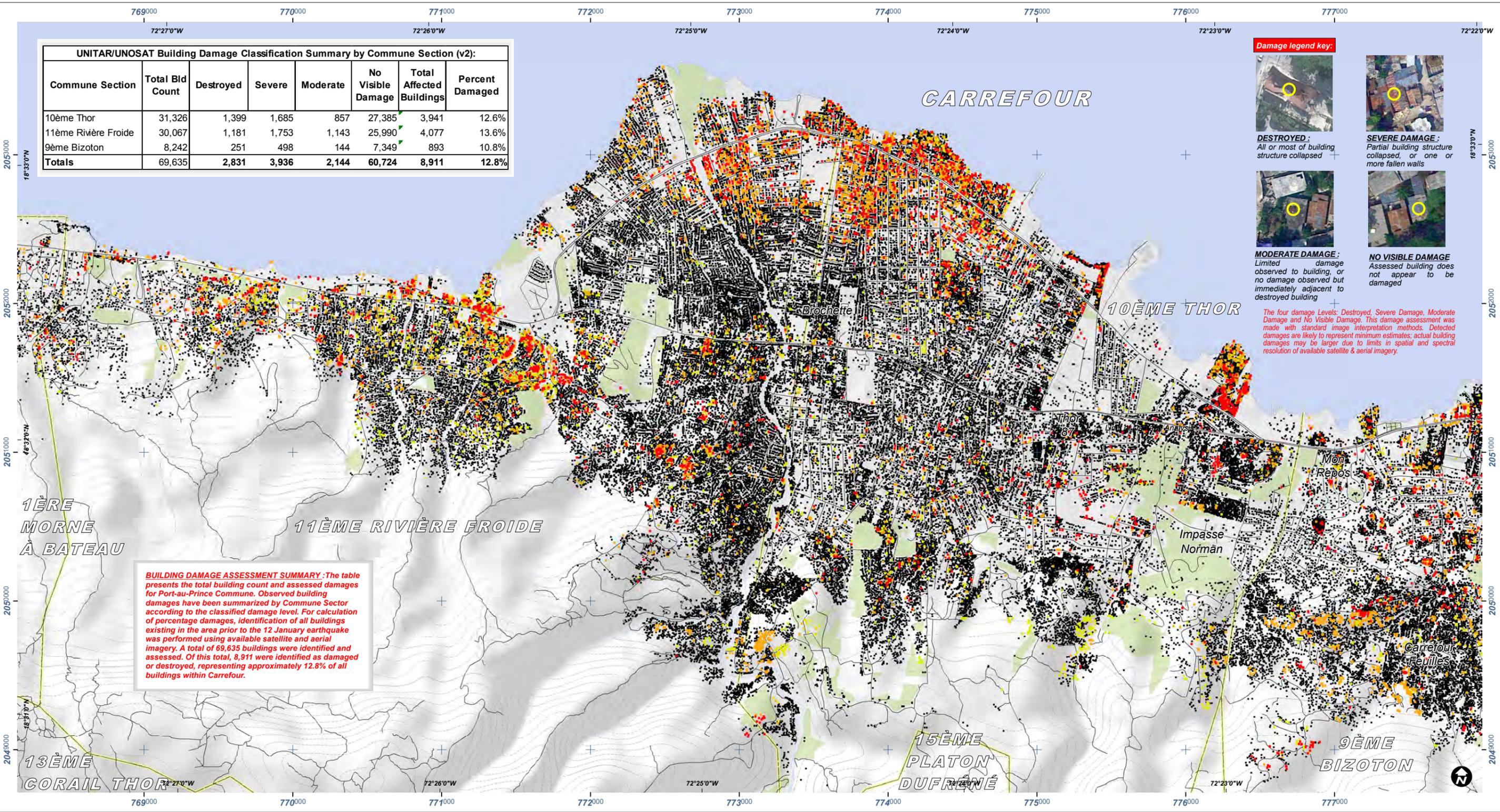


# COMPREHENSIVE BUILDING DAMAGE ASSESSMENT FOR CARREFOUR COMMUNE, HAITI (VERSION 2)

Damage analysis of individual buildings based on post-earthquake aerial photos and pre-earthquake satellite imagery

This map presents a revised total building count and damages as assessed from both satellite and aerial survey imagery covering the Commune of Carrefour. Damaged buildings were classified according to visually-assessed damage levels and summarized in a table by Commune Sector. This work is done at the request of UNDP, and in support of the UN-led efforts in the aftermath of the Haiti earthquake. Swisstopo and the Remote Sensing Laboratories (RSL) at the University of Zurich provided extensive pre-crisis building data in direct technical support of this UN damage analysis. Initial reference data were received from collaborative centers (European Commission JRC with the support of the Stability Instrument; Seriti/Space Charter) and other supporting entities (ITHACA, DLR, OSM). This analysis will be validated in the field during PDNA and recovery activities.

**Earthquake 7.0M**  
**15 February 2010 (20:30:00 UTC)**  
**Version 2.0**  
 Glide No: EQ-2010-000009-HTI



**UNITAR/UNOSAT Building Damage Classification Summary by Commune Section (v2):**

Commune Section	Total Bld Count	Destroyed	Severe	Moderate	No Visible Damage	Total Affected Buildings	Percent Damaged
10ème Thor	31,326	1,399	1,685	857	27,385	3,941	12.6%
11ème Rivière Froide	30,067	1,181	1,753	1,143	25,990	4,077	13.6%
9ème Bizoton	8,242	251	498	144	7,349	893	10.8%
<b>Totals</b>	<b>69,635</b>	<b>2,831</b>	<b>3,936</b>	<b>2,144</b>	<b>60,724</b>	<b>8,911</b>	<b>12.8%</b>

**Damage legend key:**

**DESTROYED:** All or most of building structure collapsed

**SEVERE DAMAGE:** Partial building structure collapsed, or one or more fallen walls

**MODERATE DAMAGE:** Limited damage observed to building, or no damage observed but immediately adjacent to destroyed building

**NO VISIBLE DAMAGE:** Assessed building does not appear to be damaged

*The four damage Levels: Destroyed, Severe Damage, Moderate Damage and No Visible Damage. This damage assessment was made with standard image interpretation methods. Detected damages are likely to represent minimum estimates; actual building damages may be larger due to limits in spatial and spectral resolution of available satellite & aerial imagery.*

**BUILDING DAMAGE ASSESSMENT SUMMARY:** The table presents the total building count and assessed damages for Port-au-Prince Commune. Observed building damages have been summarized by Commune Sector according to the classified damage level. For calculation of percentage damages, identification of all buildings existing in the area prior to the 12 January earthquake was performed using available satellite and aerial imagery. A total of 69,635 buildings were identified and assessed. Of this total, 8,911 were identified as damaged or destroyed, representing approximately 12.8% of all buildings within Carrefour.

**Building Point Classification**

- Destroyed
- Severe Damage
- Moderate Damage
- No Visible Damage

**Map Symbols**

- Main Building Complex
- Park / Forest
- Commune Boundary
- Section Boundary
- Water Body
- Cemetery
- Primary / Secondary Rd
- Analysis Extent

Elevation contours in 20m intervals  
 UTM grid coordinates given in 500m intervals

**Map Scale for A3: 1:25,000 (A4 Print Scale 1:35,000)**

Satellite Data	WorldView-2	Landcover Data	CNIGS, Infoterra, OSM, OCHA
Imagery Dates	19 Dec. 2009 / 7-15 Jan. 2010	Road & Urban Data	Open Street Map
Resolution	50cm	Place Names	OCHA, Google Map Maker
Copyright	DigitalGlobe	Other Data	MINUSTAH, USGS, NGA
Aerial Photos	NOAA / Google	Elevation Data	ASTER GDEM
Imagery Date	18 Jan / 21 Jan 2010	Source	METI & NASA 2009
Copyright	NOAA / Google	Damage Analysis	UNITAR / UNOSAT
Source	USGS / ERDAS APOLLO WMS	Map Production	UNITAR / UNOSAT
Building Data	Swisstopo/RSL-Zurich/UNOSAT	Projection	UTM Zone 18 North - NAD-83

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