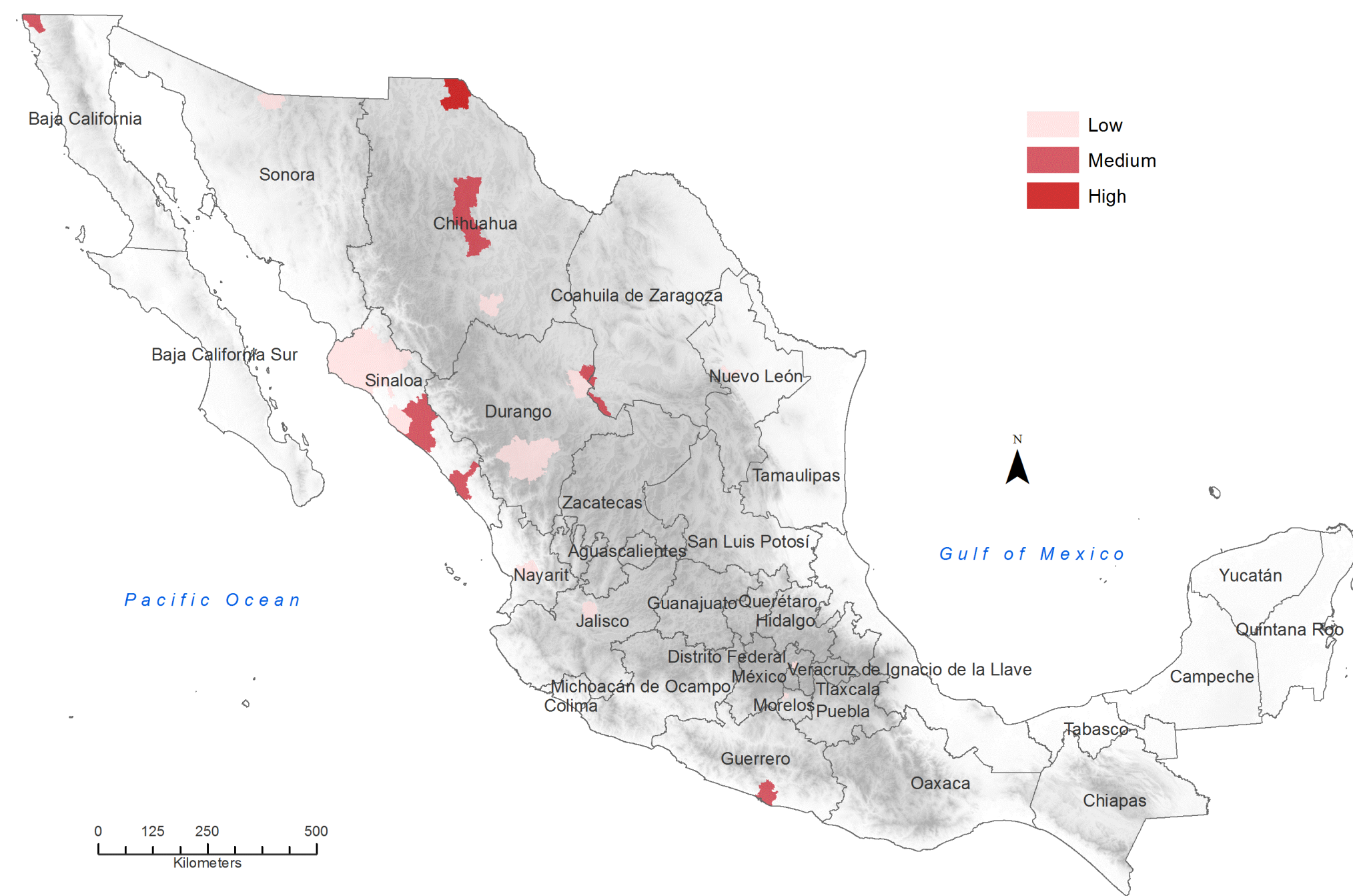


Significant Increase in Murders by Executions (2007-2010)



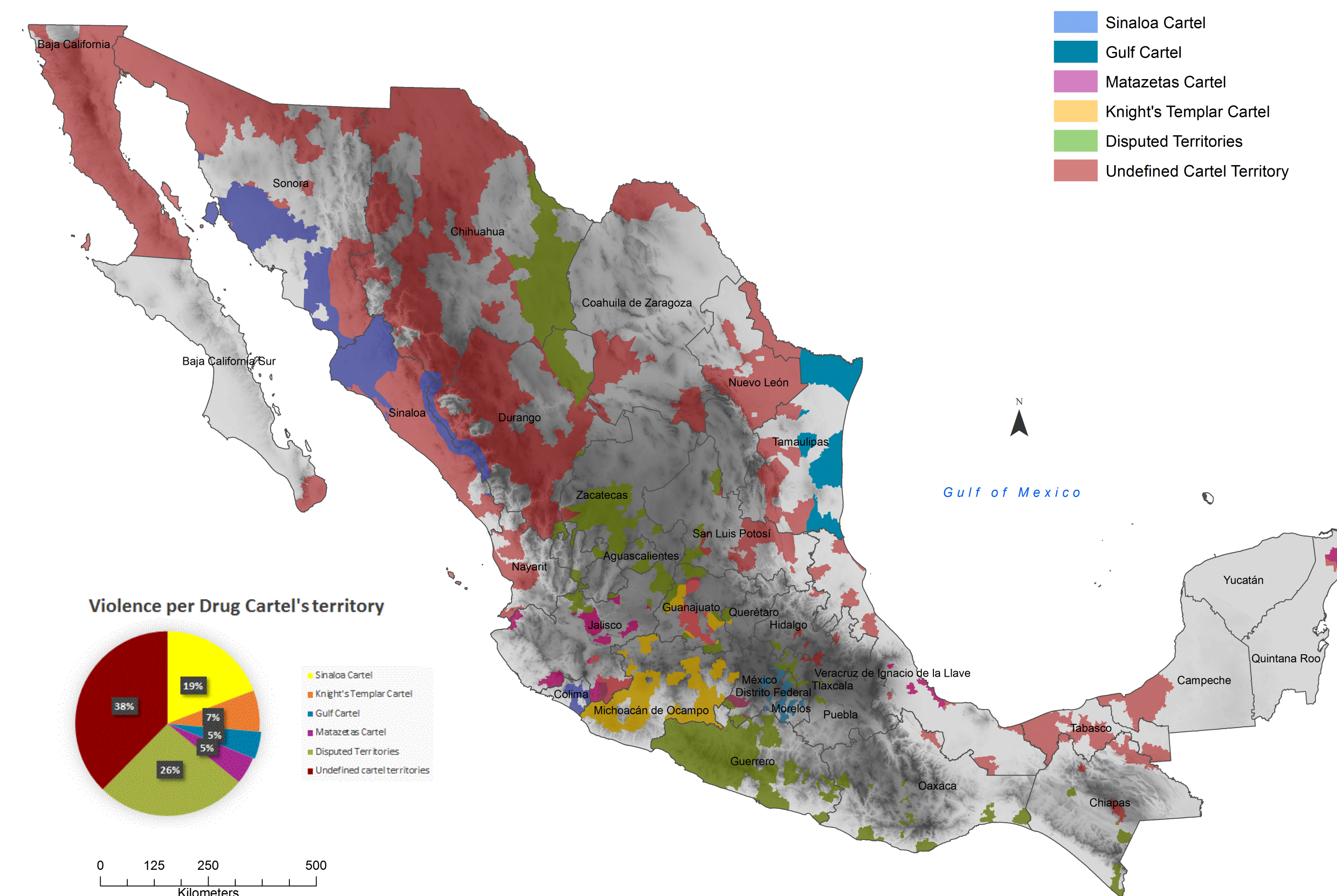
MEXICO AT WAR

Mapping the Violence Related to Drug Cartels

Introduction

The Mexican Drug War is an ongoing armed conflict among rival drug cartels fighting one another for regional control and against the Mexican government forces and civilian vigilante groups. According to Human Rights Watch, more than 60,000 people have been killed from 2006 to 2012. Most of the violence is attributed to fighting between rival drug gangs for control of territory and drug shipment routes. Who are these groups and where are they located?

Correlation of violence with Drug Cartel's Territories (2010)



Methodology

This poster aims to identify the municipalities with significant increase in violence related to Drug Wars from 2007-2010.

First, the basis of this analysis was a reclassification of raw data into a three-type ranking system (Low, Medium and High) to identify significant increase in type of murders (Executions or Confrontations) related to drug wars per municipality from 2007-2010. This reclassification excluded an outlier in the data regarding Ciudad Juarez, Chihuahua which altered significantly the standard deviation and mean of the analysis.

Second, census data was used to normalize the population and provide an accurate analysis of the most affected municipalities.

Third, a geometric calculation of the geographic area affected by the two types of murders was made. This was also correlated with drug cartels territories—and mapped by using the Clip Tool—in order to calculate the area of presence of these groups with regards to the violent activity in the country.

Finally, the data regarding municipalities affected by both types of murders was joined with the State level data in order to map the top 5 most violent and safest States in Mexico. This ranking was determined by taking into account both total numbers of murders and normalization of the population.

Limitations

The nature of this conflict makes it hard to find reliable and updated data on crimes related to drug wars.

The most complicated step involved in processing this analysis was the violence and census data used, which were all in excel files. I had to clean up all the spreadsheets and generate a unique code to join the attribute tables of the administrative level's shapefiles.

Also, all the data type available was polygon shape and a hotspot analysis was not possible due to the absence of point shape data. Finally, the data regarding drug cartels' territories is updated to 2008 which does not consider the disruption, disappearance and emergence of drug cartels over time.

Results

The results of this analysis show a significant increase (81%) of murders related to drug cartel violence from 2007-2010. From the 2044 municipalities in Mexico, 1087 are affected by violence related to executions, 407 by confrontations and 198 by both.

This analysis shows that 24 of the 1087 municipalities affected by executions have suffered a significant increase in violence from 2007-2010. An interesting outlier is the municipality of Ciudad, Juarez, Chihuahua which reported a dramatic increase of 94% in violence. Also, 58 of the 408 municipalities affected by confrontations have suffered a significant increase in violence in the same time period.

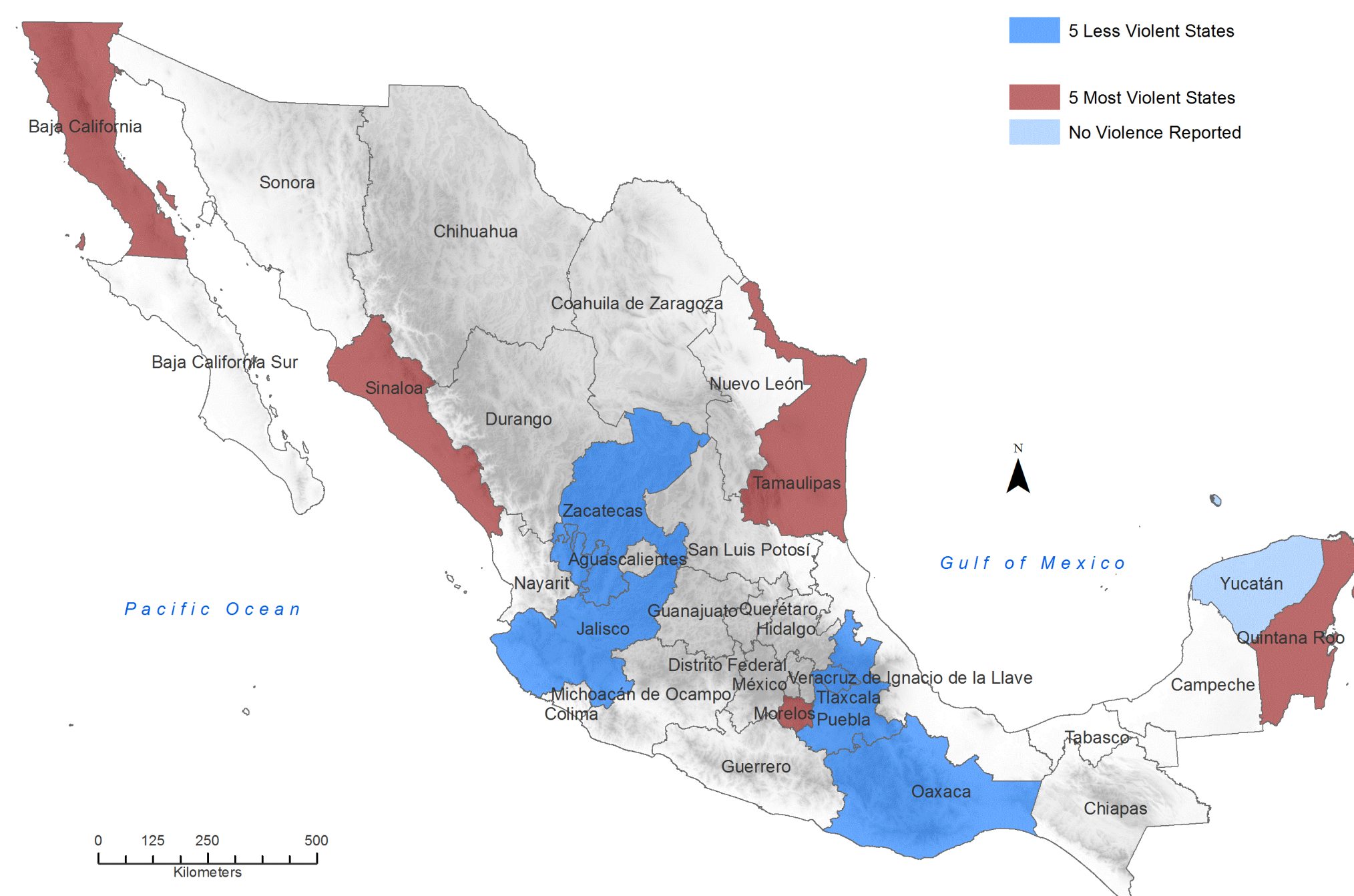
Along with it, 4.9% of the total country territory reported presence of both type of murders related to drug wars in 2010.

Finally the safest State in 2010 was Yucatan with zero presence of murders related to drug cartels, followed by Zacatecas, Oaxaca Tlaxcala and Puebla. The most dangerous State was Sinaloa followed by Quintana Roo, Tamaulipas, Morelos and Baja California.

Significant Increase in Murders by Confrontations (2007-2010)



Ranking of Violence (2010)



Poster Design and Cartography: Pamela Olvera
Projected Coordinate System: WGS_1984_UTM_Zone_13N
Data Sources: The National Institute of Statistics and Geography (INEGI by its name in Spanish) and the Government of Mexico (published by the Guardian in 2011)
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