

GEOGRAPHICAL DISTRIBUTION OF REMNANTS OF WAR IN WASIT GOVERNORATE

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Abstract

eat search Risks environmental output about waste war in Governorate Wasit, From Where reasons its existence in Region and effects resulting about her in Different fields and activities Humanity, and subtract solutions Occasion To get rid Of which or rationing From its dangers in Light capabilities available in time Present so diverged waste warship in region the study Of which Remnants munitions warship detached and others detached and mine show that region the study polluted in the form of big with waste warship especially districts Neighboring country Iran because of outbreak the war Iraqi Iranian during a necklace eighties, was observed that density That waste Regions open(that still its danger existing)Reach higher level to her in judicial(powder Walcott), and go down density in spend Neighborhood and Numaniyah, so came spend powder rank first From During space contaminated so reached (3650000000)M2)because of nature Site Elimination being region frontier with nation Iran And because of war The (1980)came spend Neighborhood in rank Sixth and less districts pollution with waste warship Where reached Rate space contaminated(1397836)And most That Regions self concentration higher with waste warship on me level Iraq or level provinces she was in time Himself region concentrated In which weight the biggest for resources natural From fields oil and its facilities and station Electricity and quarries pebbles and sand and soil and lands agricultural lush and pastures rich and diversity bio and valleys seasonal and eyes wells water subterranean and the marshes, bonus on me the use tourist and practice Hobby the hunt, Than led to me friction population in the form of big and repetitive with this Regions dangerous that cause with losses material and human

key words: (Remnants of war, mines, missiles, environmental impact of remnants of war)

Introduction

The other remnants are no longer known due to the collapse of the military institution, which resulted in damage and loss of the maps that define those areas. So the idea for this study came.

First, the research problem:

- 1- What is the effect of war remnants on the environmental characteristics in Wasit Governorate?
- 2- What is the extent of pollution by military remnants in Wasit Governorate?

Second, the research hypothesis

- 1 - Military remnants do not affect the environmental characteristics in Wasit Governorate.
- 2- Pollutants resulting from military remnants are widespread in Wasit Governorate.

Third: The purpose of the research

The study aims at multiple goals represented in analyzing the impact of natural geographical factors on the properties of the soil. The researcher aims to identify the environmental risks of

war remnants and reveal the reasons for their presence, duration of time, the extent of their impact and interaction with natural elements, the reasons that prompt the population to approach them, their activities and ways of dealing with them. The study aims to: Presenting the reality of the geographical distribution of war remnants in Wasit Governorate and the extent of its impact and reflection on the environment in Wasit Governorate.

Fourth: The importance of research

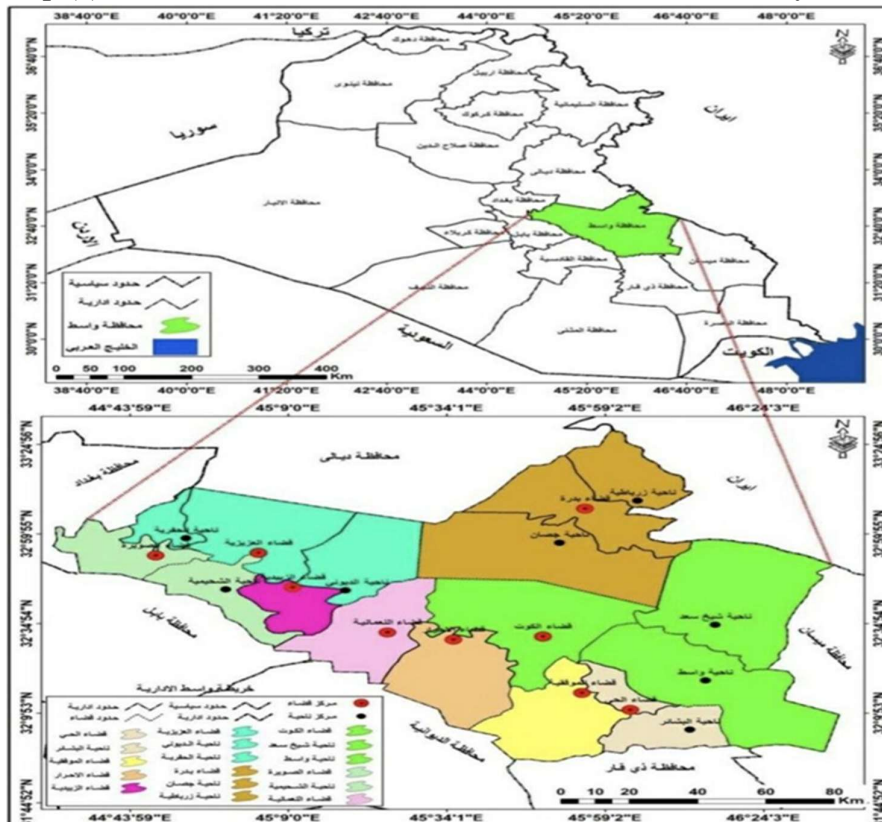
a -The importance of research from an academic point of view, contemporary public relations is one of the important communicative activities on which educational institutions depend in their media and awareness activities, and thus the research is a scientific addition to the scientific library with this study.

B -The importance of the research from the societal aspect: The research dealt with an important phenomenon from the strategic, social, economic, and security aspect, which is the war remnants because of their negative effects on the human being, and this research can contribute to helping the public to identify the types of these remnants and the risks they cause, especially during Approach them and be careful when you see them and inform the concerned authorities.

five: search limits

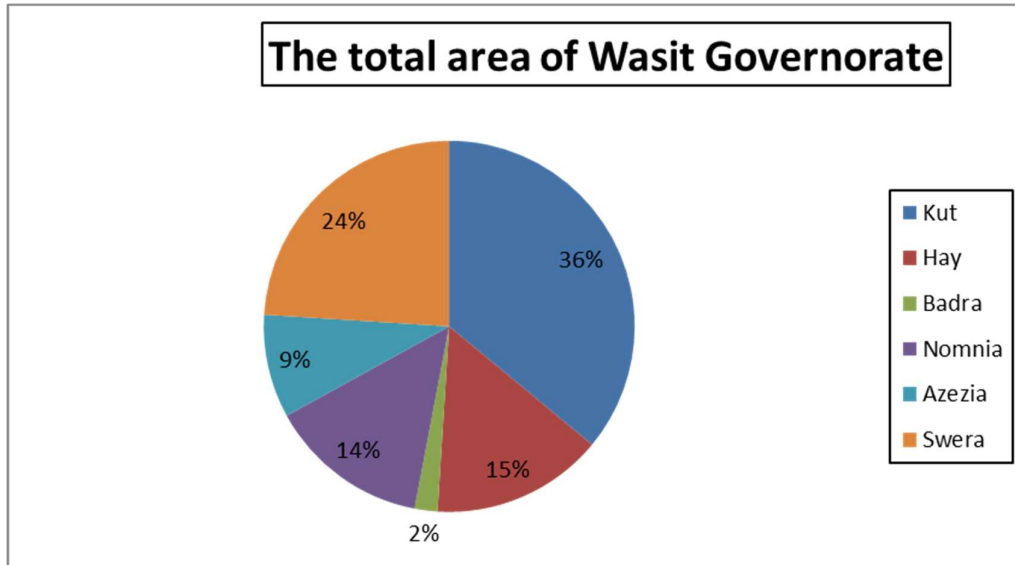
The spatial boundaries of the research are represented within the administrative boundaries of Wasit Governorate with its six districts. See a map (1), and Figure (1), which extends between longitudes 31-44 and 34-46 east, and between two latitudes (45-31). And the31-33) degrees north, with an area of 17,314 km2. Administratively, it is bordered by Baghdad Governorate, to the northeast by Diyala Governorate, to the east by the Islamic Republic of Iran, to the southeast by Maysan Governorate, and to the south by DhiQar Governorate (Al-Qarghouli, 2019, p95)

a map (1) of Administrative units of Wasit Governorate for the year 2020



Source: starAl-Waeli, Changing trends of agricultural activity (vegetation) in Wasit governorate for the period (2008-2018), Journal of the College of Education for Human Sciences, Wasit University, Issue 41, Volume 3, 2020, p. 311

the shape (1) It represents the percentage of the area of the governorate's districts



Source: From the researcher's work based on the data of Wasit Municipality Directorate2020

The limits of the research were determined according to the following:

A- Spatial Boundaries: All sites containing remnants of war remnants if they are concentrated in the eastern parts of the governorate due to the war between Iraq and Iran, and whose area is 1200 km as it is considered one of the most dangerous areas for the life of the population for the following reasons:

- 1- As a result of the presence of dangerous war remnants left over from the Iran-Iraq war.
- 2- The high concentration of war remnants in these areas, being one of the direct war front lines during the war with Iran, for the length of time the military operations took there, which lasted eight years, and turned large areas into forbidden lands that prevented them from being exploited until the present time.

b- Human limits: The people living in war-polluted areas for the following reasons:

- 1- The affected population, who often practice agriculture, herding, or tourists.
- 2- The movement of residents from one area to another, which exposes them to injury, as a result of entering minefields.

Geographical distance of the search

Any geographical phenomenon has two dimensions, the first is a temporal dimension that shows the change that occurs in its properties over time, and it is a dimension that has a great ability to change with changing circumstances. This dimension describes the spread of war remnants through the stages of military operations, which we can consider as one of the reasons for the distribution of war remnants that the study area passed through, as follows:

1- The first stage (1980-1988)

This is the stage of the Iraqi-Iranian war, which lasted for eight years, during which military operations were concentrated along the eastern border of the province with Iran and the lands of Badra, Jassan and Zurbatiya became a theater for direct military operations, and as a result of the long period of military operations, the areas containing the remnants of war at that stage are

certainly the most widespread areas of war remnants, especially minefields, as the remnants of war for the mentioned period were concentrated in the eastern side of the governorate due to its occurrence on In contact with the State of Iran, the waste was spread on the border strip separating the two countries and was concentrated in Badra District in Wasit Governorate.

2 - Phase Two (1991)

It is the stage of what was called the second Gulf War, and the remnants of that war were concentrated along the borders and within the locations of the military units in the Iraqi border provinces that were subjected to direct air and missile bombardment, as well as along the length of the coastal strip and then planting minefields, including (1157) sea kilograms. These mines hit the two warships USS Preston Uss Treboly in February 1991 when they were sailing in the waters of Khor Abdullah (Aspin, 1993, p63), as the remnants of the Gulf War were less than they were in the Iraqi-Iranian war on Wasit Governorate because of the distance of the confrontation areas war between the two fronts.

3- The third stage (2003)

It is the stage of the Anglo-American occupation of Iraq, which began in March 2003 (To this day, various types of internationally prohibited weapons, especially cluster bombs, have been used, and the sites of destroyed military units and the remnants of the equipment and mechanisms of the Iraqi army, which are still visible until the present time, and what they contain of radioactive materials have been left behind.) 1993, p64) It is noted that during the period of the Iraqi-American war, the spread of war debris in Wasit governorate in general, where the waste spread in all districts and varied in one district for a number of sites, as in the Kut district, 8) sites were recorded that were and still contain war remnants, and in the district district there are three sites And in Badra district (6) sites between the Iranian war and the American Lord, which had a higher impact on the Badra district, this was concluded through its remnants, which were mine fields and the remains of old vehicles and ammunition, unlike the rest of the districts that observed the effects of the bombing and its remnants and the radiation left behind. 3 and the judiciary of dear (3) Essaouira district 2).

Sixthly: Previous studies

-1(quick1998): This study dealt with the concept of radioactive pollution and its impact on the environment and its characteristics and its impact on the population and natural characteristics

-2(Mueller.2003): This study dealt with war remnants and their control, as well as the criminal war of mercenaries, as it showed the importance of the danger of war remnants It can be used if it is left T Spread by outlaws

-3study (2007, Nassir): titled Humanitarian implications of the wars in Iraq The study aimed to describe the current situation in Iraq and the daily problems faced by Iraqi society.

4- (Mohammed, 2008): Remnants of war in the province of Basra. The study of war remnants of Basra Governorate, its effects, and the geographical distribution of war remnants in Basra Governorate

5- (Al-Zoghbi, 2010): The study dealt with international responsibilities Of Damage caused by nuclear waste.

Seventh Study sources and review Research reference

In collecting its statistical information, the study relied on two main sources: library studies (theoretical), represented by the collection of library information related to the subject of the study, as well as access to all information and data related to war remnants, and then collecting,

analyzing and distributing samples on maps related to the subject of the study. It is divided into three stages:

First: Determining the locations of military remnants using a device (deviceGPS SMAP 78s)

Easy-to-use portable navigator with future markersGPS is highly sensitive and stores 1,000 track points and 100 tracks so you can go back to them again. GPS Sail Assist includes default start line, address line, countdown timers, speed log, and nesting assist The display and keys feature a built-in backlight, making its high-contrast display easy to read in all lighting conditions.NMEA 0183 support includes over 18 hours of battery life with two AA batteries.The latest computer programs were also used, including the latest version of the GIS program (10.8 Arc Scene (Art Catalog 10.8) (Arc Map) in mapping, and using MINITAB program for making statistical quality control maps as well as minitab program (in statistical analysis of data) and many other modern technological meanspainting looks (1).

painting (1) Adopting the GPS program to locate samples of the remnants of war



Source: field study dated 2/1 2022

Eighth Study concepts

UXO: It is a general term for unexploded remnants of war.

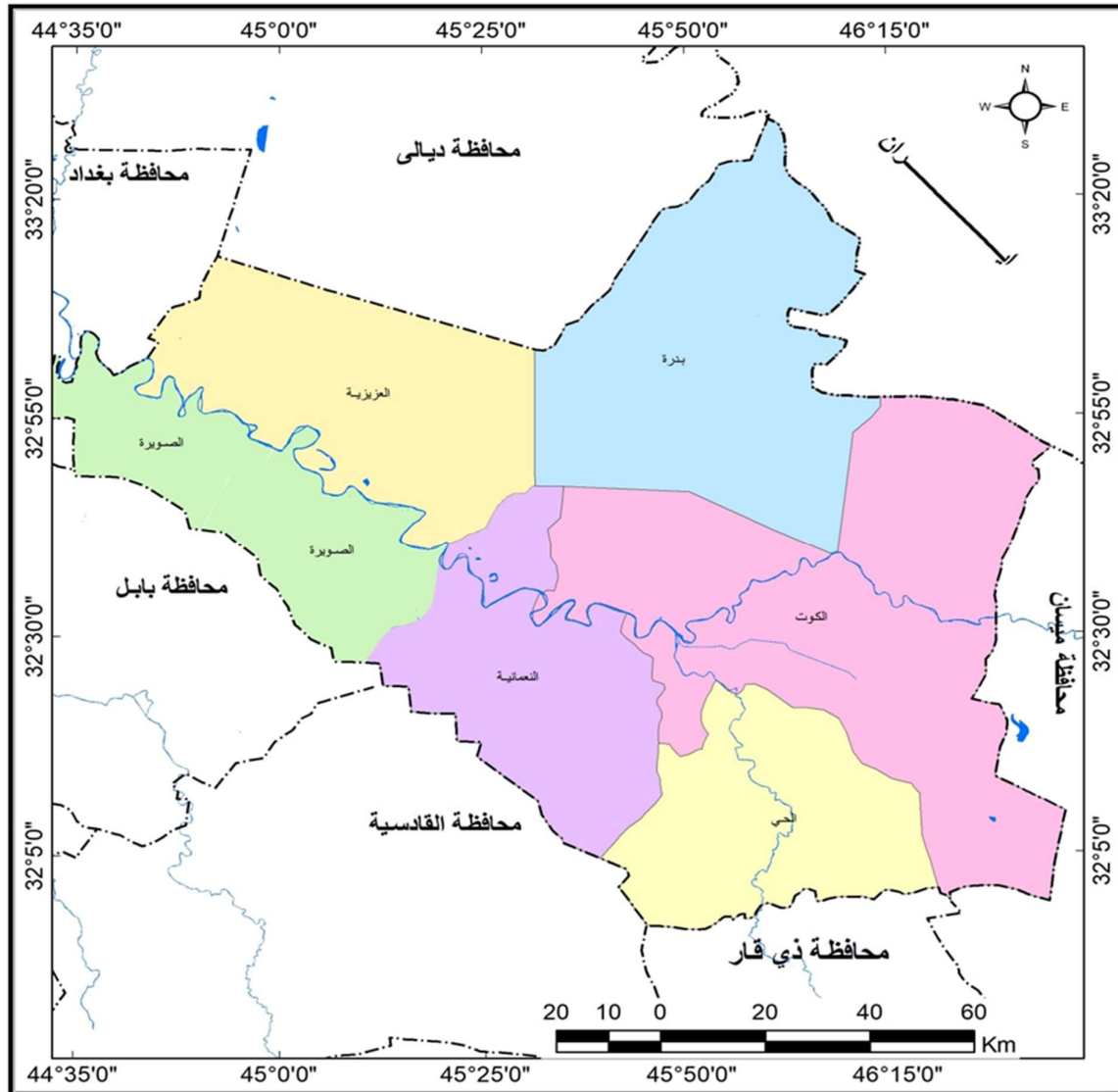
ERW: Explosive ordnance in international standards includes “bombs, warheads, guided and ballistic missiles, artillery, mortars, rockets, small arms ammunition, mines, torpedoes, depth grenades, fireworks, and all similar or related items or components of explosive nature (Mohammed,2008, p9)

TNT It is a chemical compound and its chemical formula is $\text{CH}_2(\text{NO}_2)_3\text{CH}_3$ This yellow solid is sometimes used as a reagent in chemical formulations, but it is best used as a useful explosive with suitable treatment properties. (Sbitan, (2012, p4)

Geographical distribution of remnants of war in Wasit Governorate

The geographical location is one of the most important natural components in regional studies, and the starting point for all these studies, because of its impact on giving the region characteristics that distinguish it from other regions. An element of the important natural elements that contribute to the formulation of the characteristics of Wasit Governorate, through which it is possible to exploit the natural resources provided by the environment to serve the governorate, and it would also reveal the positive role that affects the life of the population and their activity within the framework of the administrative borders of the governorate.

That provincial center is the city of Kut, which is a distance from the capital, Baghdad((172 km(Hanoush,(2013,p66, and about the center of Babil Governorate (Hilla city)((274 km), and from the center of Al-Qadisiyah Governorate (Al-Diwaniyah city) (192 km), and from the center of Dhi Qar Governorate (the city of Nasiriyah)(204)km, and from the center of the governorate towards the governorate of Maysan, dividing it into two approximately equal parts (Al-Qargholi,2019,p95), and the governorate’s center is located on a peninsula surrounded by the Tigris River from three sides to the east, west and south (Al-Zawka (1984,p55). It is noted from Map (2) that Wasit Governorate includes (6) districts) which are as follows: -



a map (2) Distribution of districts in Wasit Governorate

Source: From the researcher’s work based on the programGIS

1- Kut District: It is one of the largest districts in the governorate in terms of area and population, with an area of (5144000000 m²), i.e. 30%)of the total area of the province, and the number of its population up to (387,350 people) according to population estimates for the year((2007, at a rate of 36 percent))From the total population of the province(Ismael,1993,p164)The district includes three administrative units: the district center (Kut city), Sheikh Saad and Wasit districts,

in which a large agricultural and industrial project (Dujaila project) and a cattle station located in the district are the famous Kut Dam, the Kut textile factory, and an important airport that was formerly a military air base, as well as Wasit University and its multiple faculties, and the district is famous for its agriculture (administrative guide to Wasit Governorate2021) that in the district of Kut there are many war-polluted sites that contain the remains of waste, most of which date back to the days of the Iraqi-Iranian war, others to the Iraqi-American war, and these sites varied in their distribution and area in the district as shown in Table (3)

Schedule ((3) Geographical distribution of war remnants in the Kut district

number of projectiles			The ratio %	Uncleared space			The ratio %	cleared space			The ratio %	Area m2	polluted site
73,353	H	6,36	2,62	1000000	H	1,36	16,71	6000000	H	1,47	18.3	700000	Kut military website
63	L	1,09	0.47	180000	L	0,45	0.55	200,000	H	0,42	5,2	200000	The throwing field is located on the Kot Badra road
365	L	0,79	0.34	130,000	L	0.03	0,77	170,000	L	0.06	0.7	300,000	The age area in the kardia
210	L	0	0	disinfectant	H	0,4	6,63	1765,993	L	0.37	7,6	1,765,9	The website of the Lebanese Walston Company
3		—	—	Doubtful body of water		—	—	—	L	0.03	0.04	1600	Dujaili River Basin
unknown	L	0	0	disinfectant	L	0.001	0.001	552	L	0.001	0.001	552	arrivals
There is no	L	0	0	disinfectant	L	0.002	0.02	1000	L	0.002	0.002	1000	Concrete bridge over

													the Dujaili River
13	L	0	0	disinfectant	H	6,14	70,92	2700000	H	5,67	70,9	270000	Ahdab oil field
727		3,43		1,310,000		95,34		35137545		100		380691	the total

Source, Directorate of Civil Defense, 2021 data not advice

percentage= penalty/all X 100

(Punishment in apparent value)

/(All in average) Positional Concentration Equation x 100

Concentration Ratio = (1) and more high concentration

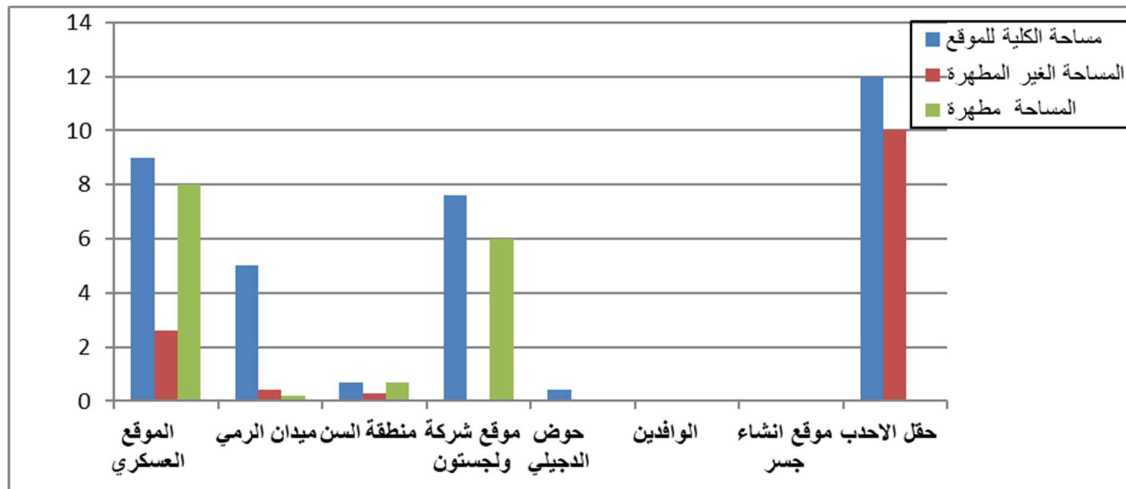
less than (1) Low focus (Mohamed, (2008, P127)

As we will denote the value of the high concentration with the symbol (H (taken from the word) High) in a high and symbolic sense L) for low concentration is taken from the word (LOW) meaning low.

notes through the table)3) Figure (2) that the district of Kut includes a group of sites contaminated with war remnants, distributed in the eastern and western parts of the district, and their number reached (8) sites represented in the military site of Kut 7000000)m2 as it was an Iraqi army camp a year ago((2003) It was bombed with what contained the mechanisms and remnants of the army's equipment represented by mortars and-RBG And personal mines and PKC ordnance because of the importance of the military site geographically, in which the remnants and ordnance were concentrated, and they are still to this day, their remnants and their clear and tangible impact. Aox), where iron is one of the most important components involved in the manufacture of munitions of various kinds, followed by other heavy elements such as cadmium, copper and lead, where the percentage of the contaminated site reached a percentage in relation to the judiciary.(18.3(my site focus)1,47\H)As for the area cleansed from it, it reached((6000000 m 2 with a percentage of 16,71)) focus my site)1,36\H)As for the unpurified area, it reached(1000000)m2 according to(2,62) focus my site(6,36/H)The number of projectiles(73%)As for the other site, the throwing field, located on the Kut Badra road, the contaminated area reached it((2000000 m 2 at a rate of 5,2)) focus my site(0.42\L)As for the disinfected area,(200,000) m2 and a percentage of 0.55)) focus my site)0,45\L) aWhat is the unpurified area?(180000)m2and according to(0.47) focus my site(1,09\H)As for the number of projectiles,(36) As for the Al-Sun area in Al-Kardia, the percentage of the contaminated area was reached((30,000m2and according to 0.7)) focus my site(0.06\L)And the disinfected area reached((170000 .)m2in the rate of 0.77)) focus my site)0.03\L)As for the remaining space,(130,000) m2 and a percentage of 0.34)) focus my site)0.97\L)As for the number of bullets?(360 varied between the remnants of army vehicles and ammunition and cluster bombs after the American bombing. The site of the Wellstone Company was (1,765,993)m2and according to((7,6focus my site(0.37\L) The area was cleansed (1765,993)m2and according to (6,63)focus my site(0,4\L)The number of projectiles(210)The aforementioned site is an extension of the military site and contains the remnants of the same, but it was less affected than the military

site, and this can be inferred by analyzing the soil samples and the lack of ammunition remnants compared to the military site.1600)m2and according to (0.04)focus my site(0.03\L)This site is doubtful if it was not bombed, but through a field study and a personal interview with the individuals who live in the area, it was reported that during the war, the people resorted to throwing their weapons in the river basinAs for the immigrants, the contaminated area reached552(m2 by percentage)0.001) focus my site)0.001\L) And the area cleared (552(M2 means that the site is disinfected, but it is not free of its radioactive residues and heavy metals remaining in the soil of the site. As for the site of a concrete bridge vessel on the Dujaili River, the contaminated area has reached it)1000(m2 by percentage)0.002) focus my site)0.002\LAs for the purified area, it reached1000(m2 The site is disinfected, but the Al-Ahdab oil field has reached the contaminated area)27000000(m2 by)70,9) and focus my site)H\5,67(The area cleared)27000000(m2 by percentage)70,9) and focus my site)6,14/HThe site is disinfected, but it is not free of remnants of radioactive munitions and heavy metals.

the shape (2) Geographical distribution and percentages of the purified and remaining areas in the district of Kut



Source: From the researcher’s work, based on data from a table (3).

-2 Badra District:It is one of the largest districts in area after the district of Kut and the least populated, as its area is (3650000000 m2) and by(21.2%)of the total area of the province, and the number of its population is up to (22,498 people) for the same year, at a rate of(2.1%)Of the total population of the governorate 0, the district includes two administrative units, which are the district center (Badra city), which is about (70 km) from the center of Al-Kut district and Jassan district. The district is located in the north-east of the province bordering the state of Iran, specifically the Iranian district of Mahran, where the border crossing with Iran is located. The district is famous for its orchards with outstanding production of fruits and dates, as well as the production of other crops such as wheat and barley. It is also famous for the presence of gravel and sand quarries, which includes (70 quarries), and the products of these quarries are transported to the various governorates of Iraq, especially the neighboring governorates of Wasit governorate, and it contains economic deposits of minerals manufactured for cement. (Al Janabi,1987, p88)

Schedule (4) Geographical distribution of remnants of war in Badra District

polluted site	Area m2	The ratio %	positional concentration	cleared space	The ratio %	positional concentration	Uncleared space	The ratio %	positional concentration	number of projectiles

Damj village	17457	0.4	0,005	L	7000	0.03	0,002	L	10457	0.005	0,003	L	122
Badra field	1670000	91.75	5,51	H	34,82,069	1.08	1,14	H	163517931	89.9	6,06	H	1791
Zorbatiyah sub-district	2,00,000	0.11	0.006	L	2,00,000	0.9	0.06	L	Working on it				558
Shehabidistrict	12000200	6.6	0.39	H	12000200	6,6	3,94	H	There is no	-----			172
The construction site of a bridge in Zorbatia	25,00,000	1.68	0.08	H	25,00,000	1,36	0,82	H	disinfectant	0		L	There is no
Karmicha outpost	24425	0.006	0.008	L	24425	0.006	0.008	L	disinfectant	0		L	20
the total	18174208		99.7		18283694		10.69		163528388		89.9		2785

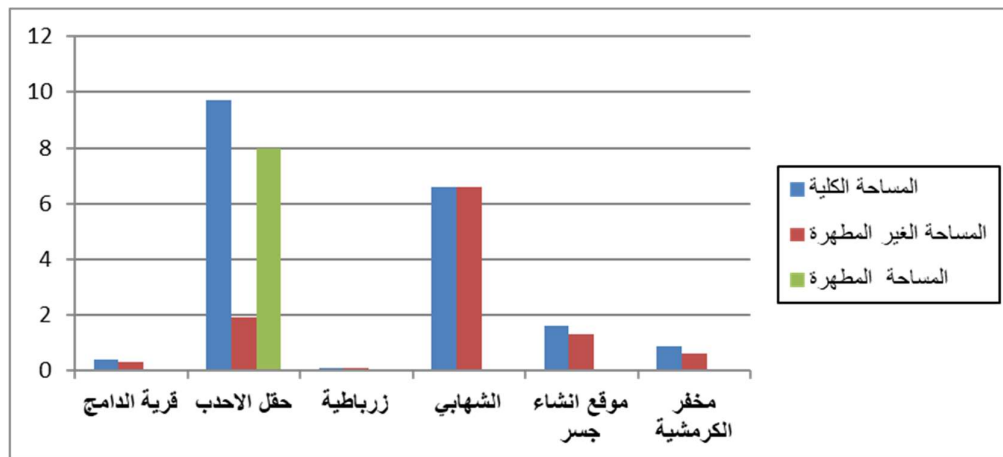
Source, Directorate of Civil Defense, 2021 Data Not Advice

through the table)4) And Figure (3) for the distribution of military remnants in Badra district, it was found that they were spread in (6) locations in the district, and most of them dated back to the war (1980) the Iran-Iraq war, since the district borders with the State of Iran, as the war remnants and munitions in the district varied by the type of ammunition And the ways of their spread, and the judiciary's share of landmines was the largest among the districts of the governorate, where minefields are still to this day claiming the lives of citizens and exposing the other section to injuries represented in cutting limbs, and the percentages of elimination through injuries were the largest among the residents of other districts because the areas of the district are of a mountainous nature It is a tourist destination for residents on most occasions. The waste was distributed over several sites, the first of which was the village of Damj, which was mentioned by the Treatment Division of the Civil Defense Directorate during the daily field survey, and the percentage of the area contaminated by war was ((17457 .)m²and according to 0.04)) focus my site(0.005/L)It was the area cleansed of it(7000)m²and according to(0.03) focus my site(0.03\L)As for the area that is not cleaned?(10457)m²and according to)\0.005) focus my site)0.0003\L)The number of projectiles processed(122) by the processing division

As for the second site, it was represented in the Badra field, which is being worked on according to the priorities of the company operating the project, which are presented in the form of tasks amounting to(50) tasks that were surveyed by the technical survey method in addition to the non-technical survey by the treatment division, as the percentage of pollution in it was (167,000,000).m²and according to(91,75) focus my site(5,51/H)As the percentage of the disinfected area reached((3482069 .)m²and according to(1.8) focus my site)1,14\H)As for the space?the othersDisinfectant is being worked on by the treatment divisionIts percentage was ((89.9focus my site(6,06/H)The number of projectiles(1791)m²Zorbatiyeh district is considered one of the most important war-contaminated sites, as the area of the contaminated area reached200000)m²in the rate of (0.11)focus my site(0.006\L)As for the purified space in it?(2000)m²and according to)\0,9) focus my site(0.06\L)As for the remaining space, it is being worked on and estimated at a percentage90%)Because it contains minefields represented by the scattered personal (Valmara) mines, most of them are connected with a wire connected to the other mine, as the first one splits the other, and the vehicle mines date back to the Iran-Iraq

war(1980) As for the number of projectiles, it is estimated at 558, and work is being done to treat and remove mines by the treatment division. As for the Shehabi border area, which contains quantities of mines and ammunition, being borderline and exposed to torrential rains, which play a major role in changing and sweeping mines from one place to another, and sometimes because of Water erosion leads to burying mines in the transported sediments, as the percentage of the contaminated area reached (12000200).m2and according to focus ((6,6focus my site(0.39\L)And the purified space(12000200)m2It is completely disinfected. As for the construction site of a concrete bridge in Zorbatiyeh district, it has reached an area((250,000m2and according to 1,68)) focus my site(3,49/H)And its purified area(250,000)m2The area is completely cleansed of war remnants. As for the Karmisheh mountain station, the percentage of the contaminated area was((24,425m2and according to (0,06)focus my site(0.008\L) aWhat is the cleared area?(24425)m2and according to(0.06) focus my site(0.08\L)It was the number of projectiles20)) and the area was treated representing the appearance(3) Geographical distribution and percentages of the purified and remaining areas in Badra district.

the shape (3) Geographical distribution and percentages of cleared and remaining areas in Badra district



Source: From the researcher’s work, based on data from a table (4)

-3 Numaniyah district: its area (2116000000 m2), at a rate of 12.3%)of the total area of the province, and the number of its population is up to (143,981 people) for the same year, at a rate of 13.5%)Of the total population of the governorate 0, the district includes two administrative units, which are the district center (the city of Numaniyah), which is about (about40 km) from the center of the district of Kut and the sub-district of Al-Ahrar (Kember, 2009, p10)

Schedule (5) Geographical distribution of war remnants in Numaniyah district

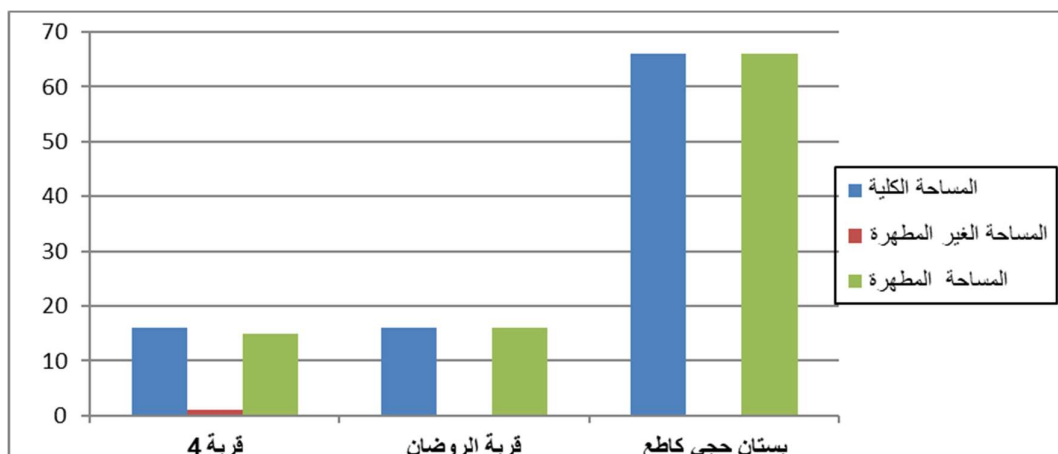
polluted site

numbe r of project iles	positional concentra tion	The rati o%	Uncle ared space	positional concentra tion	The rati o%	clear ed spac e	positional concentra tion	The rati o%	Area m2	pollut ed site

5	H	1	15,3	46000	H	0.04	1,3	4000	H	0,5	16,6	500,000	4. village
164	L		0	There is no	H	0.59	16,6	500,000	H	0,5	16,6	500,000	Al Rawdan Village
8	L		0	There is no	H	2,36	66,6	2000000	H	2	66,6	2000000	Bostan Hajji Kataa
177		15,3				84.5		2540000		99,8		3000000	the total

Source, Directorate of Civil Defense, 2021 Data Not Advice

We note through the table (5) and shape (4) Numaniyah district includes (3) sites contaminated by war represented in (Village 4), which reached the contaminated area ((500,000, at a rate of 16.6%) focus my site (L\0,5) From the area of the judiciary and reached the area purified (500,000m² in the rate of (1,3 focus my site (0.04\L (and the unpurified area) (460,000 .)m² in the rate of (15,5) focus my site (1\H) It contains groups of munitions in small proportions, represented by mortar shells and artillery shells. It was also found that there were high levels of radiation in the area through the field study, and the proportions of heavy metals were high in the soil, and the number of projectiles was (5) As for the village of Al-Rawdan, the contaminated area was reached ((500,000, at a rate of 16.6)) focus my site (0.5/L) The percentage of the area cleansed was (500,000)m² in the rate of (16,6) focus my site)0.59/L) What is a disinfectant? completely Where the number of projectiles (164) As for the orchard of the citizen Haji Kati', it has been surveyed M On the one hand, according to an order from the Wasit Police Directorate, after a burning incident occurred in the orchard, during which some hidden ammunition exploded, and because the orchard witnessed the spread of some army units during the war ((2003 when the percentage of the contaminated area was 200,000)m² in the rate of 66,6)) focus my site (2\H) cleared space (2000000)m² in the rate of 66,6)) focus my site)2,36\H) It was the number of projectiles (8) represents the appearance (4) Geographical distribution and percentages of the purified and remaining areas in the Numaniyah district the shape (4) Geographical distribution and percentages of cleared and remaining areas in Numaniyah district



Source: From the researcher's work, based on data from a table (5)

4- District district: an area of (1999000000 m²), at a rate of 11.7%. of the total area of the province, and the number of its population is up to (163696 people) for the same year, at a rate of 15.4% of the total population of the governorate. The district includes three administrative units, which are the district center (the district city), which is about (40 km) from the district center of Kut and the two districts of Al-Muwaffaqla and Al-Bashaer.

schedule (6) Geographical distribution of remnants of war in Al-Hay District

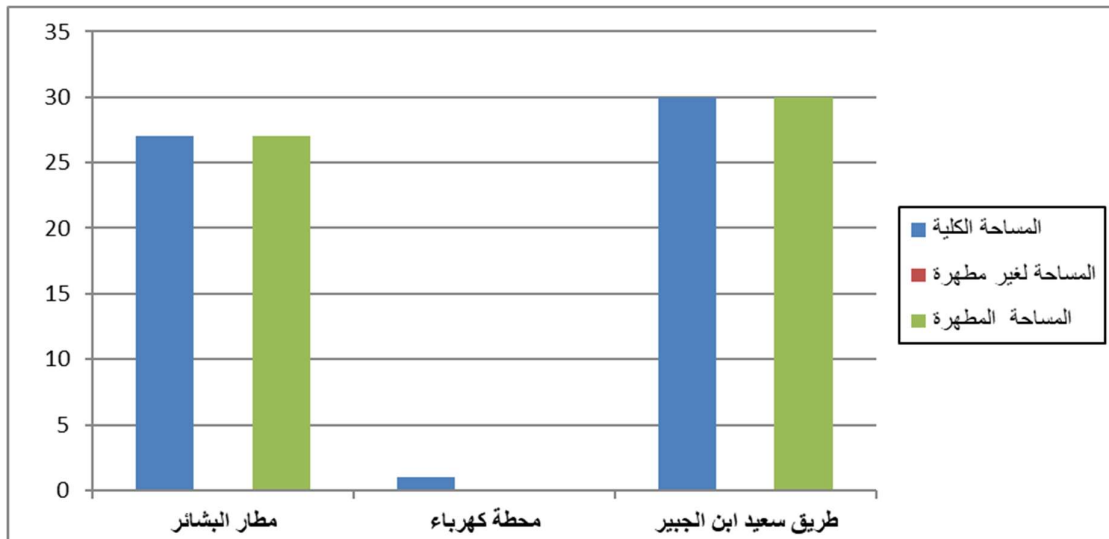
number of project files	positional concentration	The ratio %	Uncleared space	positional concentration	The ratio %	cleared space	positional concentration	The ratio %	Area m ²	polluted site
13	L	0	0	L	0.85	27,936	L	0.83	27,936	Al-Bashaer Airport
—	L	0	—	L	—	—	L	0.05	1,800	electricity station
There is no	L	0	0	H	2,14	70,200	H	2,10	70,200	Saeed Ibn Al-Jubeir Road
13			0		98.2	1397836		100	1424236	the total

Source, Directorate of Civil Defense, 2021 Data Not Advice.

notes through the table)6) Figure (5), which represents the geographical distribution of war remnants in the district of Al-Hayy, that they spread in (3) sites, the first of which is Al-Bashaer Airport, which is a military airport located in the southeastern parts of the district. M2 Its

remnants varied between the munitions of the Iraqi army attached to the area previously and the remnants of the bombing of the air aggression, such as the Kufa type, most of which were destroyed. Percentage of contaminated area (27,9) focus my site (0.83/L) As for the area of the judiciary and the area cleared (397800)m² Purified by (27,9) focus my site (0.85/L) The number of projectiles in it (13) As for the second site in the district district, it was represented in a power station in the district center that was bombed previously during the Iraq war of the year (2003) No data were available about the proportions of military remnants in it. Through the field study, soil samples were taken to measure the proportions of heavy metals, which are among the most important components of military munitions. As for the third location of the district, which is Saeed Ibn Al-Jubeir Road, the percentage of the contaminated area in it (1000000) m² and a percentage of (70,2) focus my site (2,10\H) The percentage of the area cleansed from it (100000)m² in the rate of 70,2)) focus my site (2,14/H) The site is completely disinfected It does not contain any projectiles that represent the appearance (5) Geographical distribution and percentages of cleared and remaining areas in the district district

the shape (5) Geographical distribution and percentages of cleared and remaining areas in the district district



Source: From the researcher's work, based on data from a table (6)

5- Azizia District: Its area is (2467000000 km²), or 14.4%.) of the total area of the province, and the number of its population is up to (162937 people) for the same year, at a rate of 15.3%) Of the total population of the governorate 0, the district includes two administrative units, which are the district center (Al-Aziziyah city), which is about (about 90 km) from the center of the district of Kut and the sub-district 0

Schedule (7) Geographical distribution of remnants of war in Aziziyah district

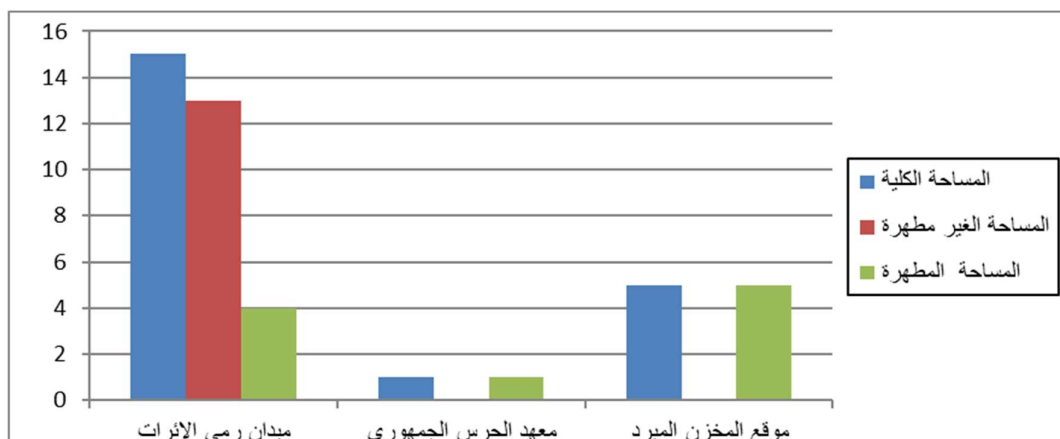
number of projectiles	positional concentration		The ratio %	Uncleared space	positional concentration		The ratio %	cleared space	positional concentration		The ratio %	Area m ²	polluted site
	H	1			H	0,96			H	2,45			
3110	H	1	73.2	1880000	H	0,96	8,5	2,200,000	H	2,45	81.8	2100000	Airplane

													throwing field
472	L	0	0	antiseptic	H	0,20	1,8	467317	H	0,05	1,8	467317	institute Republican Guard
87	L	0	0	antiseptic	H	1,83	16,3	420200	H	0,49	16,3	420200	cold store location
3669	73.2			1880000	26,6			6869317	99.9			25669317	the total

Source, Directorate of Civil Defense, 2021 data not advice

notes through the table)7) and Figure (6) For the distribution of military remnants in the district of Aziziyah that the remnants of war in the district were distributed to (3) Sites represented in the field of launching aircraft, as they reached the area contaminated by war (21000000m² and according to 81.8)) Mfocus my site (2,45/H) The area of elimination was the area of purification (22000000) i.e. a percentage of 8,5)) focus my site (0,96\L) As for the area that is not cleaned? (200,000) with a ratio of (73.2/H) focus my site (1\H) The number of projectiles (3110) Parts of it have been treated. As for the second site in Al-Aziziyah district, it is represented by the Republican Guard Institute, which is an institute for training the former People's Army. Its remnants were from the training munitions and the bombing it was exposed to in the Iraqi-American war in (2003). The contaminated area in it ((467,317 .)m² and according to (1,8) focus my site (0,05\L) As for the disinfected area, (467,317 .) and by ((1,8 focus my site (0,20\L) Any disinfectant completely and the percentage of ballistics reached ((427) As for the third site in the district, it was represented in the cold store site, where the percentage of the contaminated area was (4202000), with a percentage of (16,3) focus my site (0,49\L) And the cleaned space was ((4202000 in the rate of ((16,3 focus my site (1,83\H) And theThe site is disinfected from tangible residues and residual munitions, but it contains radiation and heavy elements in the soil, which were clarified in the third chapter, where the percentage of projectiles that were treated in it reached 87 by the treatment division of the Directorate of Civil Defense.

the shape (6) Geographical distribution and percentages of cleared and remaining areas in Aziziyah district



Source: From the researcher's work, based on data from a table (7)

6 - Essaouira District: its area (1777000000 m²), at a rate of 10.4%)of the total area of the province, and the number of its population is up to (184,488 people) for the same year, at a rate of 17.3%)Of the total population of the governorate 0, the district includes two administrative units, which are the center of the district (the city of Essaouira), which is about (about120 km) from the center of the district of Kut and the sub-district of Al-Zubaydia. The district is located in the northwest of the governorate, as it borders the governorate of Baghdad from the south, and Babel governorate from the east, (Wasit Municipalities Directorate, Planning Department, unpublished data, 2022).

Schedule (8) Geographical distribution of remnants of war in the district of Essaouira

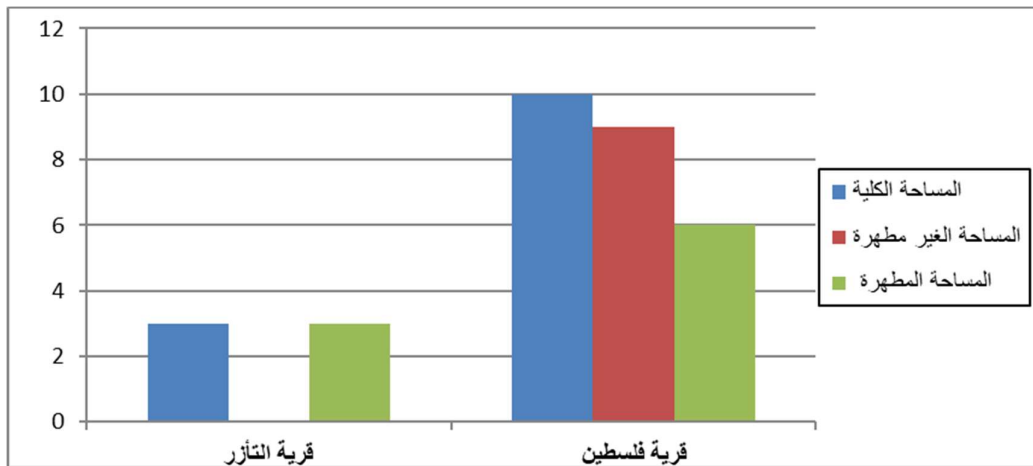
number of projectiles	positional concentration		The ratio %	Uncleared space	positional concentration		The ratio %	cleared space	positional concentration		The ratio %	Area m ²	polluted site
624	L	0	0	antiseptic	H	0.75	3,5	300,000	H	0.07	3,8	300,000	Synergy Village
5635	H	1	89,5	70000	H	1,25	6.6	500,000	H	1,92	96.4	750000	Palestine village
6259	89,5			70000	10,5			80000	100			780000	the total

Source, Directorate of Civil Defense,2021 Data Not Advice

It is noted by the table (8) and Figure (7), which represents the distribution of war remnants in the district, as they were distributed in two villages, the village of Al-Tazur, where the percentage of the contaminated area reached((30,000m²and according to (3,8)focus my site (0.07/L)From the space of the judiciary and KanPercentages of treated lands in the village30000)) And then the rate of((3.5focus my site (0.75/L)That is, it is completely disinfected and the number of projectiles in it has reached((624As forThe other site in the district of Essaouira is the village of

Palestine, which was marked through the daily field survey, as it contains large quantities of war remnants, as the area of the contaminated waste has reached (7,500,000) and a percentage of 96,4)) focus my site (1,92\H)As for the disinfected area,((500,000 at a rate of 6.66)focus my site (1,25\H) and the unpurified area (7000000(m2 by percentage)89,5(My site is focused)1\H)The number of projectiles(5635)

the shape (7) Geographical distribution and percentages of the purified and remaining areas in the district of Essaouira



Source: From the researcher's work, based on data from a table (8)

Schedule (9) Sites contaminated with military remnants and their area in Wasit Governorate 2022.

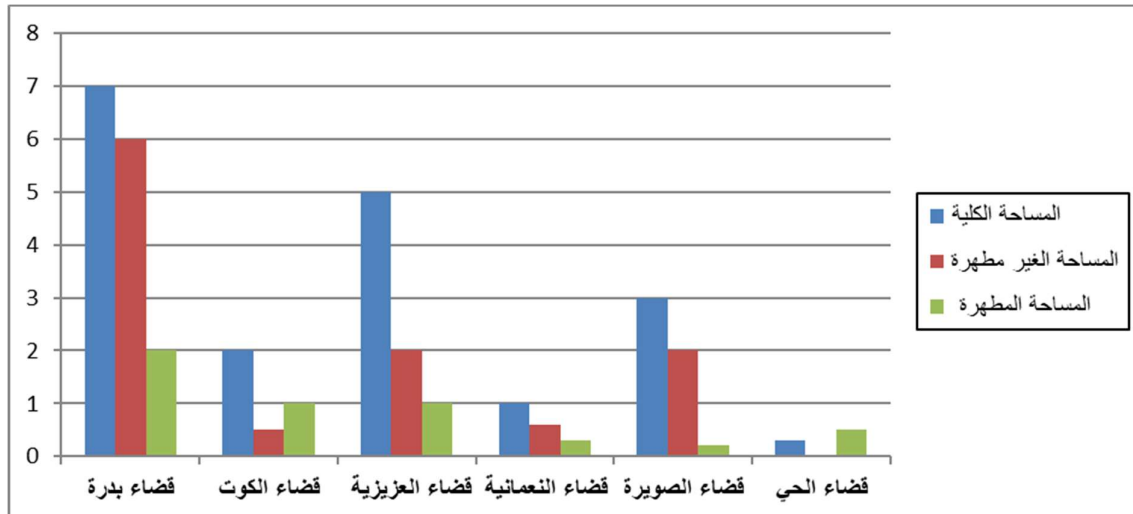
number of projectiles	positional concentration	The ratio %	Uncleared space	positional concentration	The ratio %	cleared space	positional concentration	The ratio %	Area m2 contaminated	Elimination area in square metres	polluted site			
2785	H	5,13	63,4	163475845	H	1,68	7,9	18283694	H	4,23	70,5	181759539	365000000	Badra District
727	L	0.04	0,5	1,310,000	H	3,24	13,6	35137545	L	0,88	14,7	38069145	514400000	Kut District
3669	H	0.05	7,9	1880000	L	0.63	2,6	6869317	L	0.59	9,9	25669317	246700000	Azizia District
6259	L	0.21	2,7	7000000	L	0.07	0,3	80000	L	0.18	3,02	780000	177700000	Essaouira District
177	L	0.01	0.17	460000	L	0.23	0,9	2540000	L	0.06	1,8	300000	211600000	Numaniyah

															District
13	L	0	0	0	L	0,12	0,5	1397 836	L	0.03	0.5 4	139783 6	199900 0000	district district	
13630		74,13	19104 5845		25,9	6502 8392		100			257695 837	171530 00000	the total		

Source: Wasit Civil Defense Directorate, Statistics Department, unpublished data.2022

notes from the table (9) For the geographical distribution of the war remnants of the districts in general through Figure (8) that the distribution of military remnants varied from one district to another, and the types of deadly inheritance varied from one district to another according to the military operations and battles that took place in the district. amounted to 3650000000 (m2)and by ((70,5focus my site (4.23/H)Because of the nature of the location of the judiciary as it is a border area with the state of Iran and because of the war(1980) and what they left behind of mines, remnants of unexploded ordnance and remnants of military vehicles, and what they left behind in the soil of the district and its environmental system of exhausts, heavy and radioactive elements, and the disinfected area of the district reached (18283694) with a percentage (7,9)focus my site (1,68\H)Of the polluted area in the district and the area not purified (163475845) and by (63,4)focus my site (5.13/H)of the contaminated area and the number of projectiles ((727), and in the second place came the district of Kut, the center of Wasit Governorate, where the contaminated area reached (38069145)and by ((14.7 .)focus my site (0,88\L)and the percentage of area cleared (35137545 and by (13.6)focus my site (3,24/H) Of the polluted area of the judiciary, while the area not cleansed reached (1310000)m2and by (0.5)focus my site (0.04\L)number of projectiles)2785) Azizia District came in third place (25669317)in the rate of(9,9) focus my site (0.59/L)It was for the purified area (6869317) and by (2,6)focus my site (0.63\L)The area not cleared18800000) with a rate of (7.9)focus my site (0.05\L)and number of projectiles (3669) As for the fourth place, the district of Essaouira, where the contaminated area reached (7,800,000).and by ((3,02focus my site (0.18\L)and spacedisinfectant(800,000) with a rate of (0,3)focus my site (0.07\L)As for the remaining area,7000000) and byfocus my site(2,7)focus my site (0.21\L)of the contaminated area of the district and the number of projectiles)6259)The Numaniyah district came in fifth place, as the contaminated area reached (2116000000(m2 and by ((1,8focus my site (0.06\L) The area was cleared(2540000)m2in the rate of(0,9) focus my site (0.23\L) As for the unpurified area, it reached(460,000)m2 by(0,17)focus my site (0.01\L) aWhat is the district's district ranked sixth and least polluted by war remnants, as the percentage of the contaminated area reached (1397836)and by ((0,54focus my site (0.03\L)The percentage of the disinfected area in it (1397836) with a percentage of (0.5)focus my site (0.12\L) In other words, the district is completely purified, but the Al-Bashaer airport in the district clearly shows the impact of the wars through the field study, where the cluster bombardment was evident in the airport buildings and the destruction they left in the airport.

the shape (8) Geographical distribution and percentages of cleared and remaining areas in the districts of Wasit Governorate



Source: From the researcher's work based on the data in the table.9)

Or not /Conclusions:

1 - The military operations that took place during the period from 1980)-1988 were a direct and main reason for the spread of war remnants and their concentration in the governorate. Badra ranked first in terms of the contaminated area, as it reached 365000000(m²) and by ((70,5 and Kut district in second place reached contaminated area (38069145 And in the third place is the district of Al-Aziziyah. 25669317) in the rate of (9,9) and Fourth place is the district of Essaouira, where the contaminated area has reached. 780000) and by ((3,02 And Numaniyah district ranked fifth, as the contaminated area reached (211600000(m² in percentage)(1,8a What is the district's district ranked sixth and least polluted by war remnants, as the percentage of the contaminated area reached (1397836) and by ((0,54.

2- pollutiona For soil with heavy elements (iron, lead, copper and cadmium) and Which is one of the basic components of ammunition materials war t As the locations of its spread were distributed in Wasit Governorate in all districts As the minimum and upper limits of soil contamination with iron reached (69) And the (4269 (Respectively, while the average pollution rates according to the data of the studied sample) 2169) as such Soil contamination with lead Reached the highest limit in the study area of the site S2 (47.73) while I registered the lowest on the site K4 ((2,981 The highest level of copper contamination reached the site (K5) (70.35) and the lowest on the site H3 ((4,49 The highest limit was registered on the site K5 (15.56635) In general, the levels of cadmium in soil increased in three locations As for the lowest percentage of cadmium in the soil, it was recorded at the site A3 ((0.0724

3- The war remnants affected and were affected by the natural climatic characteristics, including the high temperatures that resulted in the splitting of mines and the intensity of rain and the resulting torrential rains in the sloping sites affected the transportation of military remnants from one place to another.

4- The radiation rates that are due to the impact of the aerial bombardment on the districts of the governorate spread in varying proportions The polluting radiation sources have been identified in Wasit Governorate, which are distributed in all districts of the governorate. The highest radiation value was recorded in the village of Wasit. (4) In Numaniyah district, where it reached (60 (The lowest value in the Al-Sun area in Kardiya was (6)

5- Human injuries: Human injuries come at the forefront of the negative effects of war remnants

and vary between injuries to amputations of a limb and even injuries to life. Often, these injuries are the result of tampering with war remnants. The Kut district center has acquired the largest percentage in terms of Tcountingso(1997)DisabledAnd theIt was about (26.9%) out of the total (18,658), then the percentage increased to reach (28.6%) for the year(2007)MAnd theThe Essaouira District Center ranked second, with a percentage of (24.9%) according to the 1997 census, and the percentage was according to the 2007 survey))M (18.7%), then the district district center ranked third, as its percentage of disability reached (17.5%), according to the census(1997)The percentage was according to a general survey(2007)M (18.4%) from the table also showed that each of the district centers of Badra, Numaniyah and Aziziyah came in the last three ranks, fourth, fifth and sixthso per cent (15.9%), (9.6%), (5.2%)

6- Impact of war remnants in Reducing the size of agricultural land areas due to the destruction of agricultural land and soil contamination left by the war. After the area suitable for cultivation in Wasit Governorate (7293446 dunams in 1977 (became in the year 332908) in 1987), as it is noted that the agricultural activity in the governorate is due, as the percentage difference between the two areas or lands that became unsuitable for agriculture is estimated at (6960538). became (480497 in 1997) (noting an increase in agricultural areas, which may be due to the return of farmers to their lands after the end of the two wars, where the increase was estimated) (147589 and became in (80,999 dunams in 2007), as agricultural lands shrank in 2003)) and became (4261272 in the year 2017 (and due to The situation improved and the wars ended, the percentage of agricultural land increased, as it was estimated at 4027049))

Second, the suggestions:

1. The necessity of placing warning signs identifying the locations of this waste in order to remove it.
2. Legislating special laws that lead to interest in the issue of war remnants.
3. Introducing technical means in the field of treatment of war remnants, especially in the field of mine clearance, as it is one of the difficult remnants.
4. There must be regional coordination to facilitate the operations of purification and removal of remnants of war.
5. Conducting a large public awareness media campaign, the aim of which is to warn them of the danger of remnants of war.

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