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Executive Summary

- This nontechnical study aims to analyze and visualize The Carter Center Syria conflict mapping data to show the

Introduction

Since 2011, there has been widespread use of explosive weapons by all sides in the Syrian conflict. Because of a variety of factors, a portion of these either fails to detonate, becoming unexploded ordnance (UXO), or is abandoned, becoming abandoned explosive ordnance (AXO). These explosive remnants of war (ERW), in addition to landmines and improvised explosive devices (IEDs),¹ pose a threat to a population long after the violence has stopped. Not only can these explosive munitions continue to kill and injure people for decades, but their presence also can hold back a community's development for generations.

On-the-ground assessments, surveys, and clearance operations are some of the most effective ways to address the physical threat of

Main Study

Using

Explosive Munitions Uses Across Al Hassakeh, Ar Raqqa, & Deir Ez Zor Governorates



The following sections review each governorate in detail.

Al Hassakeh Governorate

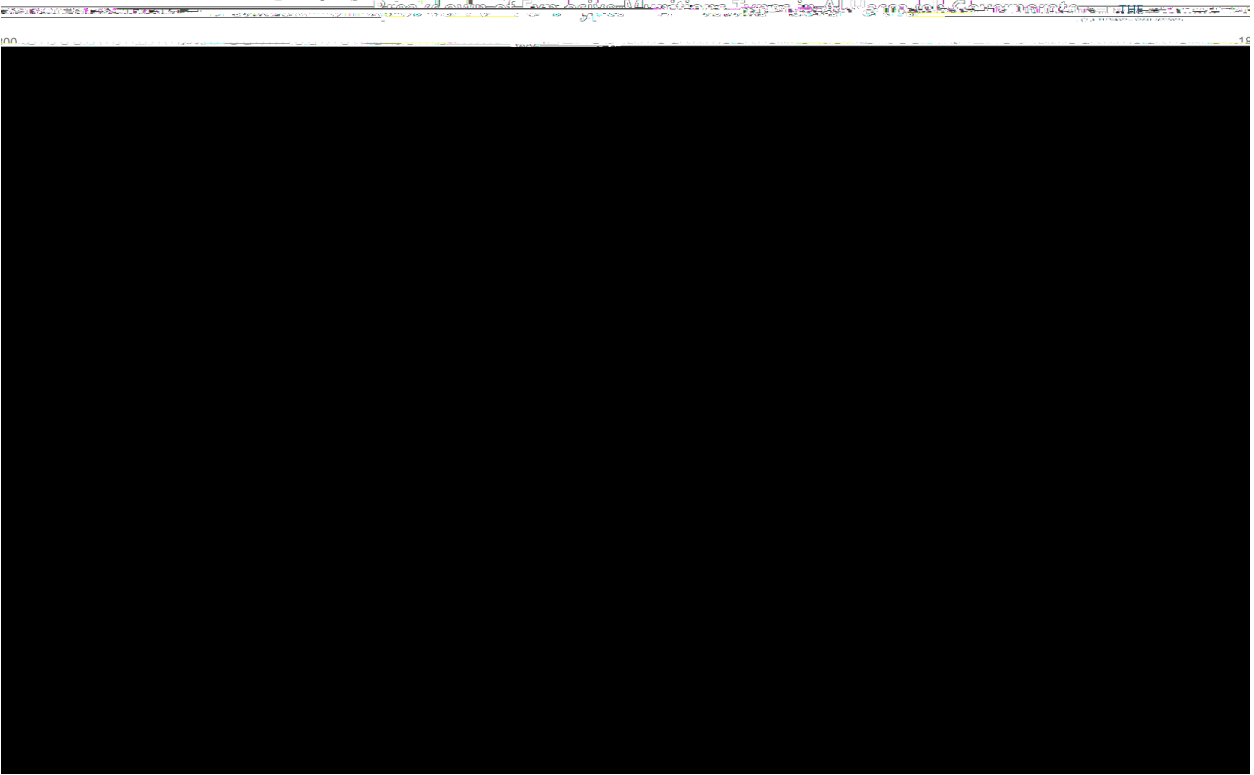
At least 3,633 uses of explosive munitions were recorded in Al Hassakeh Governorate during 1,364 conflict events. This activity affected 215 identifiable communities.

Air-launched explosive weapons made up 50% (1,817) of all explosive munitions used in the governorate, followed by ground-launched weapons, which made up 37% (1,339) of activity. IED, landmine, and UXO detonations made up 13% (477). There were no records of cluster munitions being used in Al Hassakeh Governorate.

Nearly 81% of munitions used in the governorate were either airplane-launched munitions or shelling of unknown type. Various types of IED also made sizable counts of activity in the governorate but amounted to only 11% of activity. The remaining 8% of activity was split among helicopter-dropped munitions, landmines, and various other ground-launched explosive munitions.⁴

⁴ The remaining 8% of activity were divided
6vr6ccg2JETc61o64 884 Tm0 Gf)JJET@.000009121 0 612.12 792.12 r884 Tm 181d38

See Figure 5 and 6 for more details.



About 86% of all activity in Al Hassakeh Governorate was recorded in six subdistricts along the Khabour River and Jaghjagh River Valleys, home to most of the large population centers in the governorate. Al Hassakeh subdistrict recorded the most munitions use (46%), which is unsurprising given that Al Hassakeh city and its surroundings were hotly contested by ISIS/Jabhat al Nusra,⁵ various groups that eventually came under the umbrella of the Syrian Democratic Forces (SDF), and the government of Syria, which retained a small security zone in the city and its military airport. Equally contested were the Shadadah, Tal Hmeis, Al Hawl, Ras al Ein, and Tal Tamr subdistricts, which recorded 40% of explosive munitions activity among them.

ISIS & Jabhat al Nusra operated as a unified organization until 2013.

Explosiv

Ar Raqqa Governorate

During 1,592 conflict events, at least 5,076 individual uses of explosive munitions were recorded in 146 identifiable communities across Ar Raqqa Governorate.⁶

Similar to Al Hassakeh Governorate, air-dropped munitions were the most common explosive munition used in Ar Raqqa and accounted for 80% (4,054) of all activity. Ground-launched explosive munitions made up just 13% (683) of all explosive munitions uses in the governorate, the majority being shells of just 13

Around 75% of explosive munitions activity in Ar Raqqa Governorate was in just five communities (Figure 11). Unsurprisingly, there was a focus of explosive munitions use on Ar Raqqa city, which recorded 51% of munitions uses. The city was ISIS' long-standing de facto capital and routinely bombarded by U.S.-led coalition airstrikes after ISIS captured the city from the Al Qaeda-affiliated Jabhat al Nusra in 2014. Shelling and airstrikes further impacted the city during the battle to take Ar Raqqa city in 2017 led by U.S.-backed Syrian Democratic Forces (SDF). Landmine and IED booby traps were left in many buildings, and the city still experiences periodic explosive attacks by various groups. Tell Abiad, a major border town with Turkey, and Ein Issa, strategically located at the crossroads of the M4 Highway and the Ar Raqqa-Tell Abiad road, saw sizable counts of explosive munitions after they were heavily contested by ISIS and the Kurdish People's Protection Units (YPG) during the Tell Abiad offensive in 2015. The remaining 25% of activity was distributed among 141 other communities, largely along the Euphrates River Valley or areas between Tell



Exploring these figures further, airstrikes and shelling of unknown type made up the majority of munitions uses, with rockets and mortars also making up sizable counts of munitions uses in the governorate (Figure 14).

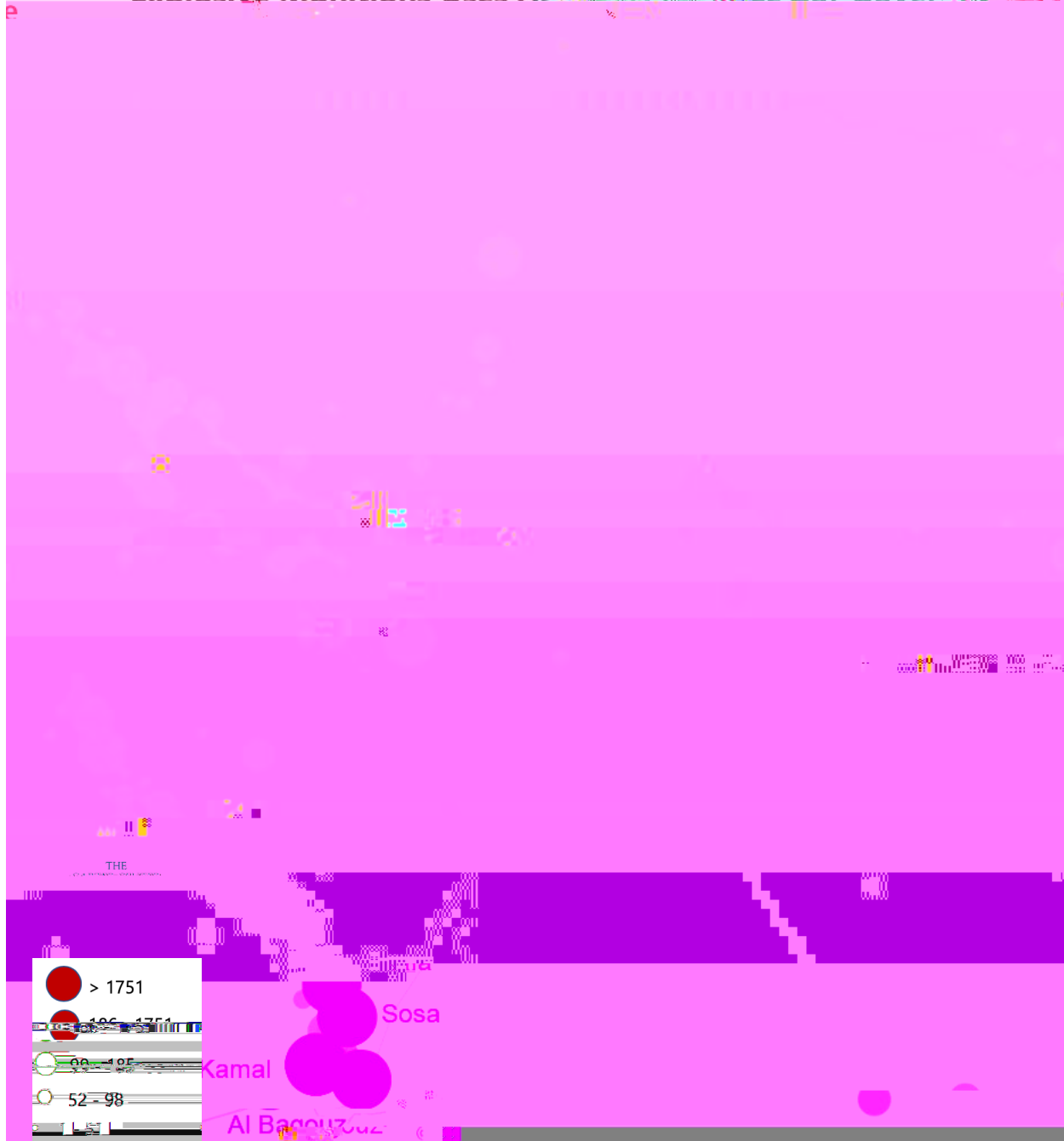


Explosive munitions use in Deir Ez Zor Governorate was concentrated in communities along the Euphrates River Valley. In particular, the five subdistricts of Deir Ez Zor, Susa, Hajin, Abu Kamal, and Muhasan all between Deir Ez Zor city and Abu Kamal town rec

. At the city or town level, just 11 communities accounted for 71% of the total number of explosive munitions used in Deir Ez Zor Governorate: Deir Ez Zor city, the border town of Abu Kamal, Hajin, Basira, Al Bagouz, Al Mayadin, Susa, Muhasan, Shafa, Mreiyeh, and Jafra. With the exception of Deir Ez Zor city, which remained under GoS control and was besieged by ISIS for more than three years, the other communities were some of the first places where resistance to GoS formed. Initially coming under Free Syrian Army control in 2012, the towns were taken by ISIS by the end of 2014 before being captured by the SDF in early 2018. In the towns of Susa, Shafa, and Al Bagouz, most explosive munitions uses were recorded over a relatively short period of time, largely in 2018 and 2019. This provides insight into the

significant efforts required to dislodge ISIS from its last stronghold in Syria, with Bagouz coming under SDF control by March 2018. The remaining 29%

Explosive Munitions Uses Across Idlib Governorate



Appendix - Terminology

Terminology used in the explosive weapons clearance and demining field is highly specialized and often used loosely outside the sector. The following section highlights commonly used terms in this study and the demining field. Definitions for these terms were compiled from [International Mine Action Standards \(IMAS 04.10\) Second Edition \(May 2013\)](#) as well as from [Conflict Event Data and Beyond](#) from World Bank Training Workshop, March 2018.

Ammunition, munition, or munitions are complete devices charged with explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological, or chemical material for use in military operations, including demolition. In common usage, “munitions” are often referred to as military weapons, ammunition, and equipment.

Clearance in the context of mine action refers to the tasks or actions to ensure the removal and/or the destruction of all mine and ERW (see below) hazards from a specified area to a specified depth.

Explosive Remnants of War (ERW) refers to both abandoned explosive ordnance and unexploded ordnance (UXO), though not landmines. These are all explosive munitions left behind after a conflict and can be used or unused. This includes conventional ground- and air-launched explosive weapons, such as artillery and cluster munitions, as well improvised weapons.

Improvised Explosive Device(s) (IED) are devices placed or fabricated in a makeshift or improvised manner (with whatever materials are available) incorporating explosive material, destructive, lethal, noxious, incendiary, pyrotechnic materials, or chemicals designed to destroy, disfigure, distract, or harass.

Landmines are explosive devices designed to lie hidden in an area (sometimes for years) and kill or injure people who trigger them. These victim-triggered devices can be classified as anti-personnel, which are activated by a person or animal stepping on them, or anti-vehicle, which are activated when a vehicle drives over them. The International Mine Ban Treaty prohibits their use, and their clearance is conducted in a specialized way. Increasingly, this category covers improvised explosive devices (IEDs), which act as improvised landmines as they are also typically victim-triggered.

Unexploded Ordnance (UXO) refers to munitions that are used in conflict and for some reason fail or partially fail to detonate. These unstable explosive devices are left behind during and after conflicts and pose dangers similar to landmines.

