California Fires (2013-2019)

Overall Statistics

Statistics	Acres Burned	Injuries	Engines	Personnel	Structures Damaged	Structures Destroyed	Structures Threatened
mean	4,813	3.52	23.66	329	68	275	523
std	27,905	3.82	41.09	523	156	1,566	740
max	410,203	26	256	3,100	783	18,804	2,600
var	167	1.95	6.41	23	12	40	27

California Fires
(2013-2019)

Acres Burned per County

- Future investigation:
    - **Import County size from other dataset**
    - **Investigate correlation between County size and burned acreage**
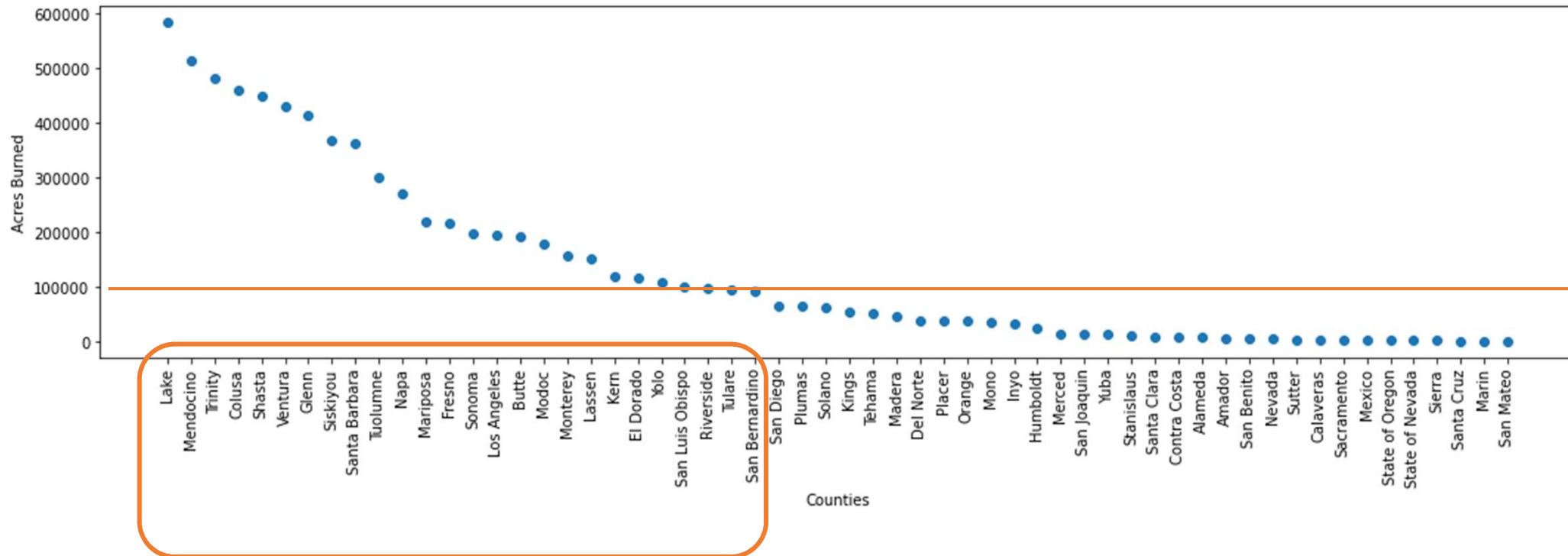
California Fires (2013-2019)

Correlation between County parameters

- Scatter plots were used to investigate Pearson correlation and trendline between pairs of parameters for each County

- <u>Low correlation</u>

  - Injuries vs. Acres Burned : 0.3
  - Structures Destroyed vs. Personnel: 0.3
  - Engines per Acre Burned: 0.4
  - Structures Destroyed vs. Personnel: 0.4

- <u>High correlation</u>

  - Injuries vs. Personnel: 0.7
  - Injuries vs. Crews: 0.7

Structures Damaged vs Personnel:
  - for all data: 0.06 (*Low*)
  - for Counties with < 250 structures damaged: 0.63 (*High*)
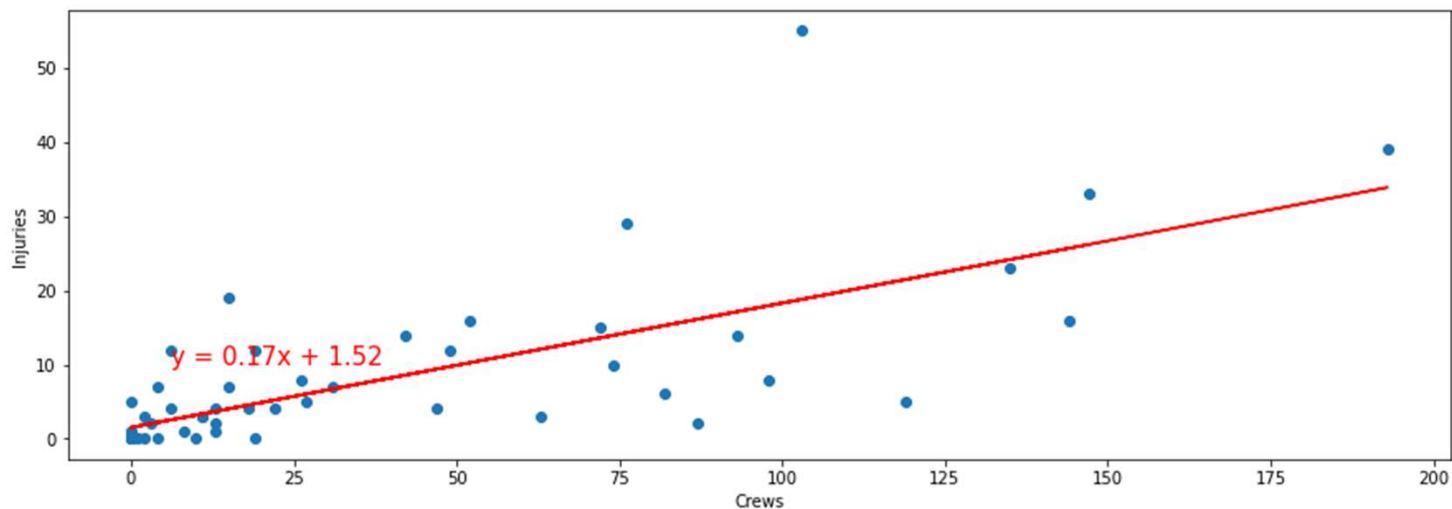
California Fires (2013-2019)

- <u>High correlation</u>

  - Injuries vs. Personnel: 0.7

  - Injuries vs. Crews: 0.7

Correlation between County parameters

- <u>Conclusion</u>

  - Estimate the number of future injuries (y) based on the size of the crew (x).
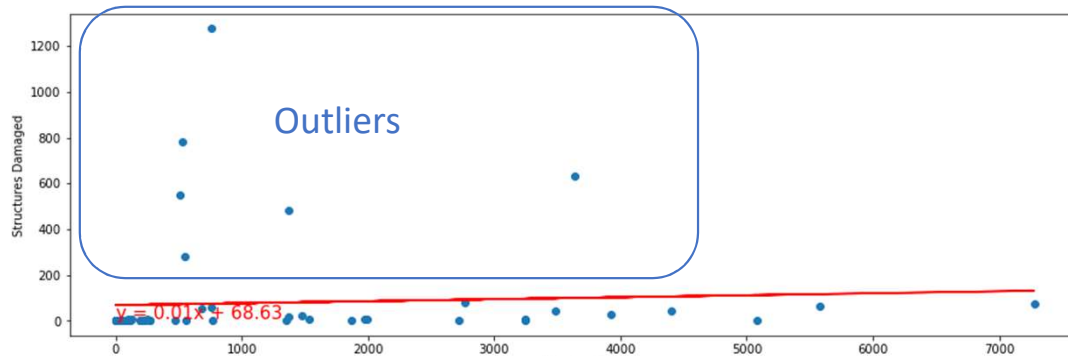

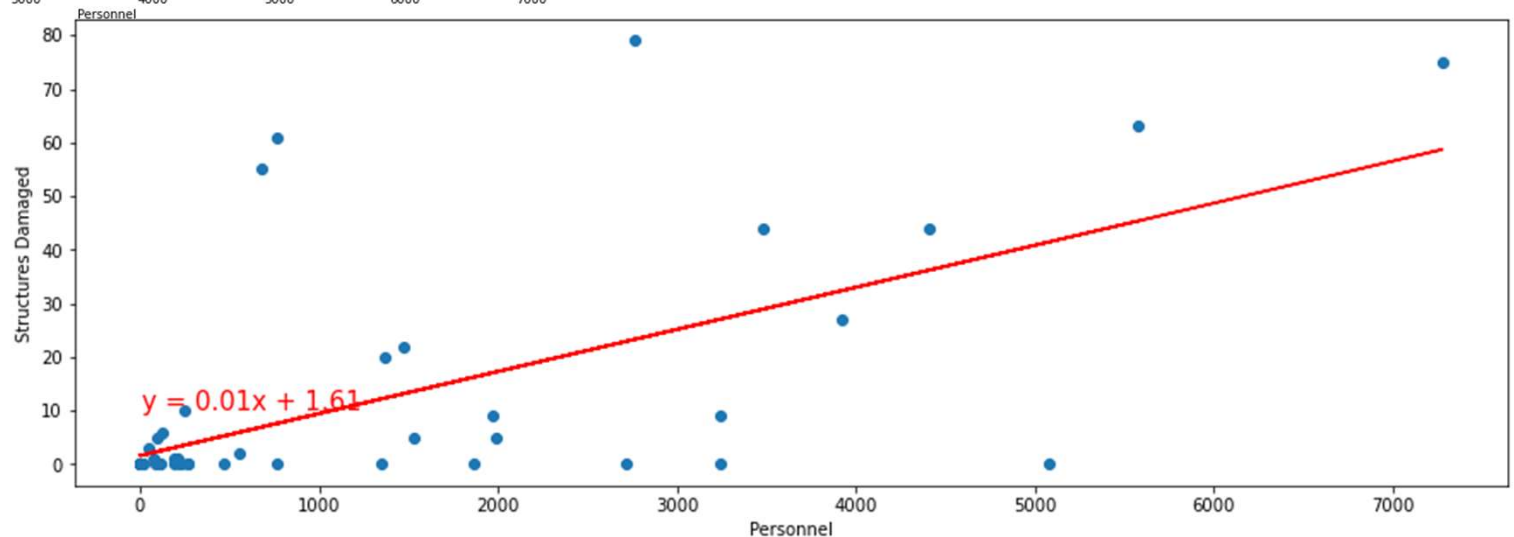<u>Note:</u> Future work should investigate the impact of the fire acreage on the number of crews and injuries

California Fires (2013-2019)

Structures Damaged vs Personnel

For all data (including outliers): correlation = 0.06 (low)

For Counties with < 250 structures damaged: correlation = 0.63 (high)

Conclusions

- Estimate number of structures damaged in future fires(y) based on number of personnel involved (x).
- Further investigated this correlation in view of the number of acres burned and other parameters.