



Beit Hanoun: Northeast Gaza Strip Satellite Image Analysis of Vegetation Loss 2001– 2004

During the last three years, the Israeli Defense Forces conducted extensive levelling of citrus orchards in Beit Hanoun in the northeastern Gaza Strip. Their explanation was that the trees were providing cover for Palestinian militants to launch homemade rockets into the Israeli town of Siderot. (See summary of events on page 2).

Citrus trees are a long term agricultural investment and take five years or more to develop into a mature fruit producing tree. The result of the clearing has been a significant drop in the productive capacity of Beit Hanoun contributing to rising unemployment and a further income loss for the northern Gaza Strip economy.

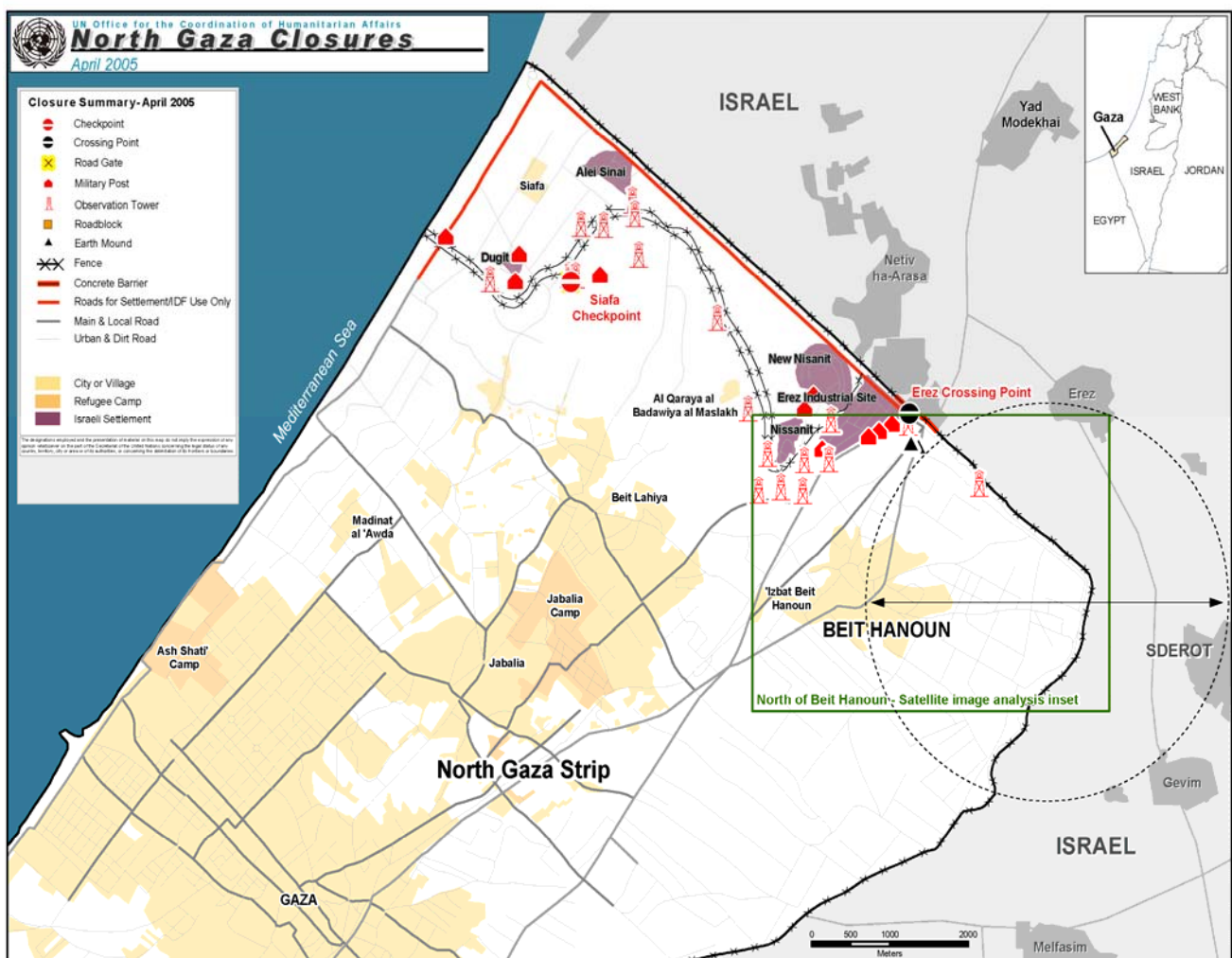
Beit Hanoun

- Located in northeastern Gaza Strip
- Surrounding village land used to cultivate citrus and other tree crops
- Population 32,597¹

Satellite Image Analysis – 2001 and 2004

A comparison was made of two satellite images covering 108.2 hectares in north Beit Hanoun.² The first was taken in October 2001 and the second in October 2004 (see *Satellite* map page 3 - 4). The major findings from this analysis are as below:

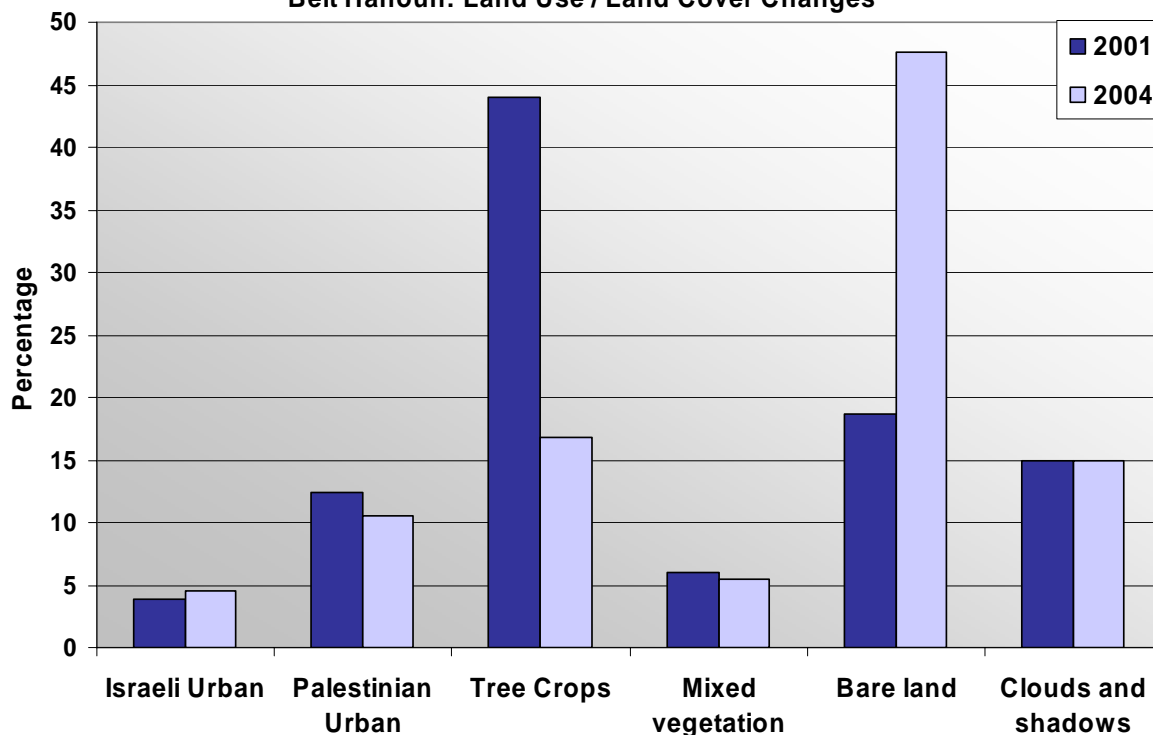
- land covered by trees dropped from 47.5 hectares to 18.2 hectares – a decrease of 62%
- “vegetation” as a percentage of total land cover dropped from 49.9% to 22.4%³
- 47.5% of total land in the area is now “bare” compared to 18.7% in October 2001. The number of uncultivated hectares has risen from 20.3 to 51.5 hectares.



¹ Palestinian locality or village population figures are taken from the Palestinian Central Bureau of Statistics (PCBS) 2005 projected populations based on a 1997 census.

² Due to clouds and shadows in the 2004 image, only visible sections of were analysed and a mask was used to remove these features ; Measurement for land (1 acre = 4 dunums = 0.4 hectare).

³ Total vegetation for this analysis includes: trees and mixed vegetation (cultivated and natural)

Beit Hanoun: Land Use / Land Cover Changes

Israeli urban (roads and built-up areas)

Palestinian urban (roads and built-up areas)

Tree crops (primarily citrus)

Mixed vegetation (cultivated and natural)

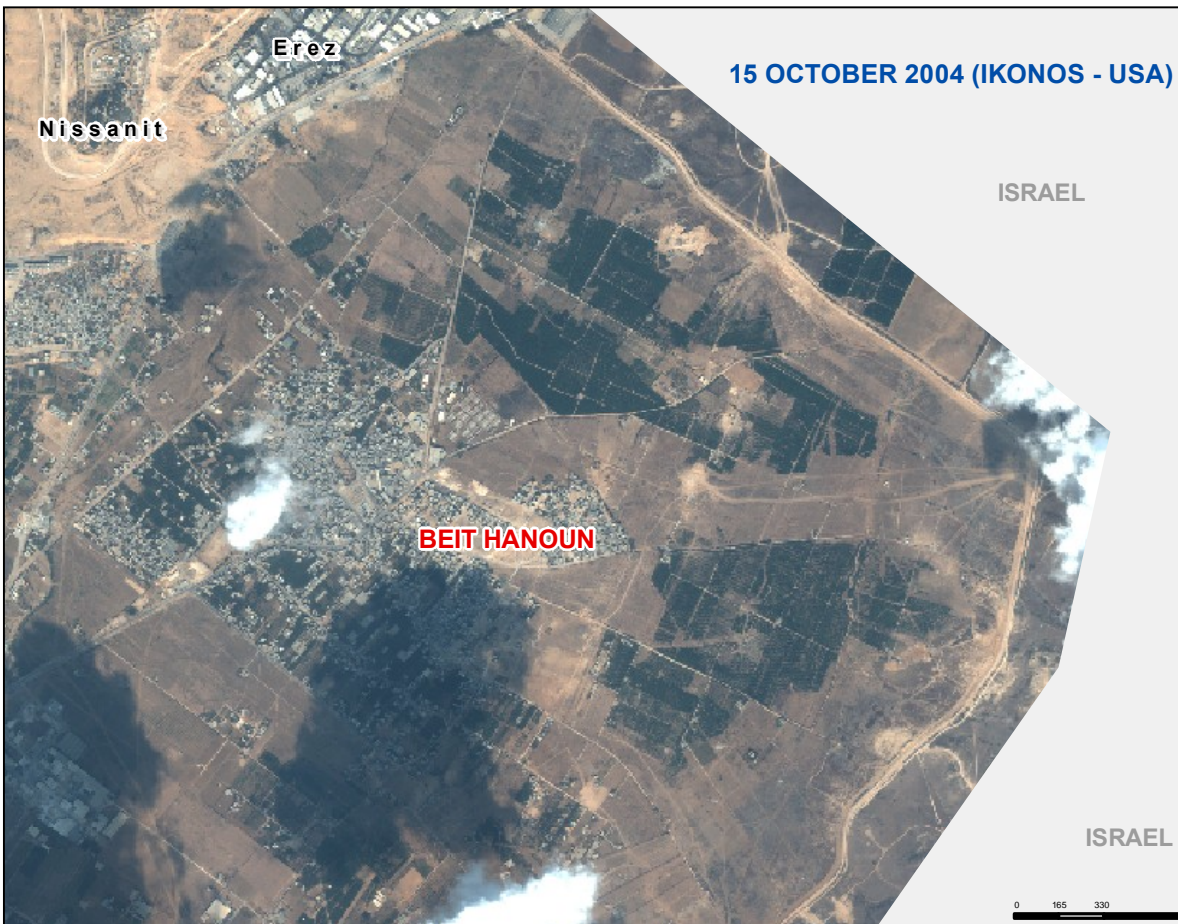
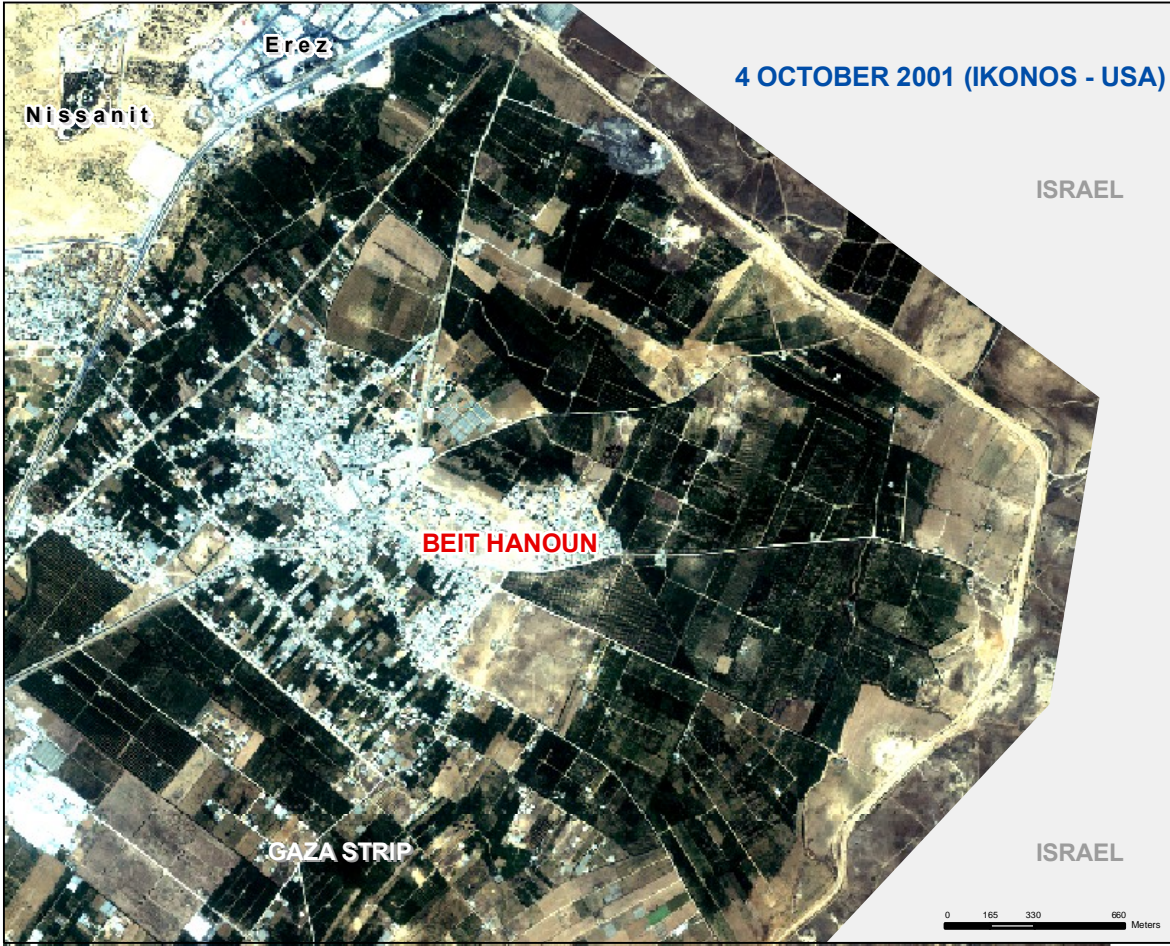
Bare land

Clouds and shadows (a mask was used to remove these features from the analysis).

Beit Hanoun Incursions:

- June – 5 August 2004:** “Operation Defensive Shield” was launched following the deaths of two Israeli children in Sderot from rockets launched by Palestinian militants from the northern Gaza Strip. Nineteen Palestinians were killed and 140 injured while 17 houses were destroyed leaving 145 homeless. Five commercial factories were also destroyed, the government girls secondary school, the municipality building, the Agricultural Union building, and two municipal water pumping stations were damaged.
-
- 15 May – 30 June 2003:** IDF troops deployed around eastern and western Beit Hanoun in response to the firing of rockets by Palestinian militants toward Sderot and the western Negev. Seven Palestinian were killed and more than 100 were injured during the IDF operation while 26 houses were destroyed rendering 37 families (223 individuals) homeless. Eleven factories and workshops located in the Beit Hanoun Industrial Zone were destroyed and 12 more were damaged.
-
- 23 February 2003:** There was an IDF incursion into Beit Hanoun following the injury of an Israeli in Sderot on 20 February. Six Palestinians were killed and four houses were demolished.
-
- 24 January 2003:** An IDF operation sealed off Beit Hanoun; a road bridge was destroyed.
-
- 17 January 2003:** An IDF operation sealed off Beit Hanoun.
-
- 5 March 2002:** The first Qassam rocket was fired at Sderot apartment building, injuring two children (Guardian).
-
- 13 February 2002:** There was an IDF operation in Beit Hanoun and other localities (Guardian).
-
- 15 December 2001:** An IDF incursion results in four Palestinian deaths (Guardian).
-
- 17 April 2001:** There was an attempt to reoccupy Beit Hanoun; however Israeli forces withdrew after two days following US pressure. The operation followed mortar attacks across the Green Line (Guardian).
-

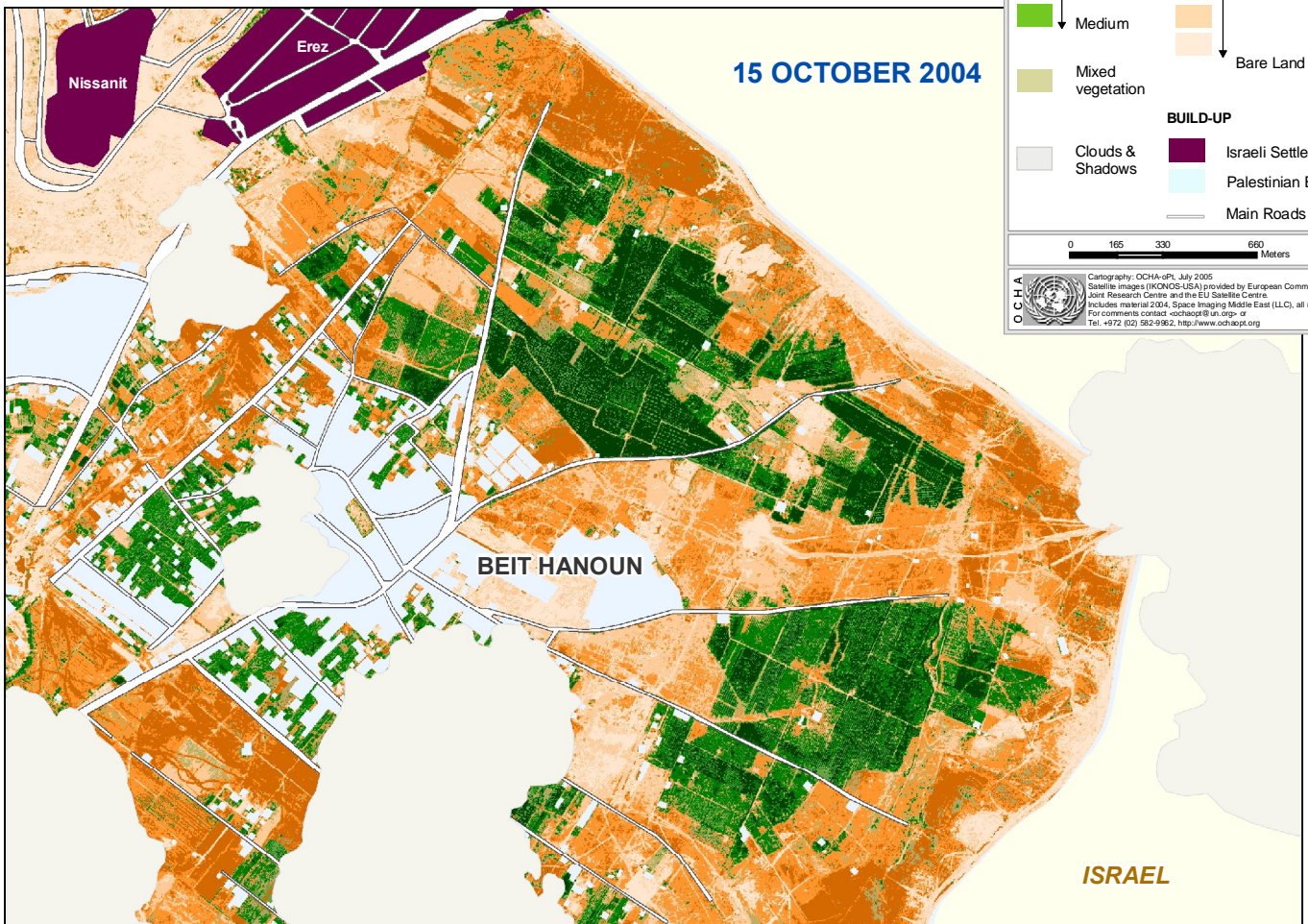
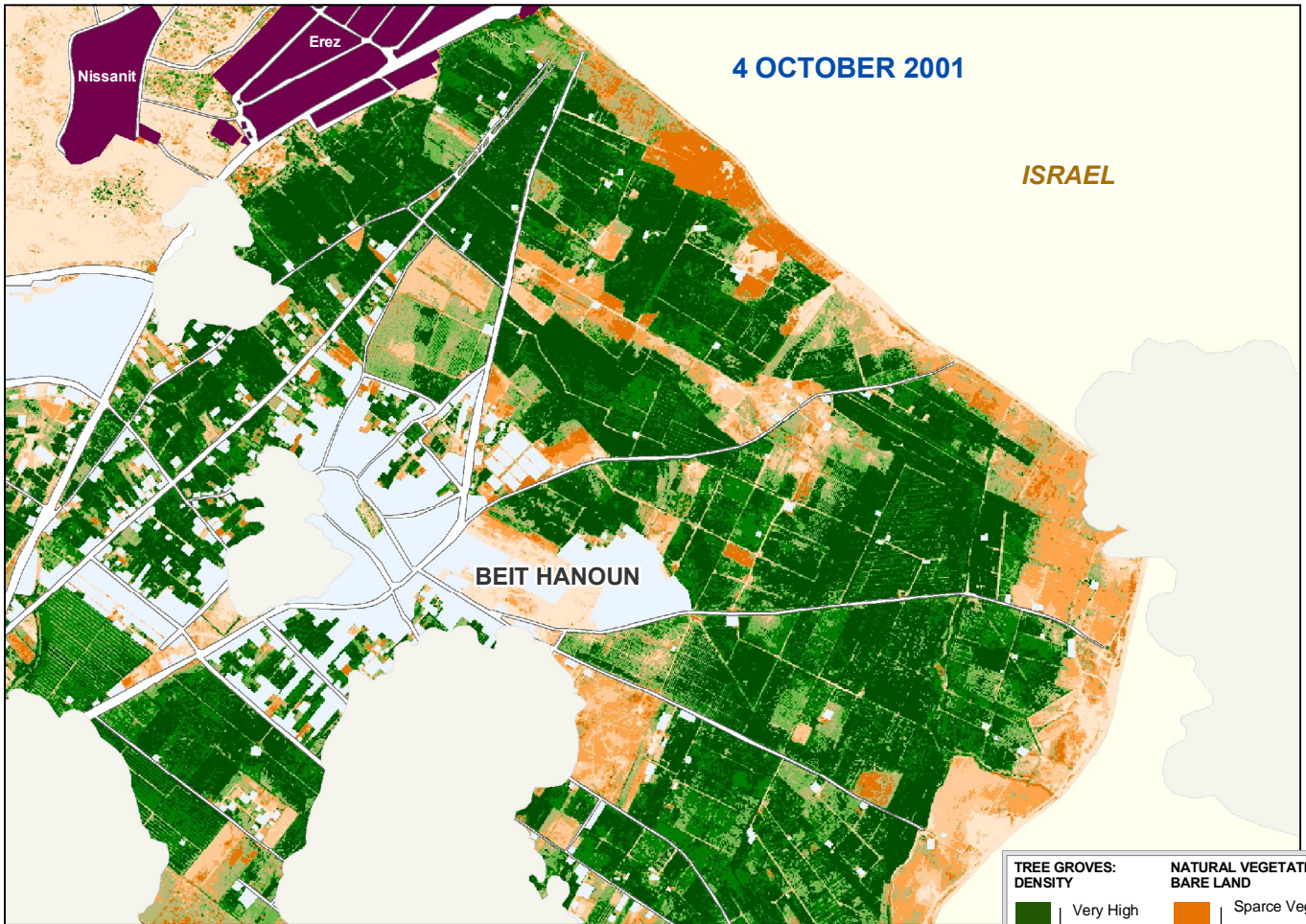
NORTHERN BEIT HANOUN: 2001 - 2004 SATELLITE IMAGES



Cartography: CCHA-oPt, July 2005
Satellite images (IKONOS-USA) provided by European Commission Joint Research Centre
and the EU Satellite Centre.
Includes material © 2004, Space Imaging Middle East (L.L.C.) all rights reserved.
For comments contact <occhaopt@un.org> or Tel. +972 (02) 582-8662. <http://www.occhaopt.org>



NORTHERN BEIT HANOUN: LAND USE / LAND COVER CHANGES 2001- 2004



TREE GROVES: DENSITY		NATURAL VEGETATION / BARE LAND	
	Very High		Sparse Vegetation
	Medium		Bare Land
	Mixed vegetation		
	Clouds & Shadows	BUILD-UP	
			Israeli Settlement
			Palestinian Build-up
			Main Roads

0 165 330 660 Meters

OCHA
 Cartography: OCHA-oPt, July 2005
 Satellite images (IKONOS-USA) provided by European Commission Joint Research Centre and the EU Satellite Centre
 Includes material 2004, Space Imaging Middle East (LLC), all rights reserved.
 For comments contact: ochaopt@un.org
 Tel: +972 (02) 582-9962, http://www.ochaopt.org