



UNOSAT

Halabjah Earthquake, M 7.3, Iran/Iraq of 12 November 2017

Population exposure analysis

Population Exposure Analysis

13 November 2017

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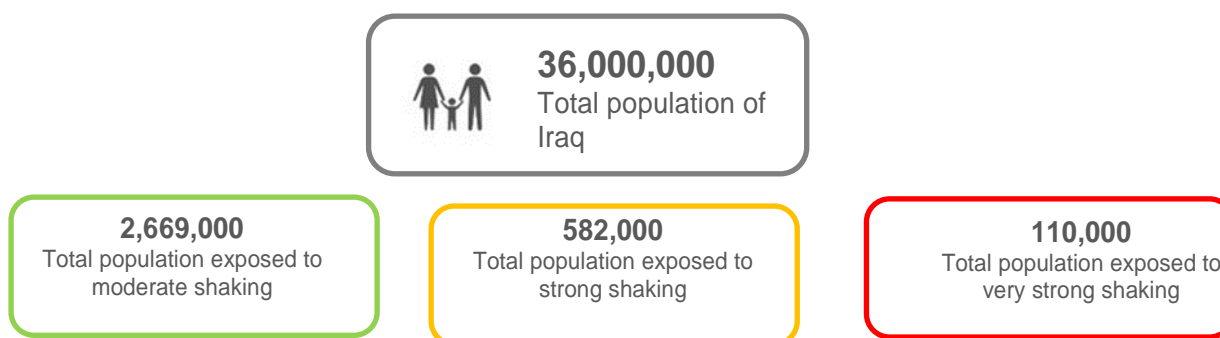


Overview

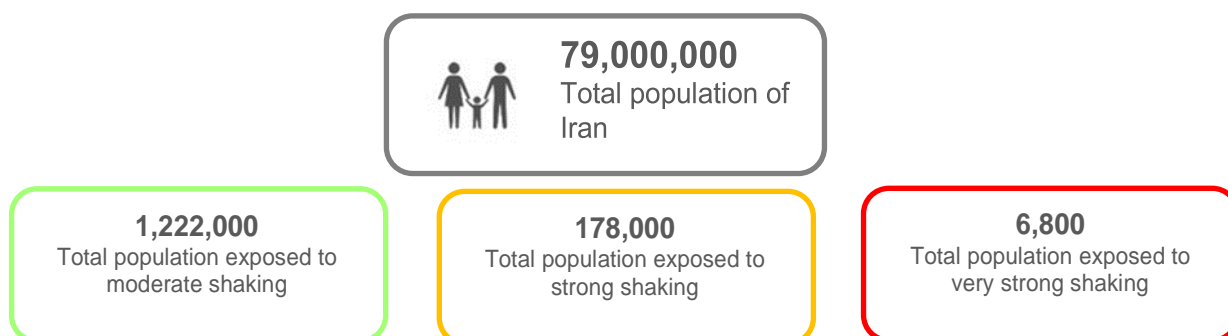
On Sunday 12 November 2017 at 18:18 UTC time, a M7.3 earthquake hit the northern Iran-Iraq border area at a depth of ~20km. The epicenter is located between the Iranian Kermanshah Province and the Iraqi Governorate of Sulaymaniyah, at 220 km northeast from Baghdad, Iraq, and at 620 km west from Tehran, Iran. According to media reports as of 13 November 2017, 335 casualties have been reported and 2,530 people have been estimated injured.

Based on the intensity data from the USGS as of 13 November 2017, and population data from WorldPop-2015 (100m, 1km resolution), UNITAR-UNOSAT conducted a population exposure analysis in response of the earthquake event on the Iran-Iraq border. Based on the analysis results, which are detailed in this report, UNITAR-UNOSAT identified more than 4,700,000 people exposed to intensities greater than V.

Population Exposure in Iraq



Population Exposure in Iran



This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to UNITAR – UNOSAT.

Iraqi Population Exposed to the 7.3M Earthquake on November 12, 2017

Governorate / District	Instrumental Intensity			Total
	V	VI	VII	
	Potential Damage			
	Very light	Light	Moderate	
	Perceived shaking			
Moderate	Strong	Very Strong		
Diyala	639,121	101,150	7,083	747,354
Al-Khalis	200,590			200,590
Al-Muqdadiya	140,780			140,780
Baladrooz	80,925			80,925
Khanaqin	136,186	82,733	7,083	226,002
Kifri	80,640	18,417		99,057
Erbil	131,529			131,529
Erbil	131,453			131,453
Koisanjaq	75			75
Kirkuk	815,605			815,605
Al-Hawiga	9,307			9,307
Dabes	402			402
Daquq	71,958			71,958
Kirkuk	733,937			733,937
Salah al-Din	175,997			175,997
Al-Daur	8,913			8,913
Balad	12			12
Tooz	167,072			167,072
Sulaymaniyah	906,266	480,591	103,194	1,490,051
Chamchamal	114,251	10,583		124,833
Darbandihkan		104,025	10,159	114,184
Dokan	7,223			7,223
Halabja	12,486	86,499	86,083	185,068
Kalar	20,643	161,534	6,951	189,128
Penjwin	36,300	1,971		38,270
Sharbazher	19,576	1,042		20,618
Sulaymaniya	695,787	114,939		810,726
Total	2,668,517	581,741	110,276	3,360,535

[Available data here](#)

Sources:

Intensity Data: [US Geological Survey \(USGS\)](#) downloaded on 13 November 2017 at 11:18 UTC

Administrative Levels: HDX

Spatial Demographic Data: WorldPop (2015), 100 m spatial resolution

Analysis: UNITAR-UNOSAT (13/11/2017)

Iranian Population Exposed to the 7.3M Earthquake on November 12, 2017

Province / County	Instrumental Intensity			Total
	V	VI	VII	
	Potential Damage			
	Very light	Light	Moderate	
	Perceived shaking			
	Moderate	Strong	Very Strong	
Ilam	684			684
Eevan	684			684
Shirvan and	-			-
Kermanshah	692,938	169,700	6,808	869,446
Eslamabad-e-	153,221	18,937		172,157
Gilan-e-Gharb	42,192	172		42,364
Harsin	-			-
Kermanshah	355,652	10,534		366,186
Salas e Babajani	26,168	29,499	6,146	61,813
Paveh	86,607	67,632	170	154,408
Qasr-e-Shirin	8,497	4,453		12,950
Sahneh	3,796			3,796
Sarpol-e-Zahab	16,723	38,474	493	55,690
Sonqor	82			82
Kordestan	528,360	8,158		536,518
Baneh	33,138			33,138
Divandarreh	2,368			2,368
Kamyaran	64,315	102		64,417
Marivan	278,169	8,057		286,226
Qorveh	8,874			8,874
Sanandaj	139,374			139,374
Saqqez	2,121			2,121
West Azarbaijan	62			62
Sardasht	62			62
Total	1,222,044	177,858	6,808	1,406,711

[Available data here](#)

Sources:

Intensity Data: [US Geological Survey \(USGS\)](#) downloaded on 13 November 2017 at 11:18 UTC

Administrative Levels: GADM

Spatial Demographic Data: WorldPop (2015), 1 km spatial resolution

Analysis: UNITAR-UNOSAT (13/11/2017)

IRAN-IRAQ

Northeastern Iraq-Northwestern Iran

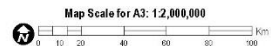
Analysis: 13 November 2017 | Published 13 November 2017 | Version 1.0



Potentially affected areas in Iran and Iraq hit by the 12 November 2017 Mw7.3 earthquake

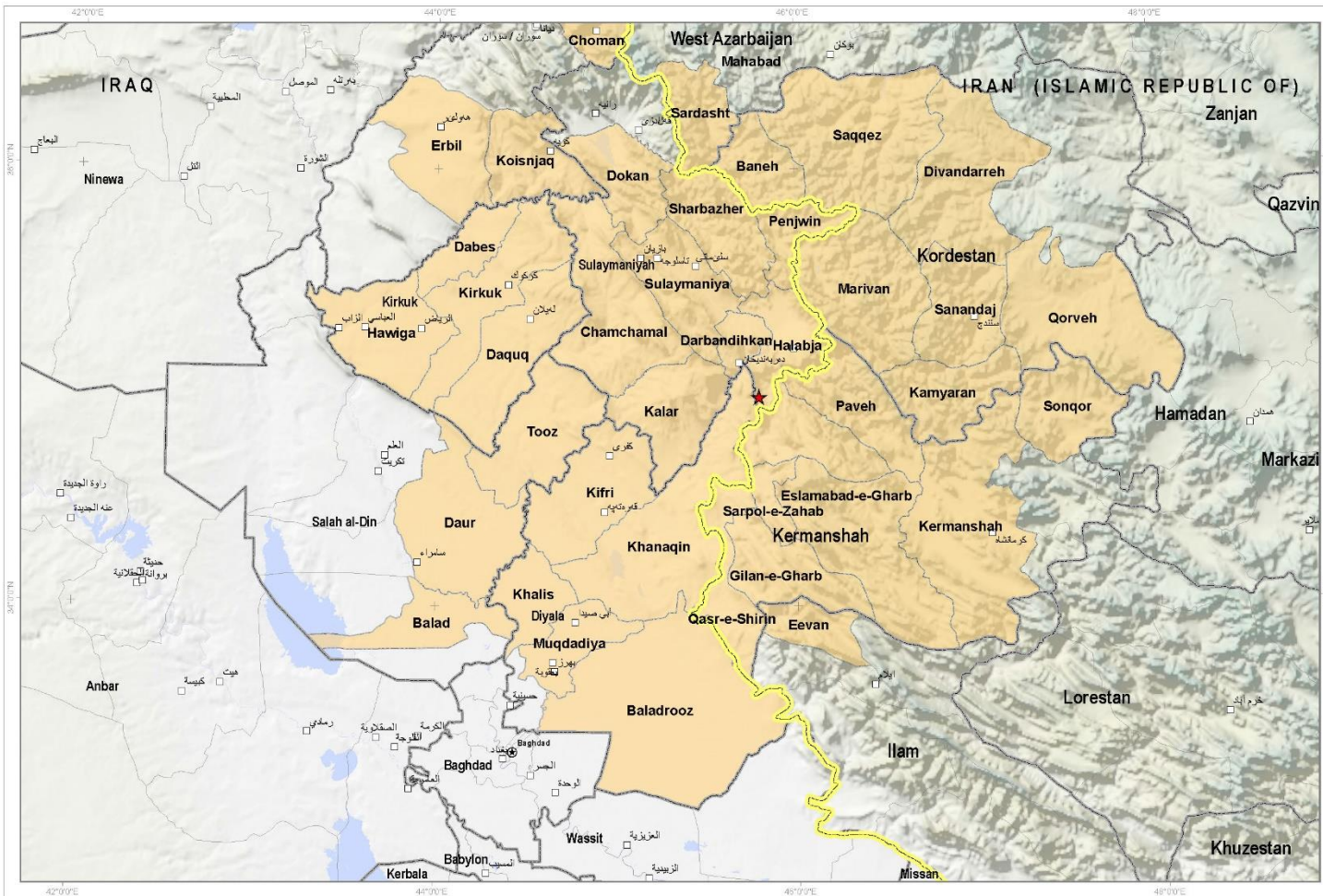
This map illustrates the most affected counties of Iraq and districts of Iran following the earthquake that occurred on 12 November 2017, 32 km south from the city of Halabjah, Iraq. Within the highlighted areas, the population was exposed to moderate, strong and very strong perceived shaking. This data was retrieved from the USGS intensity data as of 13 November 2017. This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to UNITAR - UNOSAT.

- Legend**
- ★ Mainshock epicentre
 - ⊕ Capital city
 - City
 - Most affected districts / counties
 - International boundary
 - Governorate / Province boundary



Analysis conducted with ArcGIS v10.4.1

Coordinate System: WGS 1984 UTM Zone 38N
Projection: Transverse Mercator
Datum: WGS 1984
Units: Meter



Shakemap Data: USGS
Date: 13 November 2017
Source: USGS

Population Data: WorldPop
Date: 2015
Resolution: Iraq 100 m / Iran 1 Km

Admin Boundaries: GADM & HDX
Other Data: USGS, UNCS, NASA, NGA
Analysis: UNITAR - UNOSAT
Production: UNITAR - UNOSAT

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