

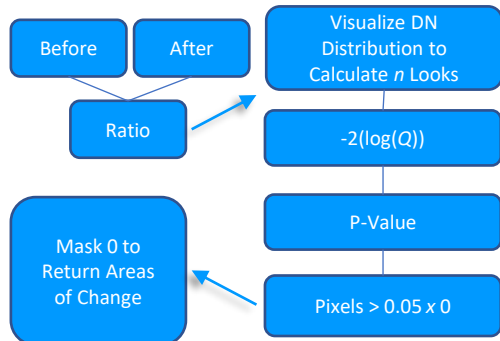
Statistical Approach to Synthetic Aperture Radar Explosion Detection and Human Impacts

Objective

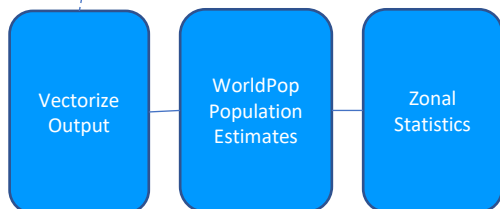
Apply statistical methods to assess areas of explosive damage and estimate civilian populations likely impacted using the August 4, 2020 Beirut explosion as a case study.

Methods

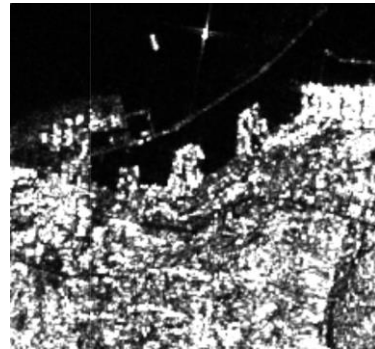
SAR Processing



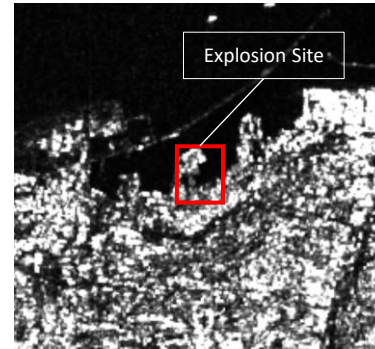
Human Impact Estimation



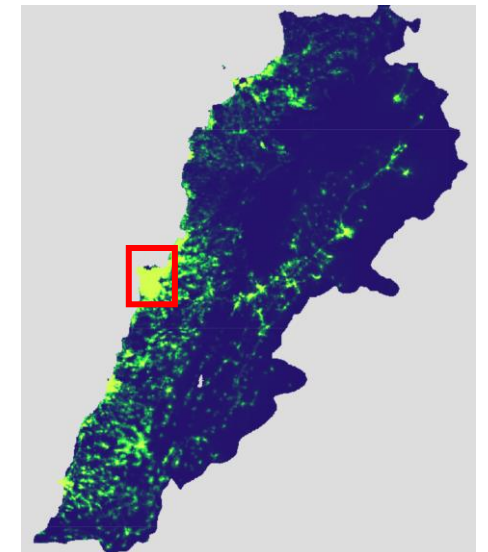
Before



After



Areas of Change



Population Estimates

Results

Estimated Impact: 388,090
Population Impacted: 300,000
Accuracy: 77.3%

References

Gorelick, N., Hancher, M., Dixon, M., Ilyushchenko, S., Thau, D., & Moore, R. (2017). Google Earth Engine: Planetary-scale geospatial analysis for everyone. *Remote Sensing of Environment*.