Final Interpretation of Results ## Wildfire Area vs. Distance to Nearest Fire Station – San Diego County (2017) This analysis explored whether **greater distance from fire stations** correlates with **larger wildfire perimeters**, using fire centroids and projected distances to the closest fire stations in San Diego County. ### Key Findings: **Pearson correlation coefficient (r) of 0.04** was calculated, with a **p-value of 0.271**. - This indicates a **very weak** and **statistically insignificant** relationship between fire area and distance to the nearest fire station. - In practical terms, **fires farther from fire stations did not consistently burn larger areas** in this 2017 dataset.

Additional Observations: - A majority of fire perimeters were within

500–1000 km projected distances from stations. - The most extreme outliers (e.g., **Thomas Fire**) were labeled and suggest that other factors (e.g., wind, terrain, fuel load) may drive fire spread more than station proximity. --- ## Implications: - **Emergency response planning** should **not rely solely on geographic distance** from stations as a predictor of fire severity. - **Other spatial variables** — such as slope, fuel type, wind corridors, and time of ignition — likely have more explanatory power and should be included in a more comprehensive model. - Nonetheless, this workflow demonstrates a **robust spatial analysis pipeline** combining shapefiles, projections, centroid analysis, and statistical testing in Python.