

# COMPREHENSIVE BUILDING DAMAGE ASSESSMENT FOR PORT-AU-PRINCE COMMUNE, HAITI

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

This map presents a total building count and damages as assessed from both satellite and aerial survey imagery covering the Commune of Port-au-Prince. 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; Sertit/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

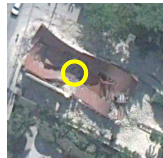


3 February 2010  
(20:30:00 UTC)

Version 1.0

Glide No:  
EQ-2010-000009-HTI

## Damage legend key:



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



**SEVERE DAMAGE :**  
Part of building  
structure collapsed,  
such as part of roof 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 and aerial imagery.

## Building Point Classification

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

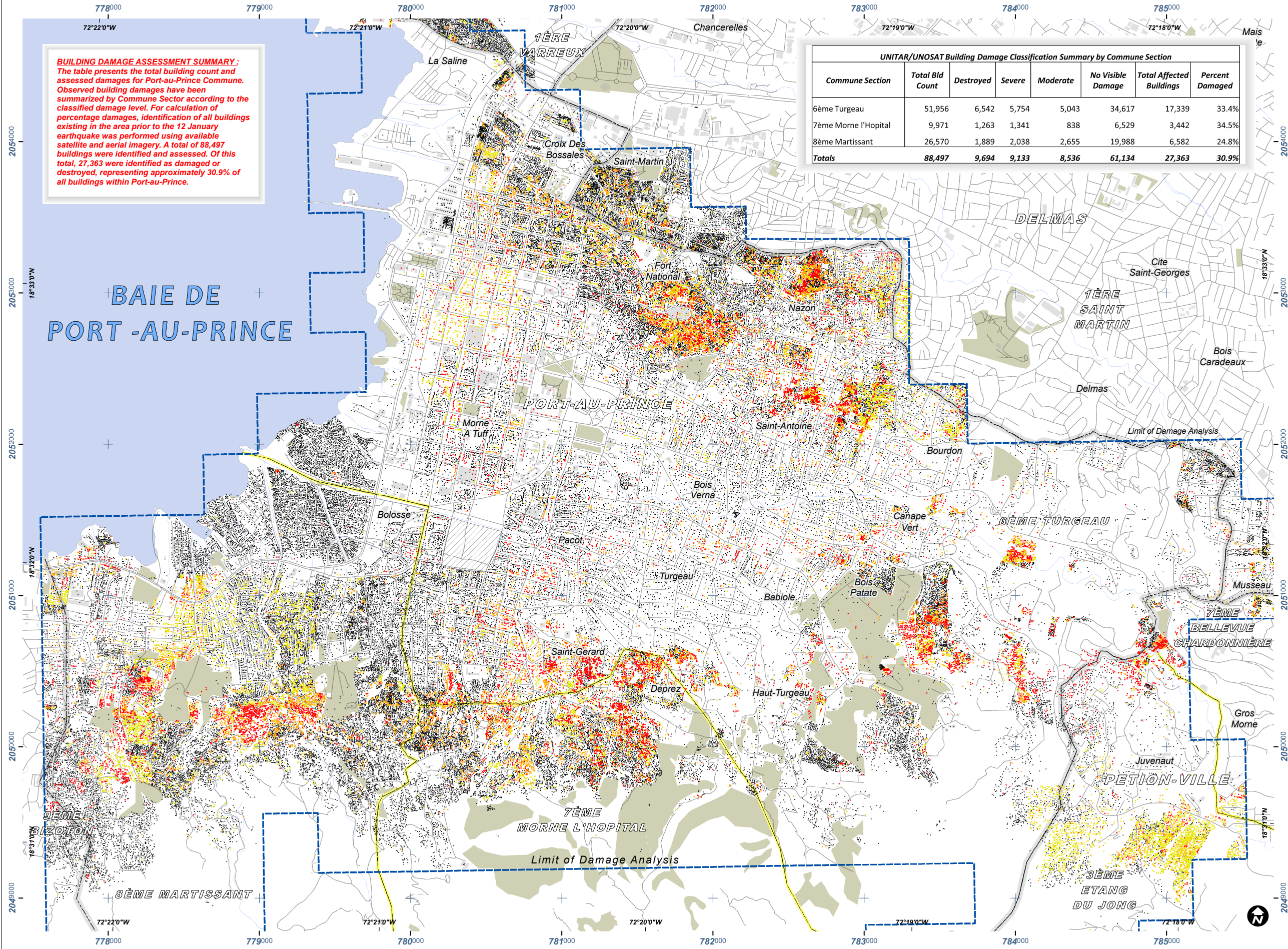
- Main Building Complex
- Park / Forest
- Commune Boundary
- Section Boundary
- Water Body
- Cemetery
- Primary / Secondary Rd
- Analysis Extent

## Map Scale for A3: 1:25,000

UTM grid coordinates given in 1km intervals

	Meters
0	125 250 500 750 1,000
Satellite Data	WorldView-2
Imagery Dates	19 Dec.2009 / 7-15 Jan. 2010
Resolution	50cm
Copyright	DigitalGlobe
Aerial Photos	NOAA / Google
Imagery Date	18 Jan / 21 Jan 2010
Copyright	NOAA / Google
Source	USGS / ERDAS APOLLO WMS
Building Data	Swisstopo/RSL-Zurich/UNOSAT
Road & Urban Data	Open Street Map
Place Names	OCHA, Google Map Maker
Other Data	MINUSTAH, USGS, NGA
Elevation Data	ASTER GDEM
Source	METI & NASA 2009
Damage Analysis	UNITAR / UNOSAT
Map Production	UNITAR / UNOSAT
Projection	UTM Zone 18 North
Datum	NAD-83

The depiction and use of boundaries, geographic names and related data shown here are not warranted to be error-free nor do they imply official endorsement or acceptance by the United Nations. UNOSAT is a program of the United Nations Institute for Training and Research (UNITAR), providing satellite imagery and related geographic information, research and analysis to UN humanitarian & development agencies & their implementing partners.



**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 88,497 buildings were identified and assessed. Of this total, 27,363 were identified as damaged or destroyed, representing approximately 30.9% of all buildings within Port-au-Prince.

UNITAR/UNOSAT Building Damage Classification Summary by Commune Section							
Commune Section	Total Bld Count	Destroyed	Severe	Moderate	No Visible Damage	Total Affected Buildings	Percent Damaged
6ème Turgeau	51,956	6,542	5,754	5,043	34,617	17,339	33.4%
7ème Morne l'Hopital	9,971	1,263	1,341	838	6,529	3,442	34.5%
8ème Martissant	26,570	1,889	2,038	2,655	19,988	6,582	24.8%
<b>Totals</b>	<b>88,497</b>	<b>9,694</b>	<b>9,133</b>	<b>8,536</b>	<b>61,134</b>	<b>27,363</b>	<b>30.9%</b>