

# WHERE IS THE SYRIAN CIVIL WAR TAKING PLACE?

## A Geographic Analysis of Civilian Casualties

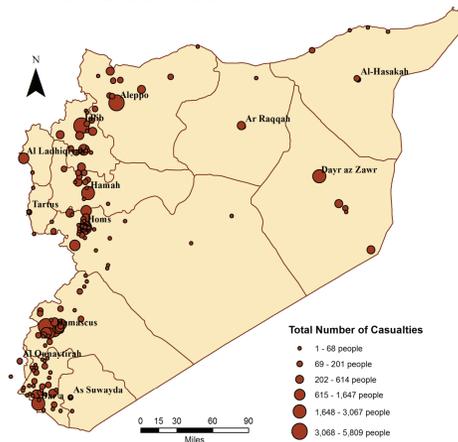
OVERVIEW

Since the beginning of the Syrian conflict in March 2011, the number of civilian casualties has constantly increased. Between March 2011 and January 2013, **many civilians** have died as a direct consequence of this war. Also, this conflict is provoking an urgent humanitarian crisis. One of the main consequences has been the massive forced population displacement and creation of refugee flows to other countries. The United Nations High Commissioner for Human Rights (UNHCR) estimates that 1.43 million people are directly affected by this conflict (2013), from which 1.2 million people are Syrian refugees in Egypt, Iraq, Lebanon, Jordan, and Turkey. Although until today there are **no official data of the total number of civilian and non civilian casualties**, we count with estimations compiled by non-governmental organizations and United Nations Agencies present inside the country.

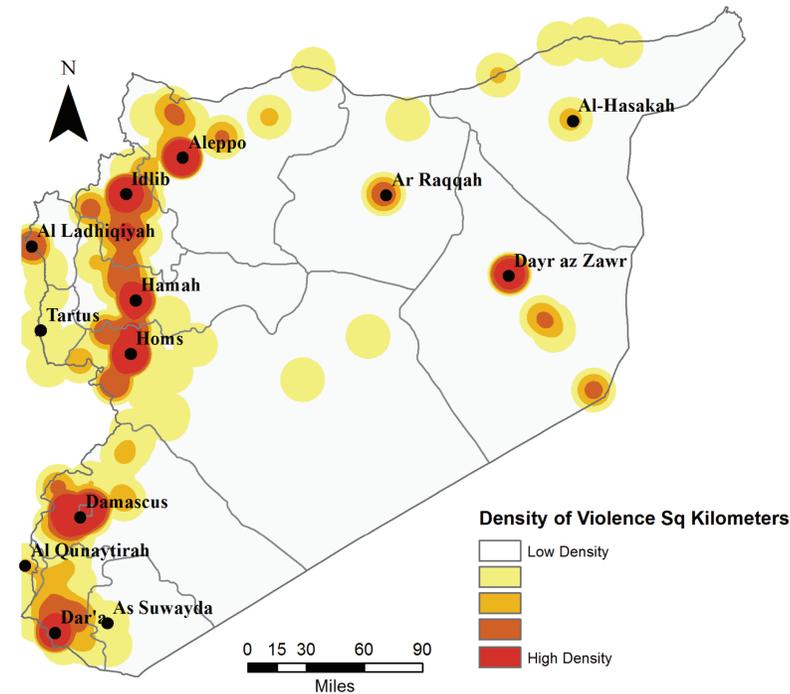
The goal of this project is to analyze the spatial dimensions of violence and civilian casualties throughout the war in Syria. Identifying the geographic areas in which civilian population have suffered high levels of violence and increased violation of human rights in the country will have different applications in a post conflict setting. Also, this project intends to look at what are the main areas where the conflict is taking place today, based on the type of land cover.

The use of GIS technology can help identify correlation between the areas with levels of violence and religious distribution, ethnic patterns, or the predominant land cover in which the current fight is taking place between the beginning of the Syrian uprising against Bashar el-Assad in March 2011 and January 2013.

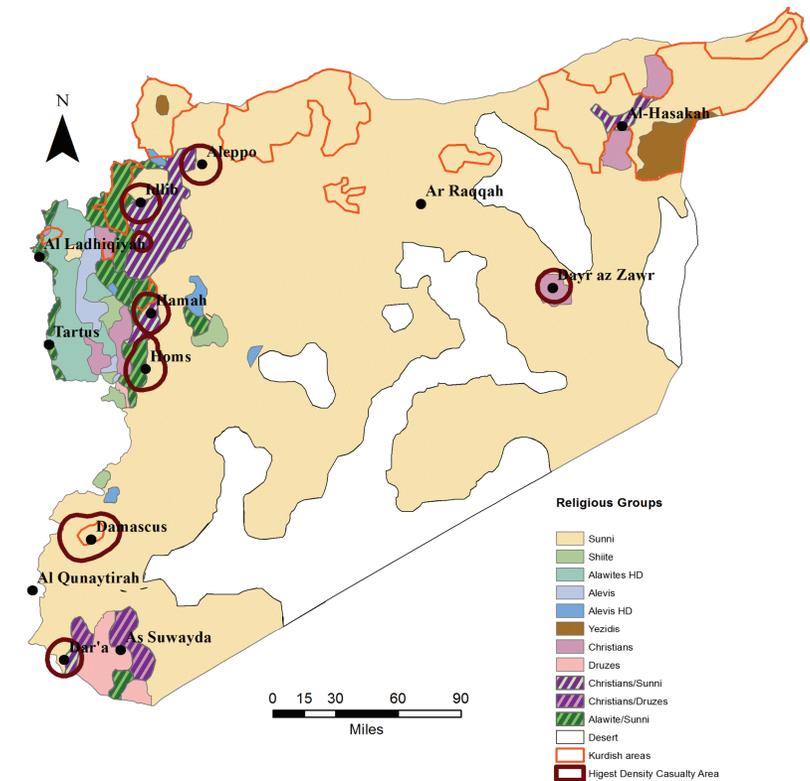
### Civilian Casualties



### Hot Spots - Civilian Casualties

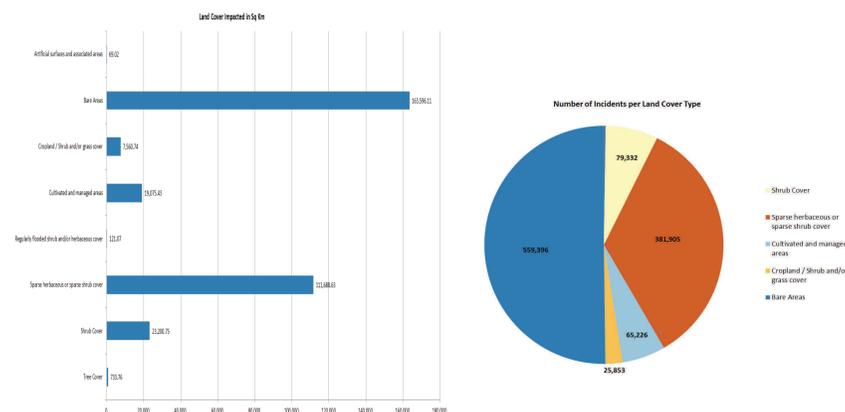


### Most Violent Areas



### IMPACT ON LAND COVER

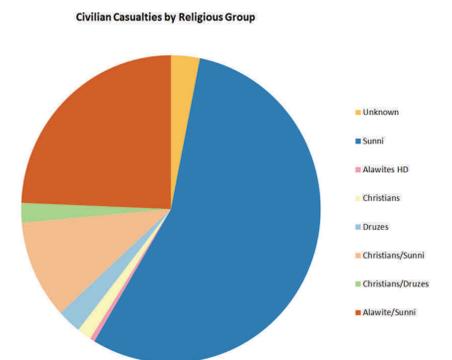
The GIS analysis has revealed that Bare Areas and Sparse Herbaceous areas are the main zones where the violence against civilian population has happened between March 2011 and January 2013. These areas correspond to land without an artificial cover, as well as with 4% or less of regional green subclasses, as well as rock, sand, and desert areas. These areas are also the ones with a highest concentration of violent incidents.



### MOST AFFECTED POPULATION

Between March 2011 and January 2013, the higher density areas of civilian casualties are located in mainly in the Western of Syria. In particular, the cities of Homs, Hannah, Aleppo, Idlib, Damascus and Dar'a. The number of casualties per Square Kilometers in the different areas is between 2,019—in the lowest area—and 25,745 people in the highest area.

Also, when comparing these high-density areas with the geographic religious distribution in Syria, the analysis reveals that the main areas with a higher density of violence against civilians are Sunni areas, followed by mixed Christian / Sunni areas, and mixed Alawite / Sunni areas.



### LIMITATIONS

The main limitations of this project are related with the lack of accessibility to GIS data and accuracy of the information available. The lack of accessibility to reliable updated data on civilian casualties posed a major challenge to make the analysis. Although different non-governmental organizations and United Nations Agencies have contributed to compile the information used, the hardship conditions of the context, and the ongoing increase of violence impedes the availability of both reliable and updated field data on casualty numbers.

Another major limitation of this project is the access to GIS data on ethnic and religious distribution in Syria. Due to the lack of access to this information, this project has used previously digitalized maps from Syria. This fact limits somehow to come up with high levels of detail and accuracy about current religious distribution in Syria. Also, this analysis does not take into account the internal displacements of population, neither the refugee flows. In addition to this aspect, this project is unable to show who originates each violent incident against civilian casualties.