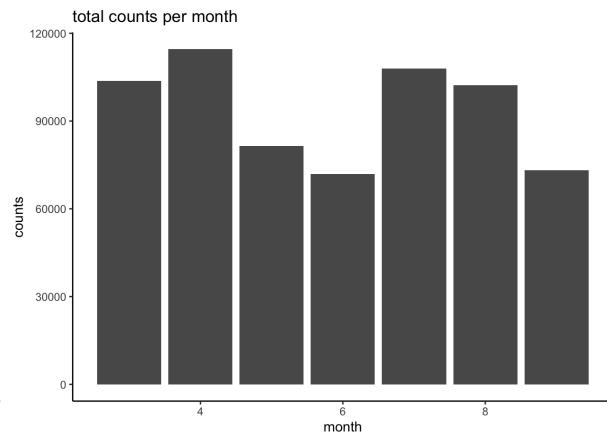


Fig. 2 Total counts of fire per month

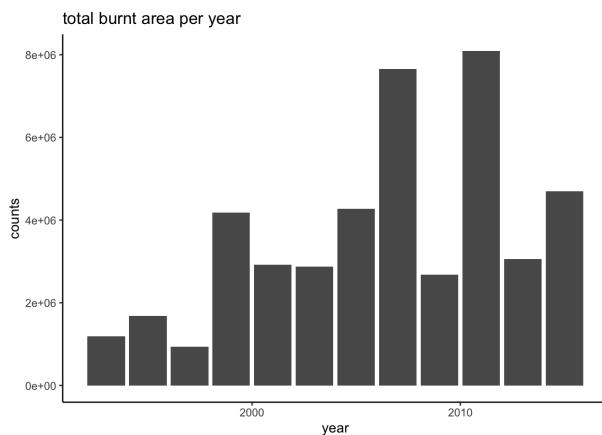


Fig. 3 Total burnt area per (odd) year

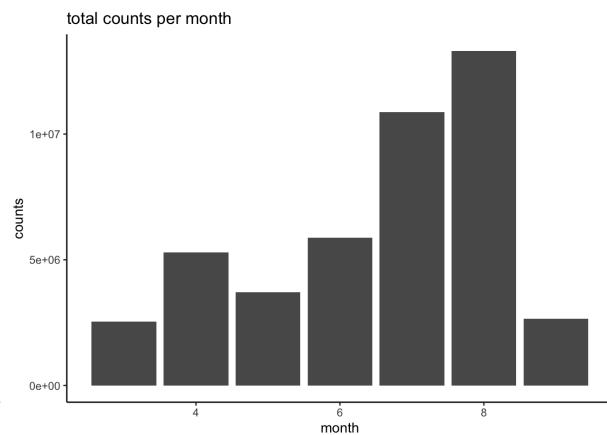


Fig. 4 Total burnt area per month

year	Count	Burnt area
1993	45459	1190780.9
1995	53062	1685838.8
1997	47767	935672.4
1999	62069	4179791.5
2001	53842	2920318.7
2003	46983	2877202.2
2005	56476	4272549.5
2007	69225	7649201.7
2009	54860	2679412.5
2011	62574	8089047.6
2013	49669	3053301.5
2015	53245	4699430.1

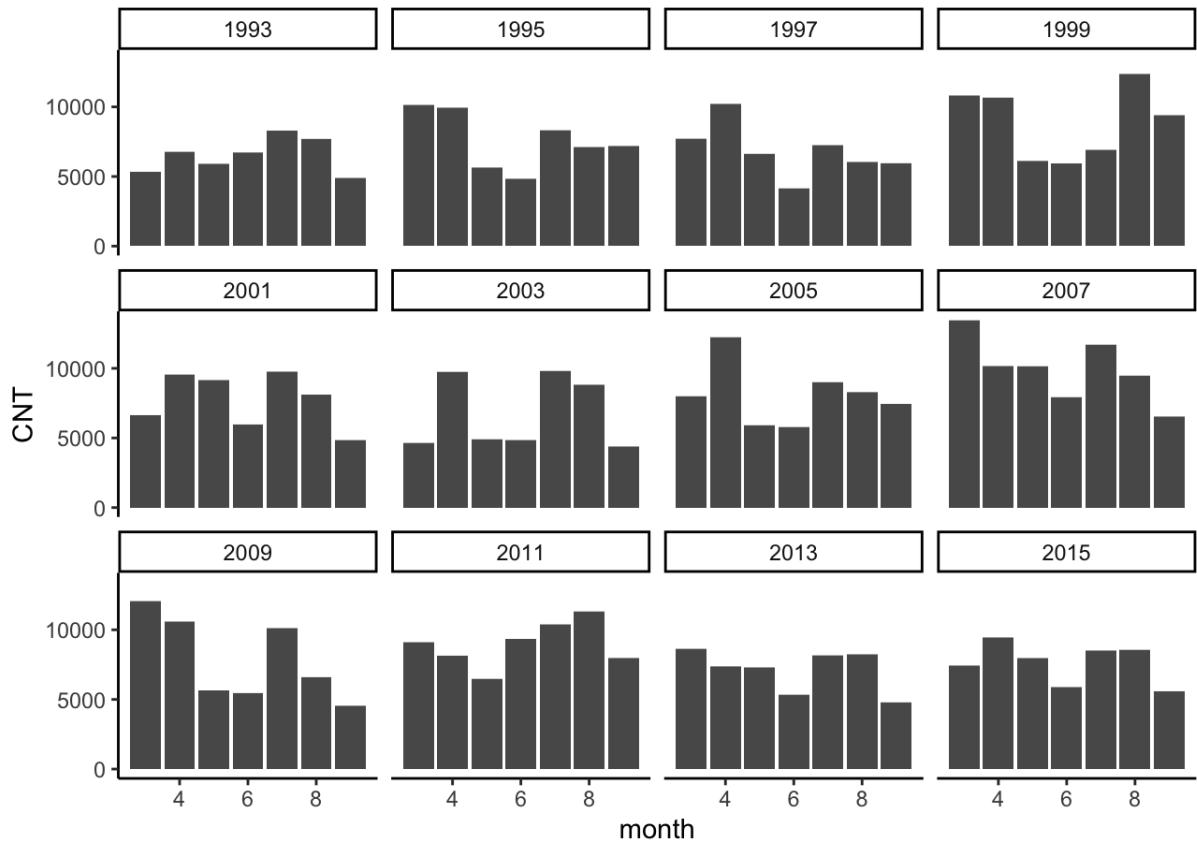


Fig. 5 Total fire count over odd years

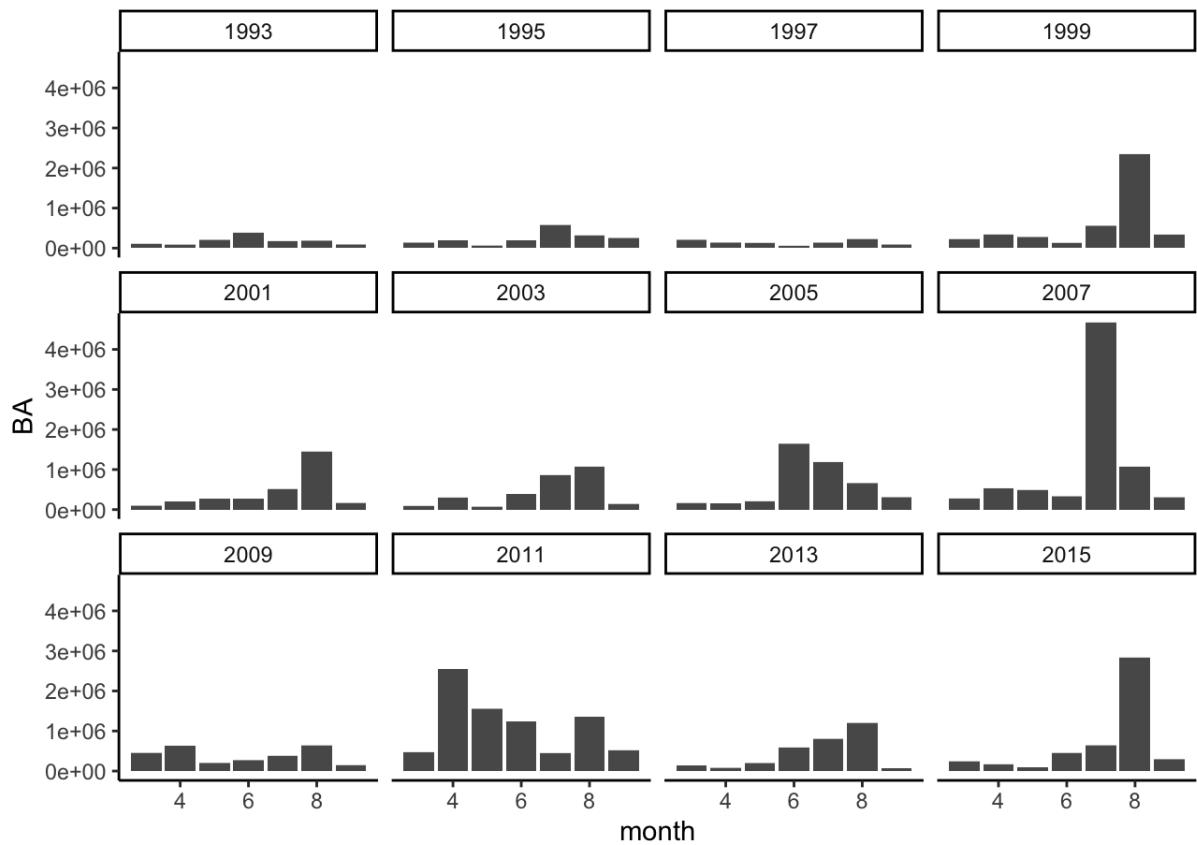


Fig. 6 Total burnt area over odd years

Fire count and burnt area by location

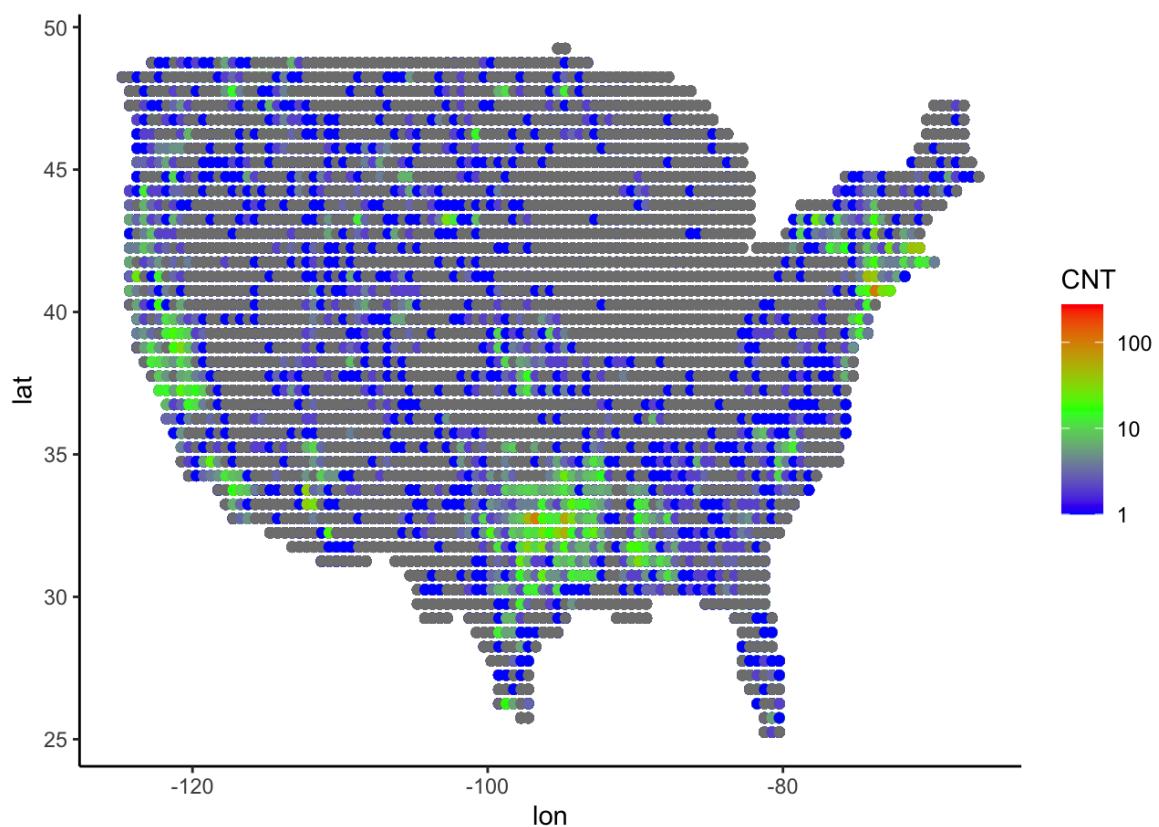


Fig. 5 Locations of all fires

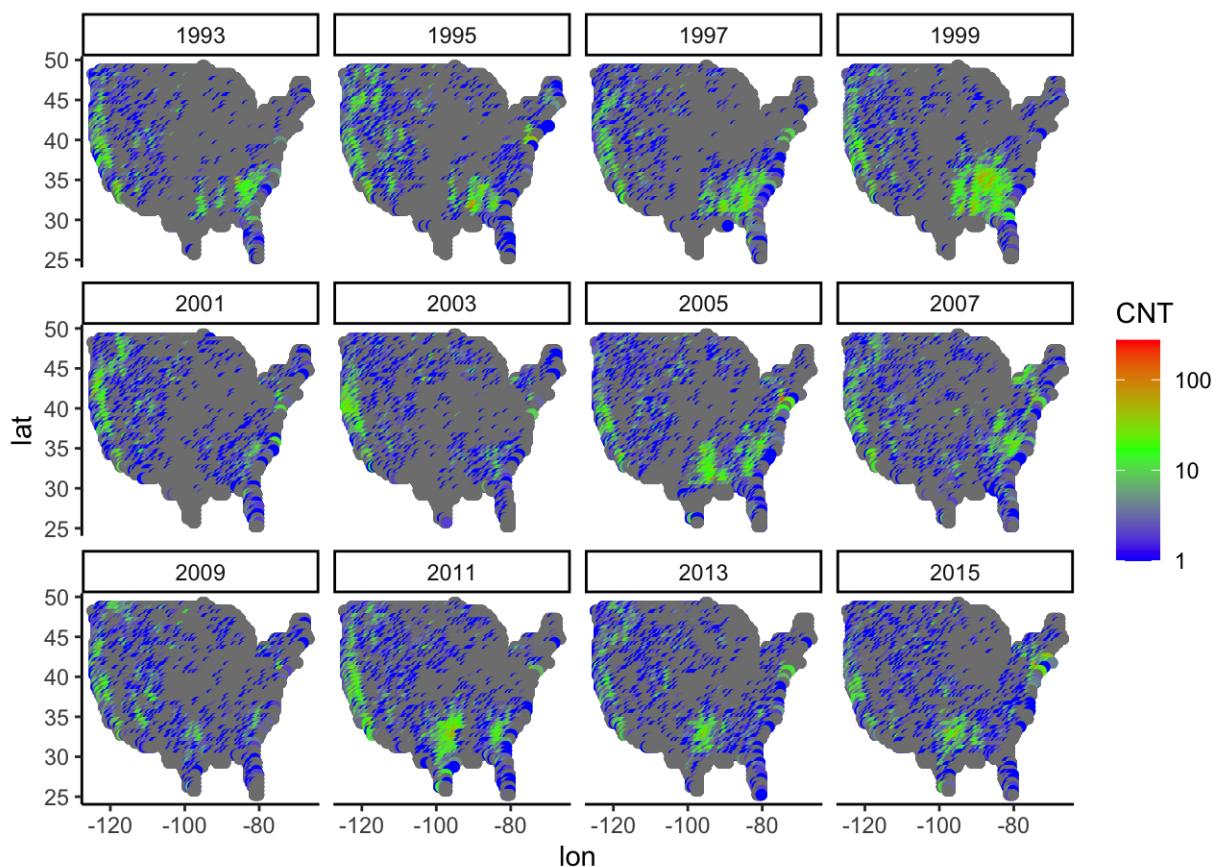


Fig. 6 Locations of fires (by year)

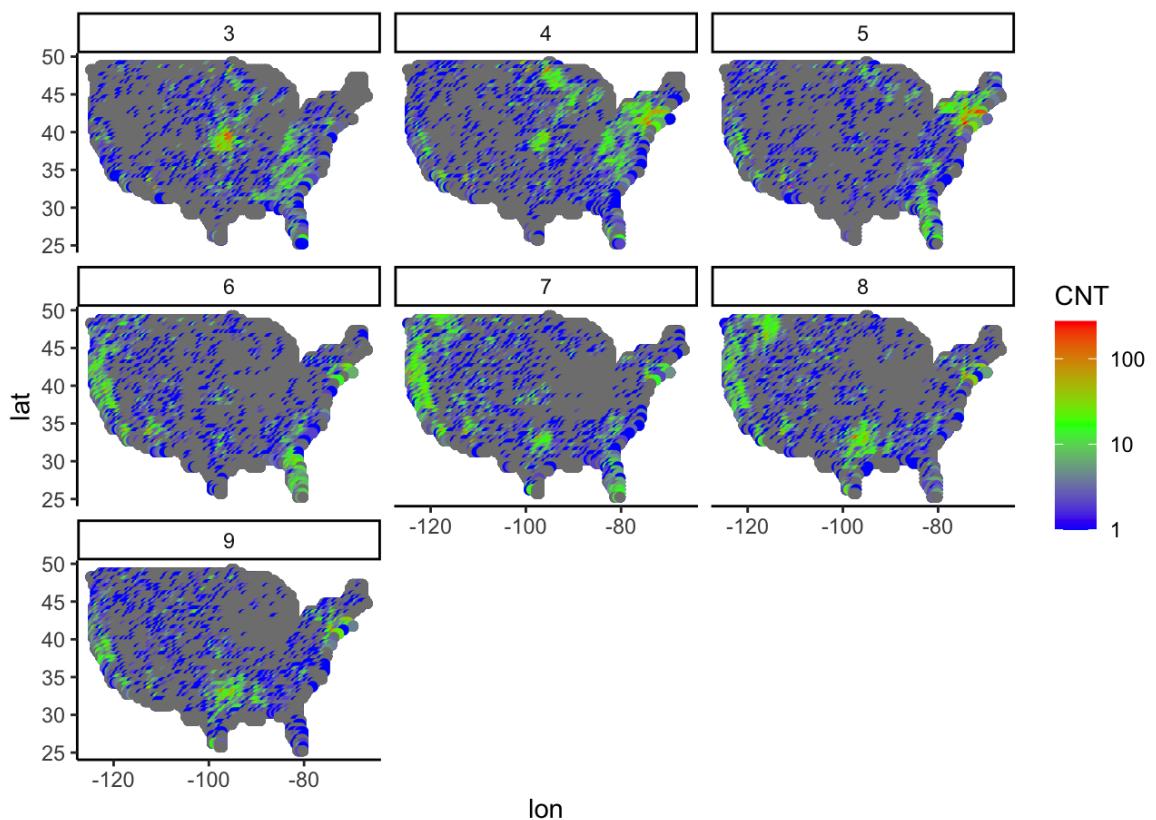


Fig. 7 Locations of fires (by month)

Meteorological Variables

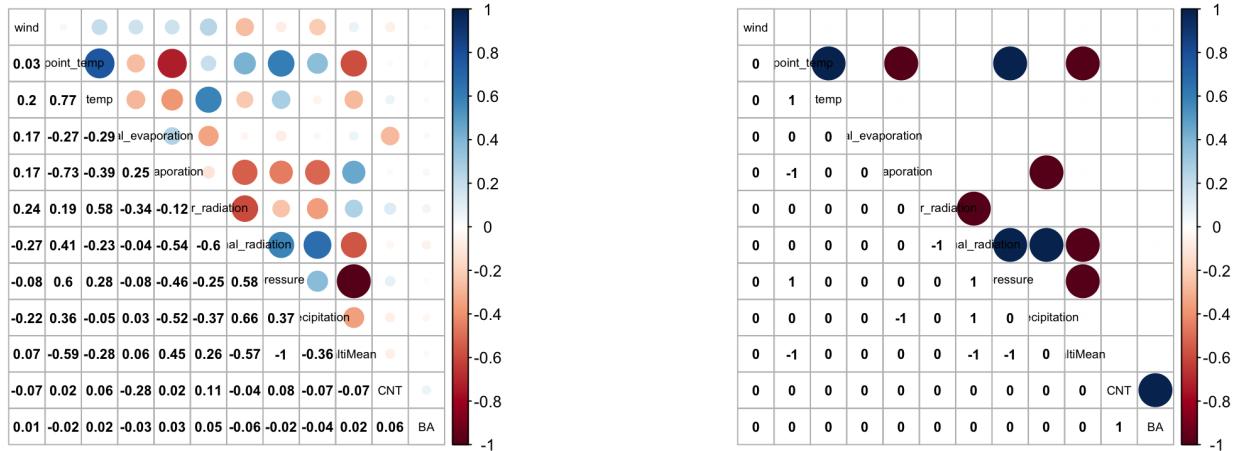


Fig 8. Pearson's (left) and Spearman's (right) correlation coefficients for weather variables

	Pearson's	Spearman's	Plot
Dew point temperature vs temperature	0.77	1	
Dew point temperature vs evaporation	-0.73	-1	
Dewpoint temperature vs pressure	0.6	1	
Dewpoint temperature vs mean altitude	-0.59	-1	

Thermal vs solar radiation	-0.6	-1	
Pressure vs mean altitude	-1	-1	

Note on the correlation coefficients:

Pearson's correlation coefficient

- Assesses linear correlations

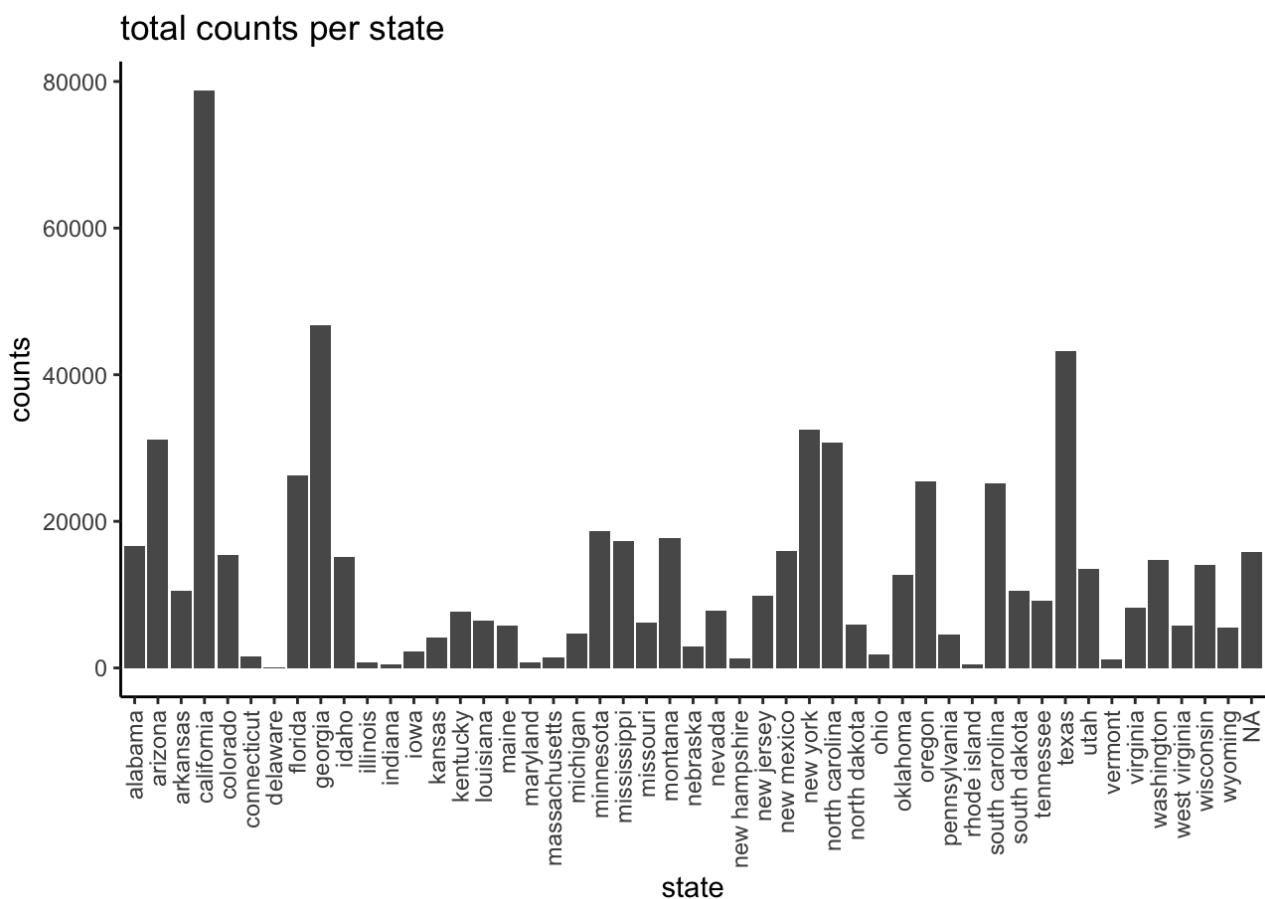
Spearman's rank correlation coefficient (or Spearman's ρ)

- Assesses monotonic relationships (could be non-linear) — two variables described by a monotonic function
- Pearson's correlation coefficient between rank variables
- Higher correlation for more similar observations (similar rank)
- Spearman's $\rho = +1 \implies$ monotonically increasing relationship
- Spearman's $\rho = -1 \implies$ monotonically decreasing relationship

For comparison of Pearson's and Spearman's correlation coefficient:

<https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/regression/supporting-topics/basics/a-comparison-of-the-pearson-and-spearman-correlation-methods/>

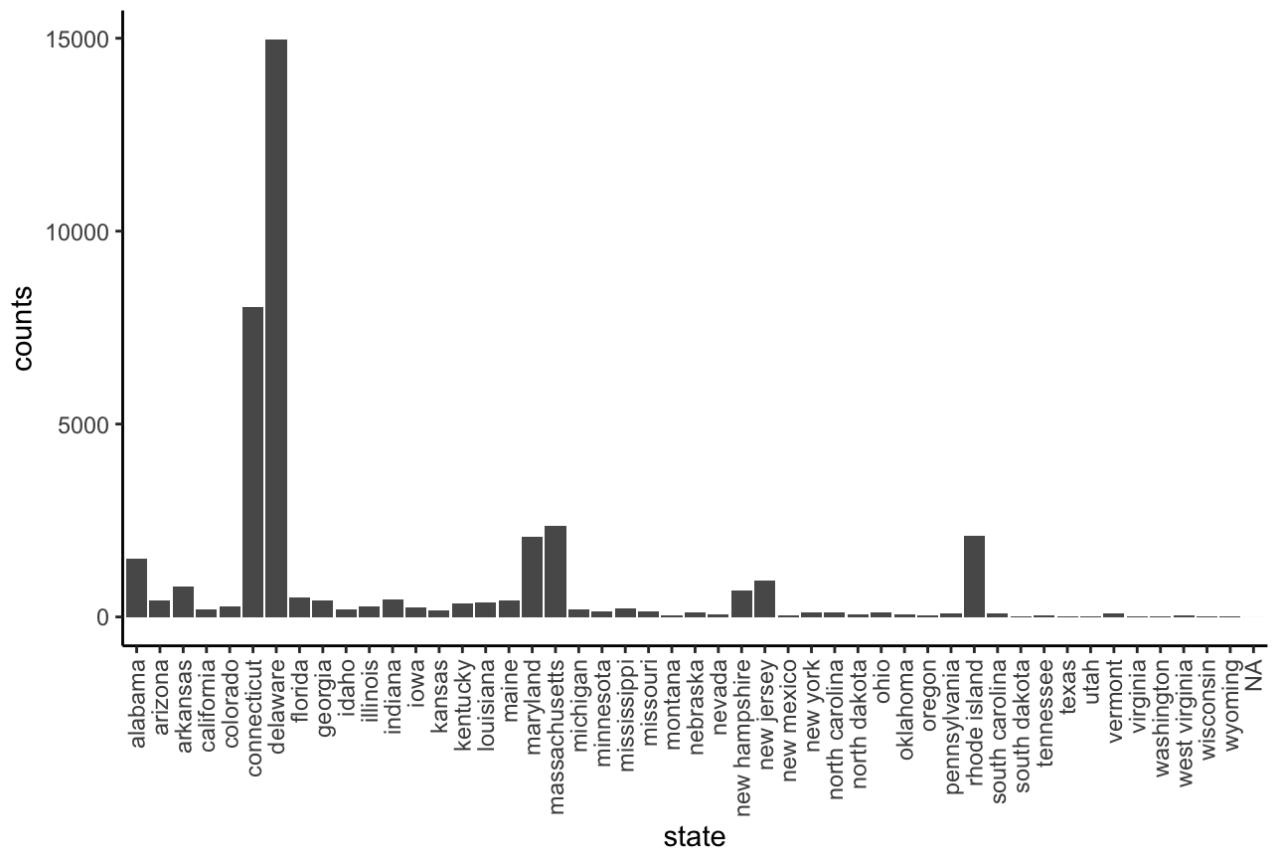
By State (just for reference)



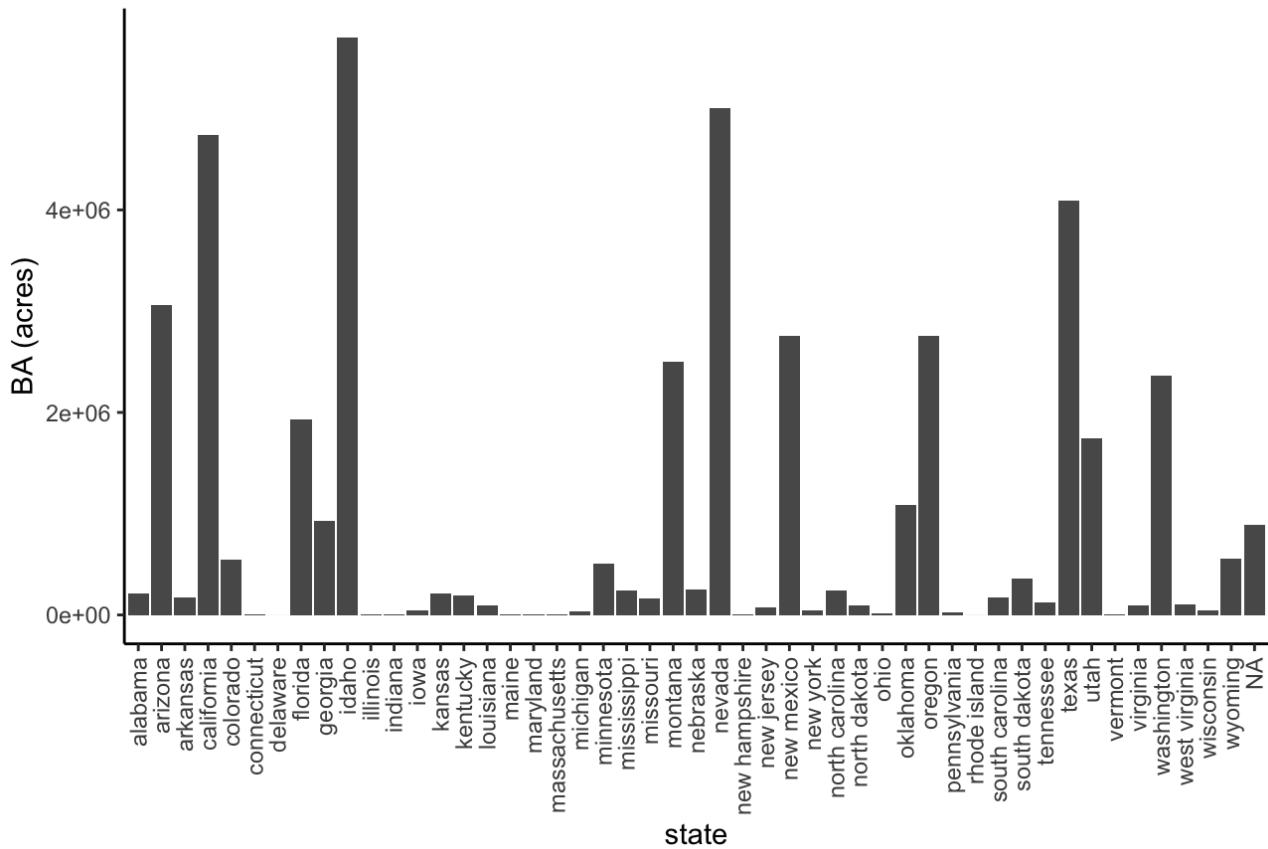
Highest & lowest 6 states with total fire count

	state	Count		state	Count
1	california	78785	44	vermont	1183
2	georgia	46692	45	illinois	799
3	tx	43244	46	maryland	712
4	new york	32500	47	indiana	475
5	arizona	31209	48	rhode island	435
6	north carolina	30688	49	delaware	84

avg counts per area by state

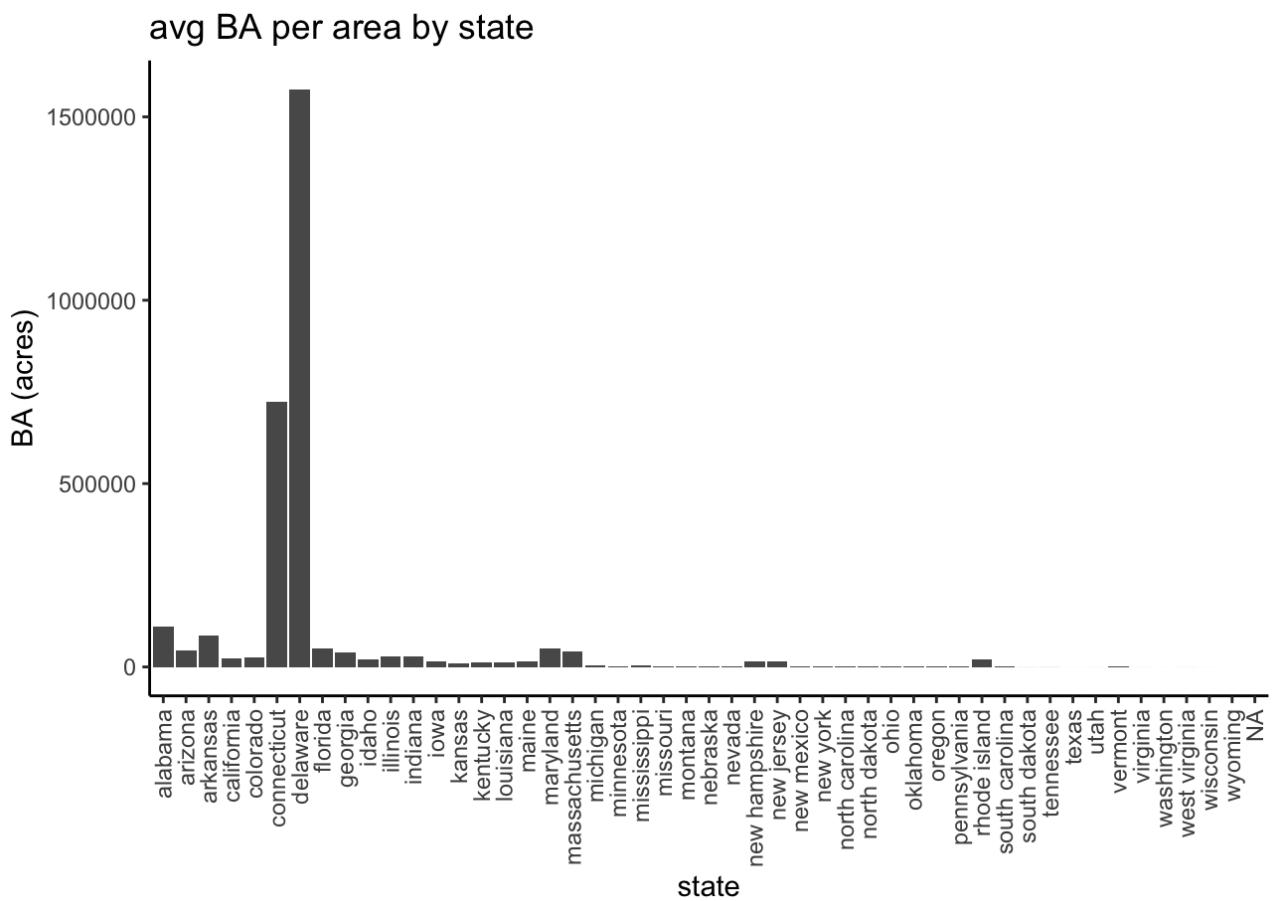


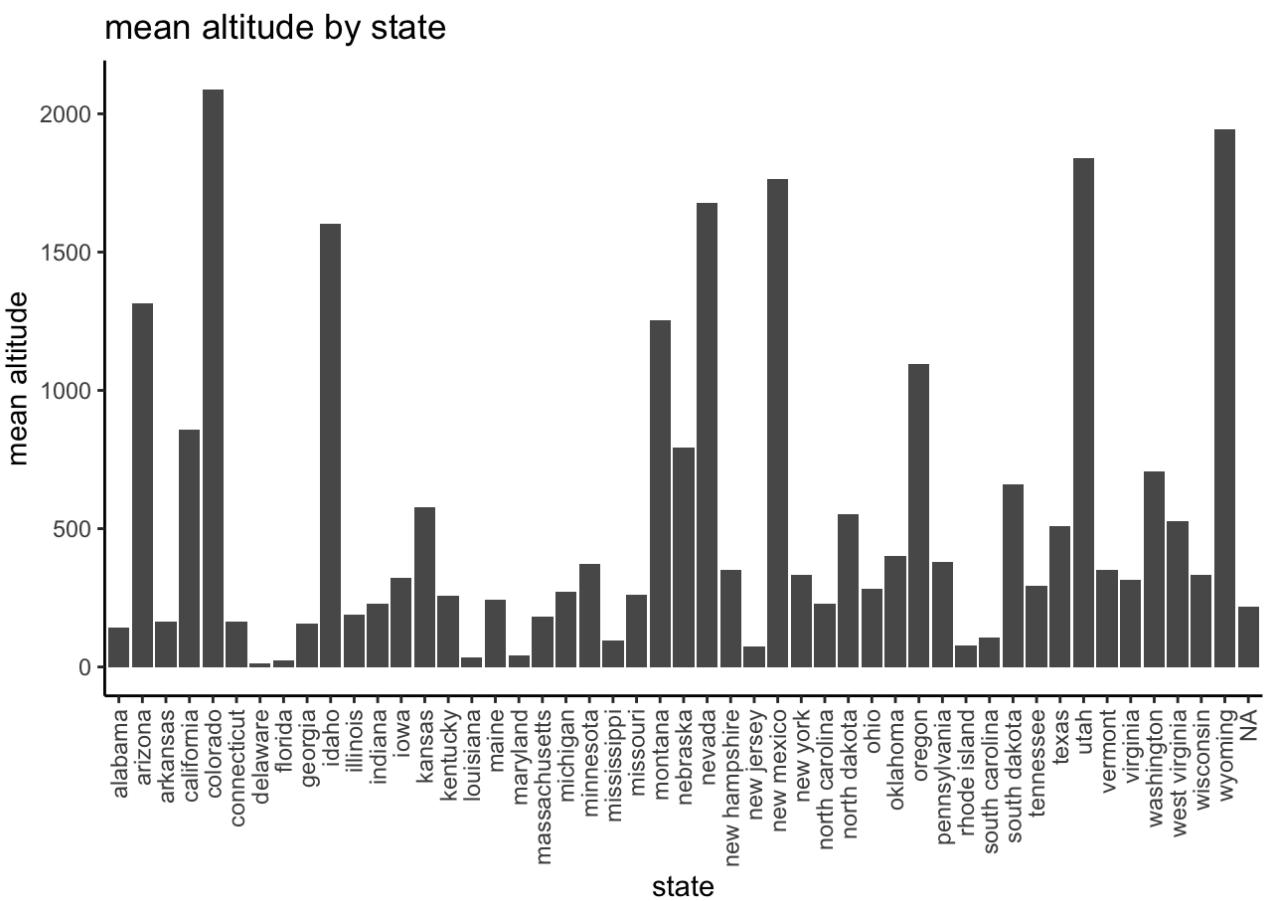
total burnt area by state



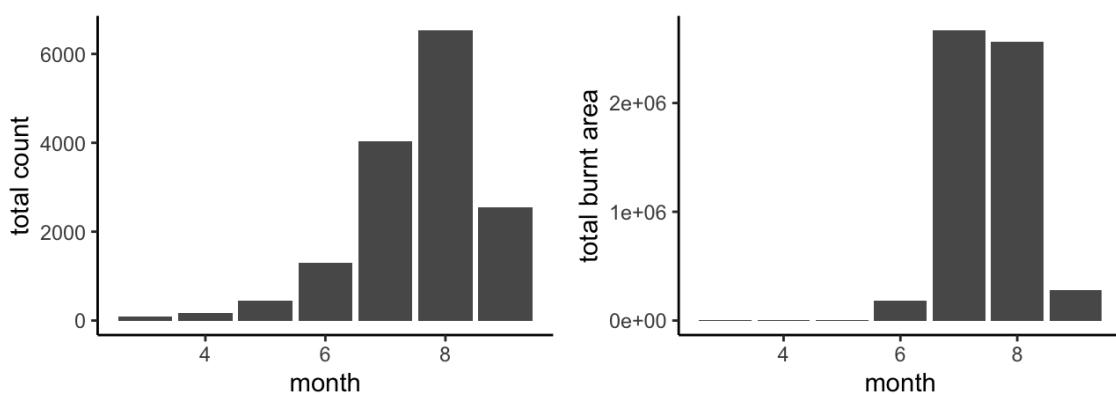
Highest & lowest 6 states with total burnt area

	state	Area (acres)		state	Area (acres)
1	idaho	5704089	44	connecticut	2810.600
2	nevada	5009583	45	vermont	2551.130
3	california	4742439	46	new hampshire	2393.406
4	texas	4090636	47	massachusetts	2105.930
5	arizona	3058597	48	rhode island	658.750
6	oregon	2757302	49	delaware	433.300

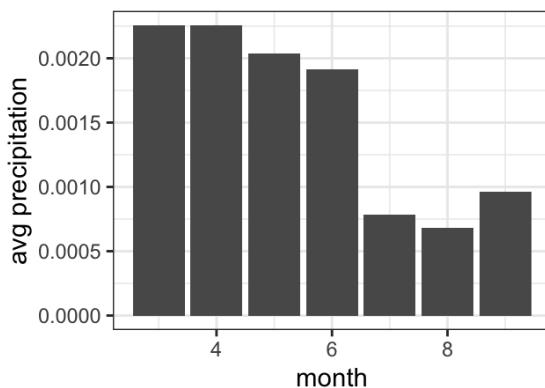
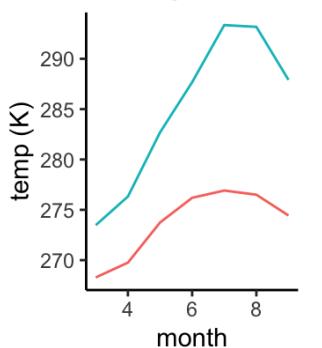




Idaho

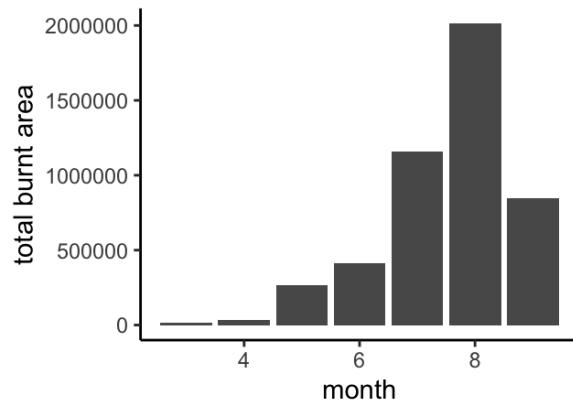
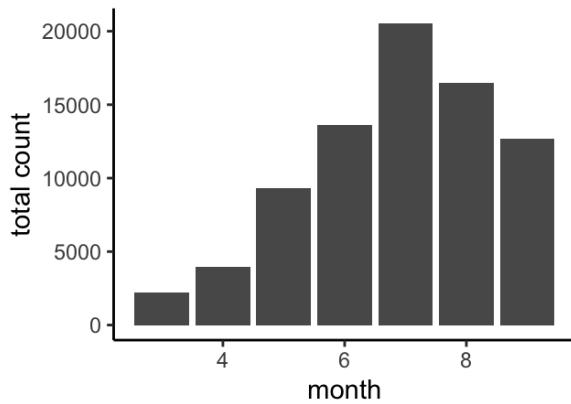


Average temperature and dewpoint

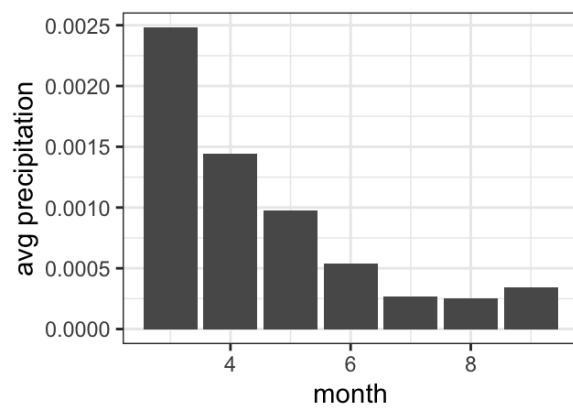
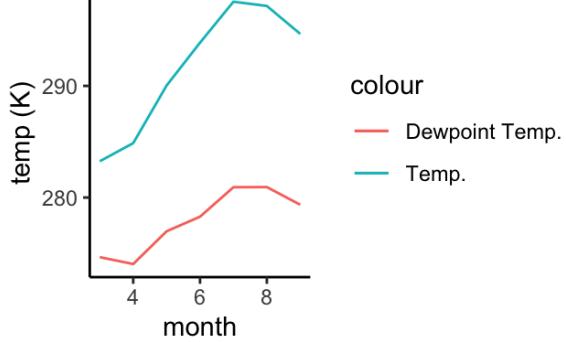


*can plot similar graphs using function in R

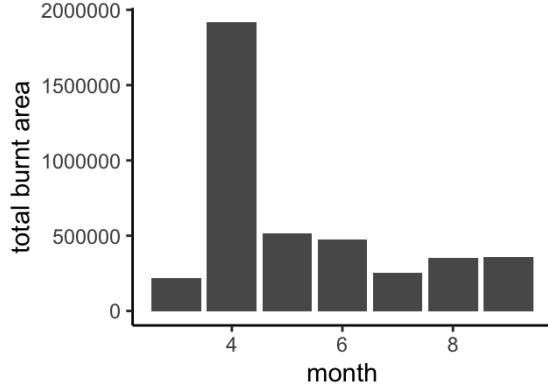
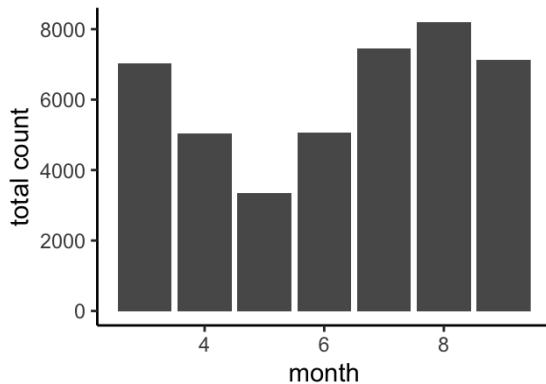
California



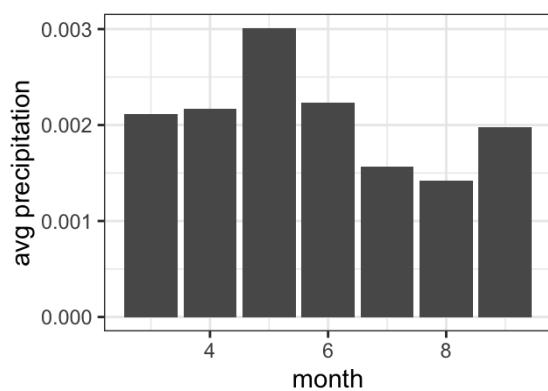
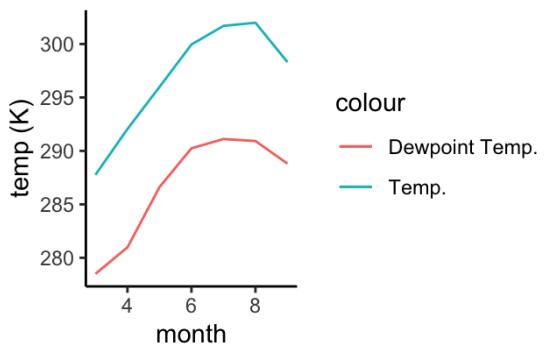
Average temperature and dewpoint1



Texas

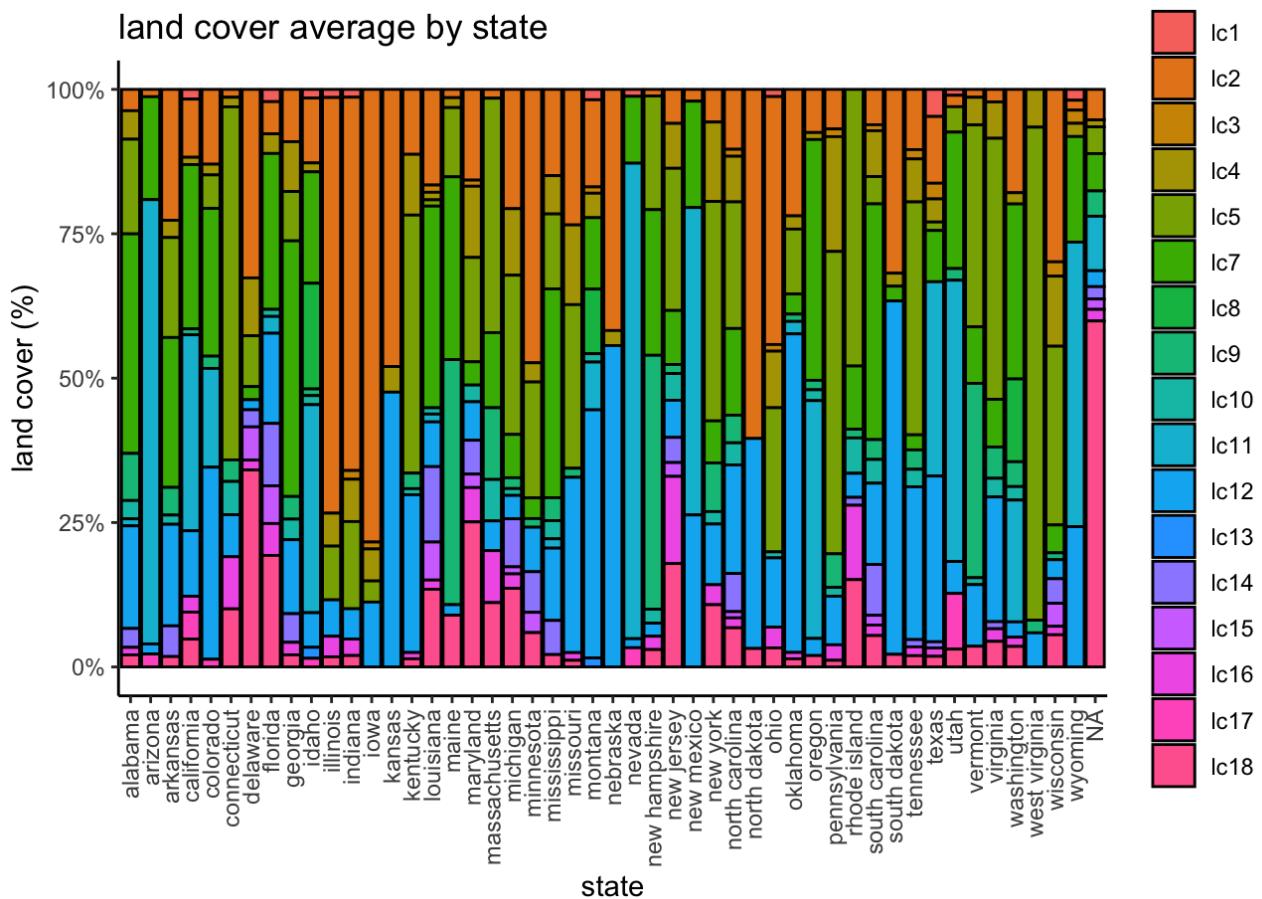


Average temperature and dewpoint1

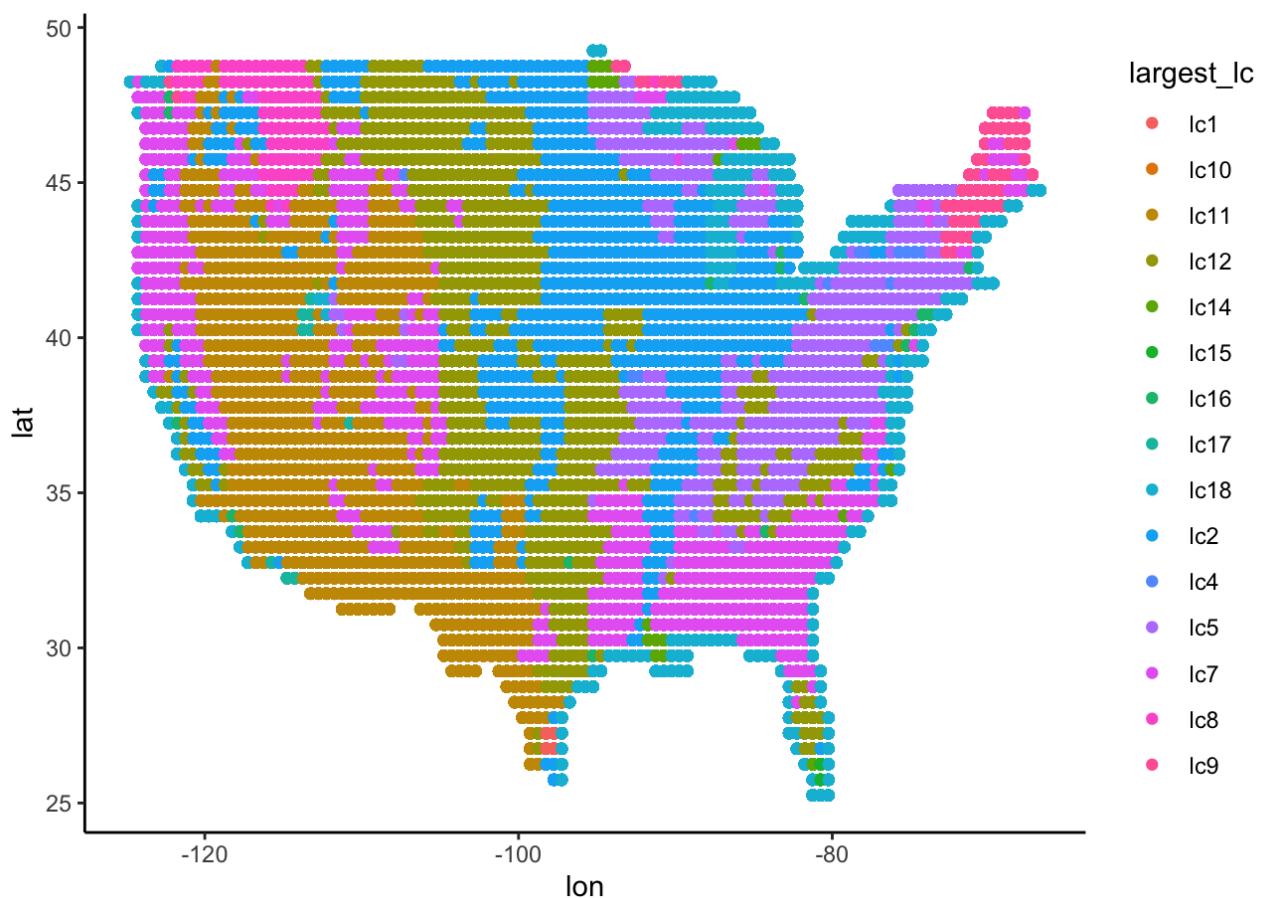


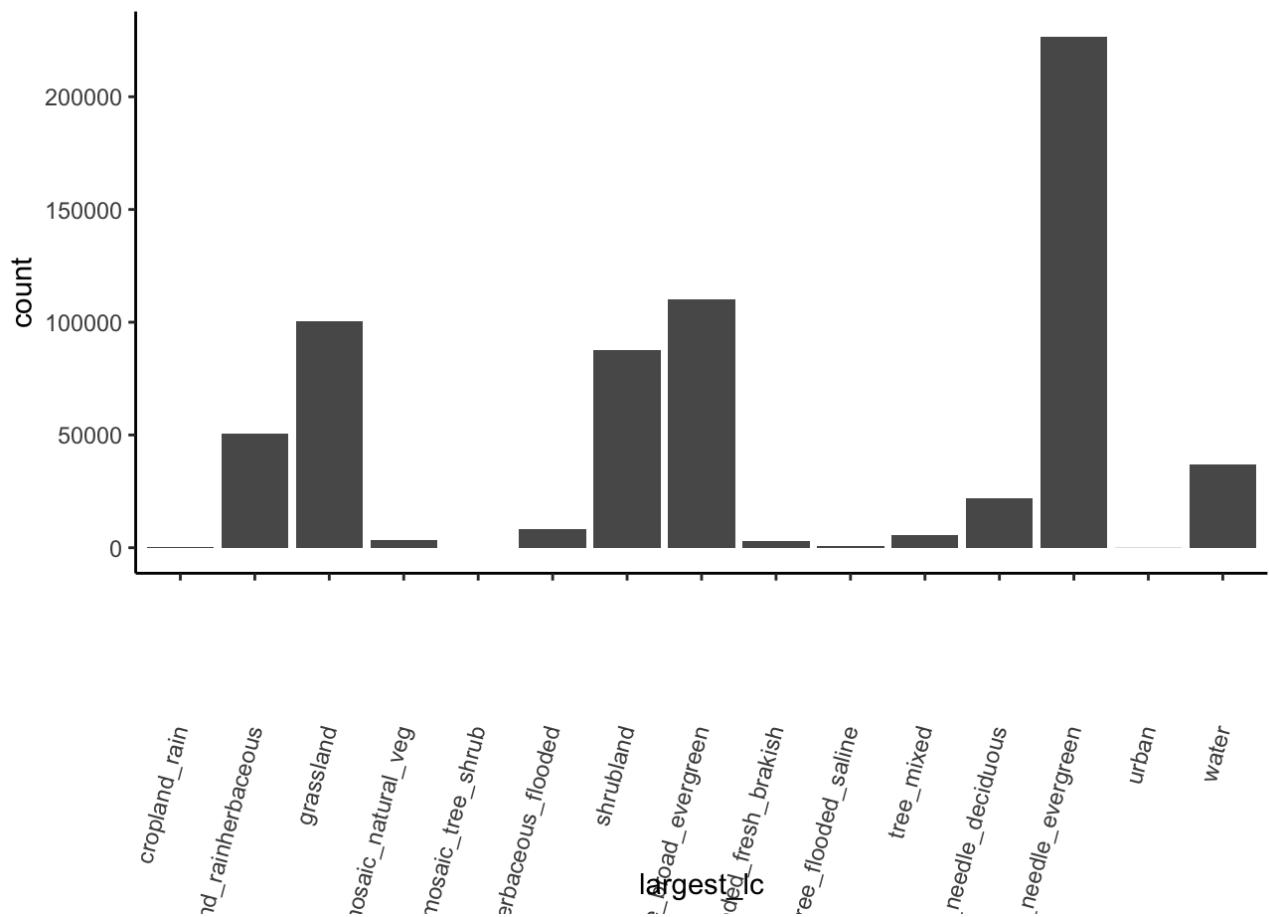
*filtered by > 0.01

land cover average by state



Land Cover

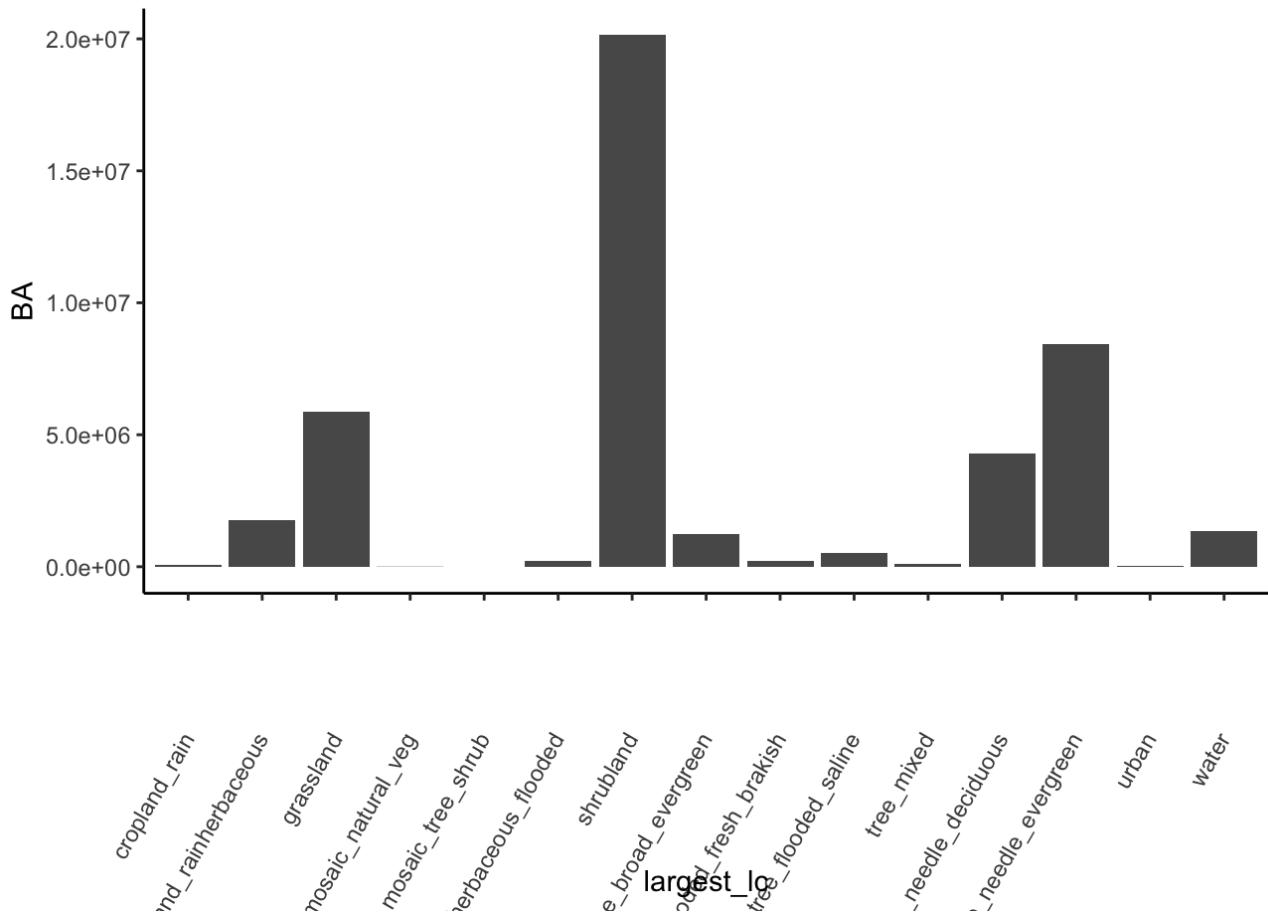




* largest lc is the land cover of biggest percentage in the voxel

* count is total fire count in the corresponding land cover

	largest_lc	n
1	tree_needle_evergreen	226464
2	tree_broad_evergreen	109972
3	grassland	100485
4	shrubland	87872
5	cropland_rainherbaceous	50527
6	water	36799
7	tree_needle_deciduous	21851
8	shrub_herbaceous_flooded	8406
9	tree_mixed	5517
10	mosaic_natural_veg	3324
11	tree_flooded_fresh_brakish	2862
12	tree_flooded_saline	900
13	cropland_rain	166
14	urban	86
15	mosaic_tree_shrub	0



	largest_lc	ba
1	shrubland	20141828.25
2	tree_needle_evergreen	8423085.06
3	grassland	5869397.47
4	tree_needle_deciduous	4295633.04
5	cropland_rainherbaceous	1778990.40
6	water	1363170.45
7	tree_broad_evergreen	1219843.19
8	tree_flooded_saline	505032.21
9	shrub_herbaceous_flooded	231759.35
10	tree_flooded_fresh_brakish	207127.95
11	tree_mixed	96499.16
12	cropland_rain	59232.00
13	urban	30593.26
14	mosaic_natural_veg	10355.39
15	mosaic_tree_shrub	0.00

Areas of different land covers

