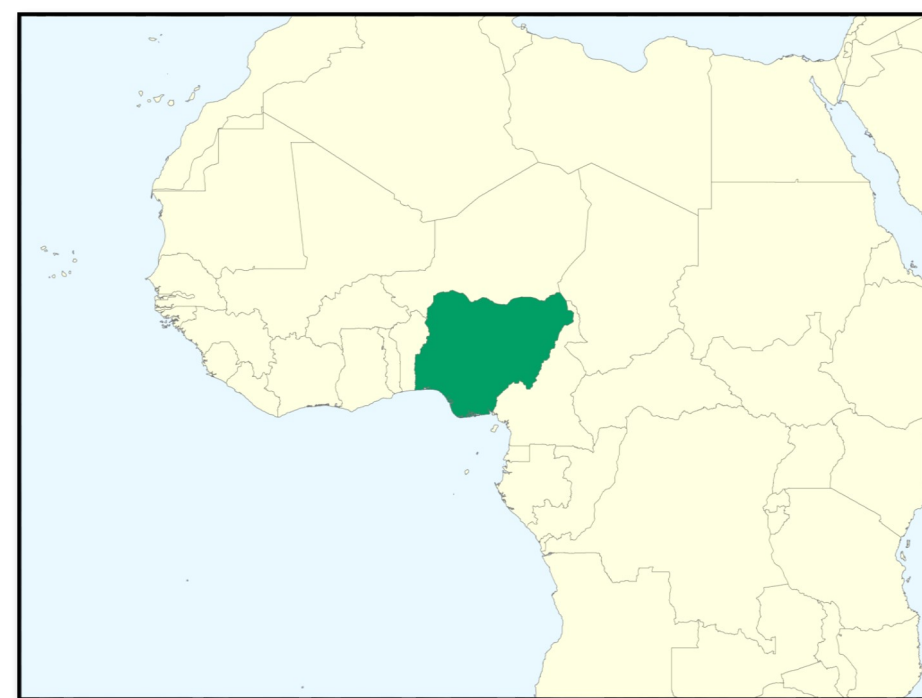




Anticipating Attack: Predicting At-Risk Areas for Terrorist Attacks in Nigeria

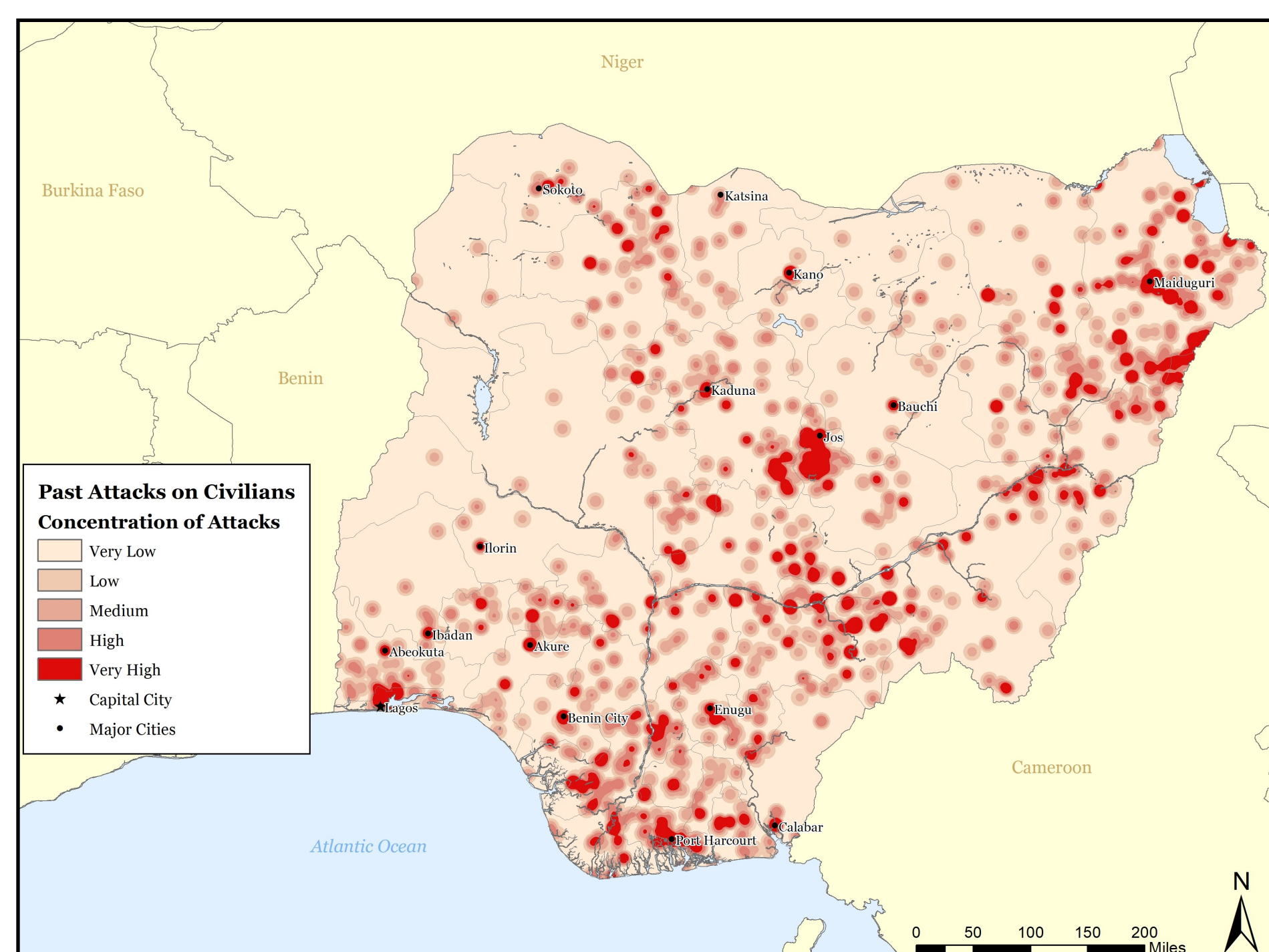
Background



Beginning their violent activity in 2009, Boko Haram has been perhaps the most well-known jihadist militant organization in Africa. The majority of the area in which they have been active has been in Nigeria. The long-

standing domestic instability of Nigeria has opened up more opportunities for Boko Haram to strike civilian targets, as well as allowing for smaller radical groups to do the same. The influence of these terror attacks on civilians have had a tremendous impact on civilian life and governance of the state. As of only 2013, 250,000 Nigerians had fled the country as refugees from the violence visited on them both directly or as collateral from engagements between Boko Haram or other militant organizations and the Nigerian military or smaller militia forces. The most notable moment on these attacks was the attack by Boko Haram on a school in the town of Chibok that led to the kidnapping of 276 schoolgirls, sparking the #BringBackOurGirls online movement that saw support from leaders around the world.

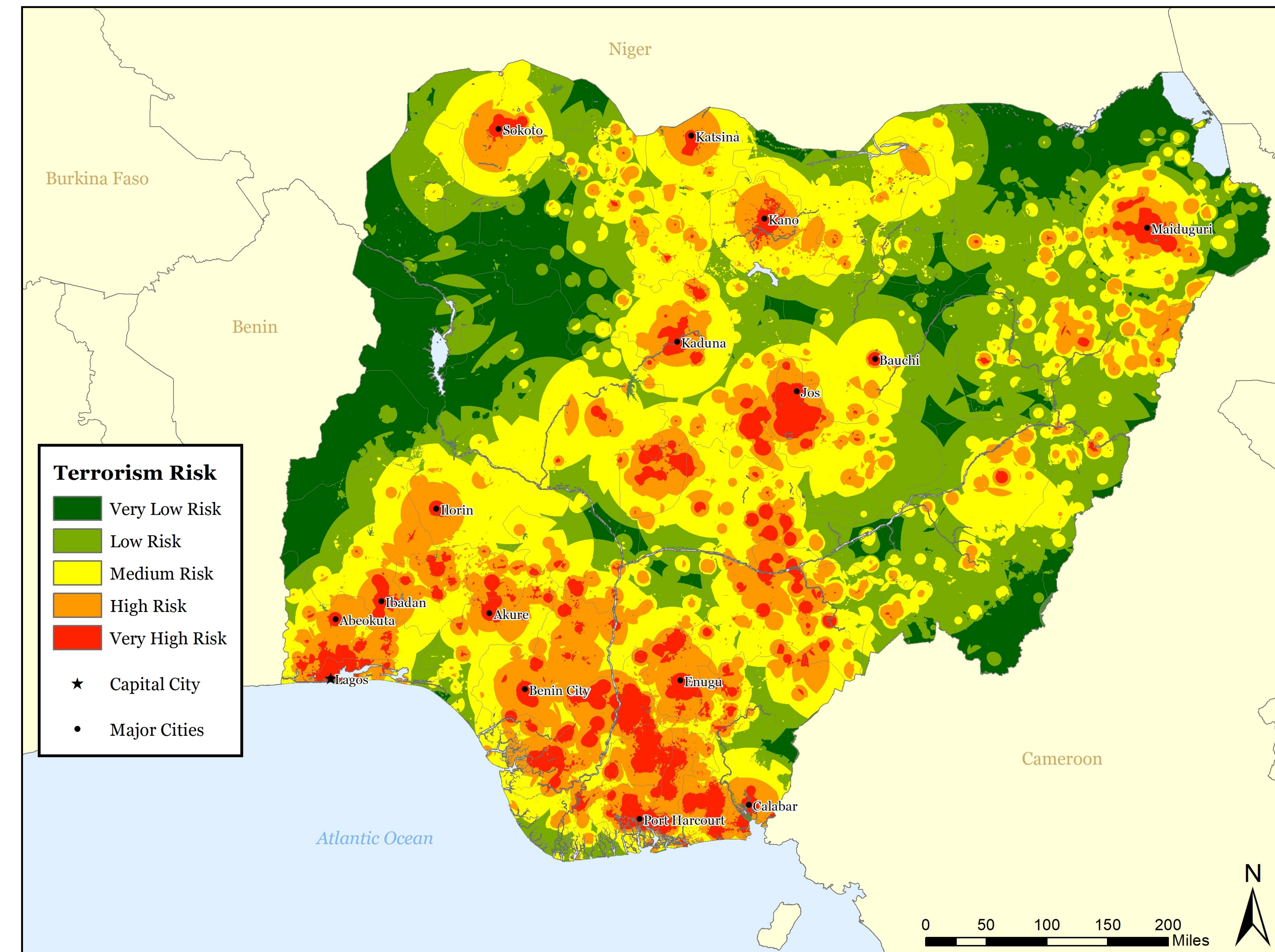
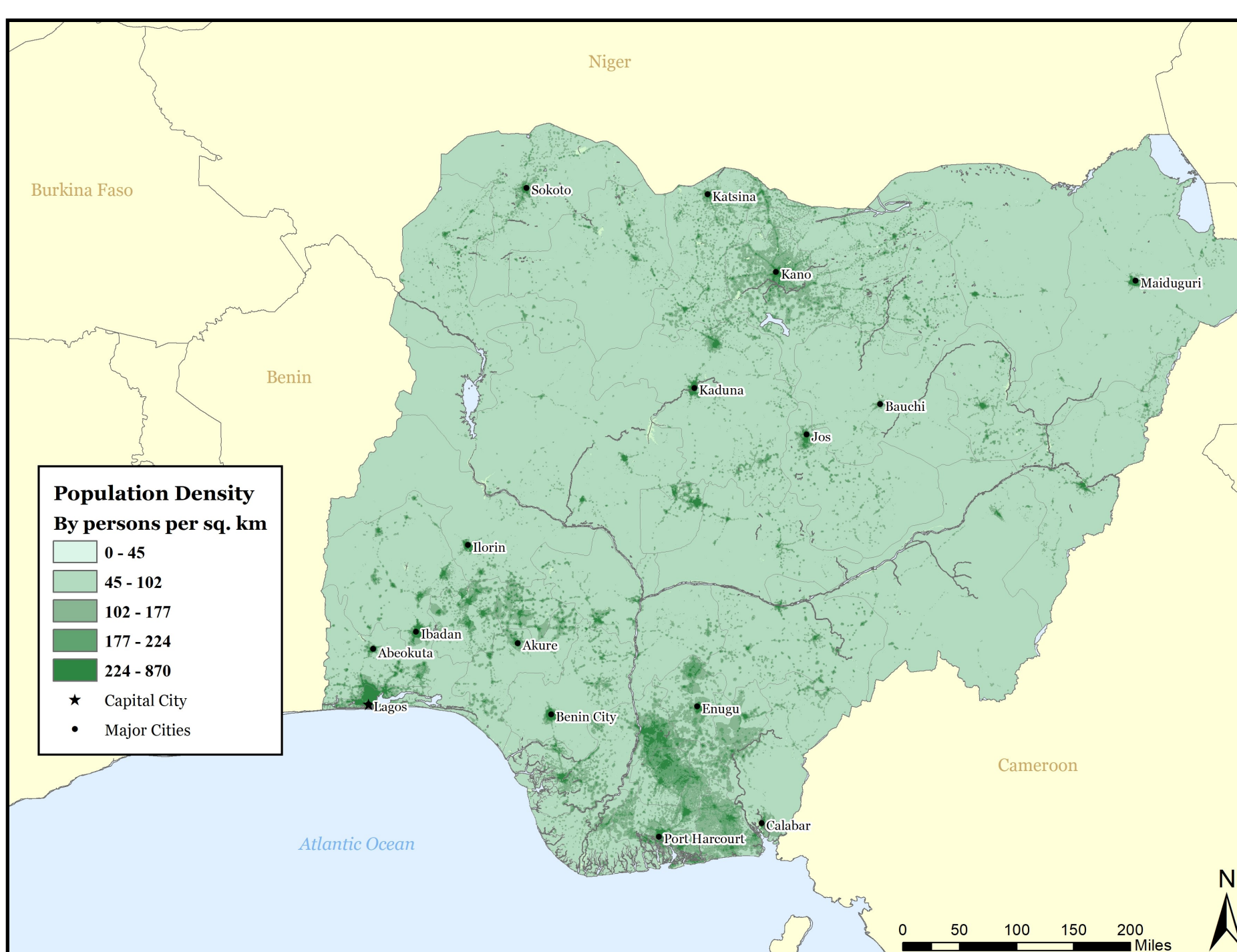
While military campaigns against Boko Haram and smaller groups have been mostly successful in deterring the organized forces, the safety of the civilian populations from terrorist attacks seem to not be improving. As government forces have tightened their squeeze on militants, there's been an increasing number of attacks on civilian targets. As these militant groups have been routed or dispersed, it is



Methodology

The chief likely targets for terrorist activities are likely areas of both high population density such as in a city but also in the vicinity of certain institutions that would contain high quantities of civilians. For this project, places of worship, hospitals, and airports were overlaid with locations of previous attacks and population density raster data. Each layer of data was broken into ranks, with the highest number being the most likely to be a target for terrorist activities, and weighted. Population density, location of places of worship, and locations of past attacks were weighted heavier than airport and hospital locations. The intuition behind this weighting is that airports and hospitals are somewhat likely potential targets, but less formal areas like marketplaces or bazaars are more probable, but harder to locate. Thus heavier weighting of population density makes up for this shortcoming. The heavier weighting of places of worship is due to the persistency of their targeting by militant groups, as many have a religious agenda.

The locations of past attacks are also used to capture both high concentration of civilian targets and different buildings or institutions that were deemed at least at that time, and perhaps still today, as vulnerable by these organizations. Past attack data were consolidated down to only include attacks of non-government, militant forces on civilian populations, both in-person and done remotely. The data only uses attacks data from 2012 through November of 2018. The twelve most populous cities were also mapped for context.



Results

What is both intuitive and evident in this analysis is the risk of terror attacks in densely populated areas. What is notable, however, is the extent of risk that lies in and around medium sized cities, as the risk seen there is comparable in some cases to some of the largest cities in Nigeria. This could be due to reduced security focus as compared to the larger cities. In particular, higher risk areas in less urban parts of eastern Nigeria is likely the result of the concentration of the ethnic Tiv people who reside there. The Tiv are a mostly Christian cultural minority in Nigeria and throughout the region of West Africa, and live in close proximity to the regions that saw Boko Haram occupation. In the south part of the country in the Niger River Delta, much of the terrain that lies between major cities have seen a considerable number of attacks, and will remain a potential hotbed for terrorist activity as a major economic epicenter. The problem going forward, if this assessment holds water, is the sheer dispersion of at-risk areas and the challenges for security forces and police going forward.

Risk Level Population Percentage

Risk Level	Population	Percentage
Very Low	7,062,983	4.4%
Low	18,267,853	11.4%
Medium	35,111,613	21.9%
High	36,925,584	23.0%
Very High	63,029,226	39.3%

