Progression of the Syrian Conflict and its Effect on Civilians

Introduction
Since the Arab Spring instigated a rebel uprising against President Bashar al-Assad in 2011, Syria has faced ongoing conflict. For over two years, rebel forces have been in armed conflict with the Syrian Army, as both sides attempt to gain control over strategic locations within the country. The complexity of interactions between government forces, the Free Syrian Army, Kurdish groups, Islamist militias, Turkish forces, pro-government Alawite militias, and more recently jihadist groups has contributed to tensions.

The purpose of this analysis was to illustrate the violence in Syria across both space and time. It further seeks to evaluate the distribution and the severity of civilian involvement.

Methods
Due to the inaccessibility of conflict zones, the majority of the data used relied on the compilation of news reports by organizations like Syria Tracker, Women Under Siege, and the New York Times.

The principal data sources for this analysis were shapefiles provided by Syria Tracker, which contain data on times, locations and descriptions of death incidents. These were used to estimate the locations of high death densities by converting point data to raster buffers (Figures 2.0 and 4.0). The number of deaths per administrative district (Figures 1.0 and 3.0) were estimated by summing the death incidents in each year, and joining this dataset with the administrative shapefile to create choropleth maps. Figure 8.0 combines this with 2013 data to show the total deaths by district to date.

Figures 5.0 and 6.0 were adapted from a map in the New York Times using digitization and georeferencing. This map was combined with Syria Tracker data in order to demonstrate the density and distribution of deaths incident. Effects on the civilian population, as shown in Figure 7.0, combines sexual violence reports from the Women Under Siege Project with Syrian Tracker data. Locations of sexual violence were coded into GIS using XY coordinates. These points were overlaid on a choropleth map showing the proportion of civilian deaths to total deaths in order to illustrate the conflict’s effect on civilians.

Conclusions
The conflict in Syria has inexorably escalated since its outbreak in 2011. The United Nations has estimated over 70,000 casualties since March 2011. The Syria Tracker source estimates 6,067 deaths in 2011, 41,903 in 2012, and 8,691 in 2013. This analysis has demonstrated several patterns:

- Though a large proportion of the killings have occurred in the Homs district, the highest number have been in the Southern governorate of Raqqa.
- As expected, many of the main death sites are clustered around contested areas.
- The conflict has spread to the northeast regions, as Kurdish involvement and rebel forces have strengthened.

References