

EURA 10th Anniversary Conference  
THE VITAL CITY  
WS13: Urban Form, transport and sustainability

The Outward Expansion of the Built-Up Areas of Madrid  
and Barcelona into their Surrounding Metropolitan  
Regions (1986-2004)

Malcolm C. Burns, Montserrat Moix, BahaaEddine  
AlHaddad, Joaquim Garcia, Pilar García and Josep Roca

Centre de Política de Sòl i Valoracions  
Universitat Politècnica de Catalunya  
Barcelona

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Communication make reference to a methodology developed within the context of a Research Project financed by the Spanish Ministry of Education and Science (2003-2006) (ref. BIA2003-07176), as well as a Project of the INTERREG IIIB Programme of the European Union (EURMET) to delimit a **morphological centre** and a **metropolitan periphery** of large urban areas – and applied to the cases of Barcelona y Madrid.

Territorial units of analysis?

Limitations of administrative units

The interpretation of satellite imagery contributes to the understanding of the spatial morphology of large territories – such interpretation sets out from the classification of the different land cover activities and the interpretation of **artificialised (developed)** land.

**Artificialisation** of land

Land activity categories:

- Residential
- Industrial and commercial
- Airports
- Ports
- Mineral extraction
- Waste disposal
- Urban public space

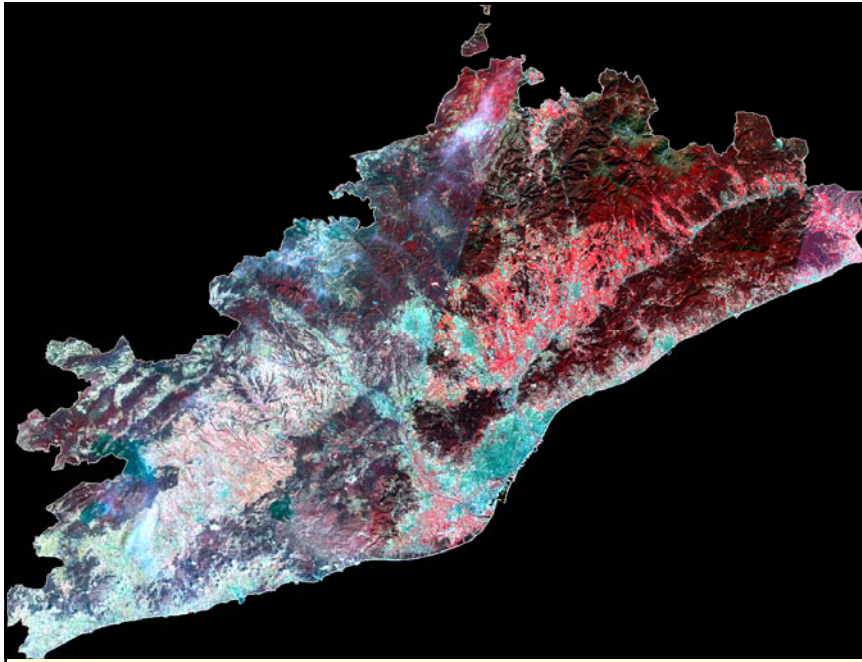
A.1. The physical (**morphological**) delimitation of the study areas (1986)

In the case of Barcelona, the **Metropolitan Region of Barcelona**, a territorial extension of 3,239 Km<sup>2</sup>, grouping 164 municipalities.

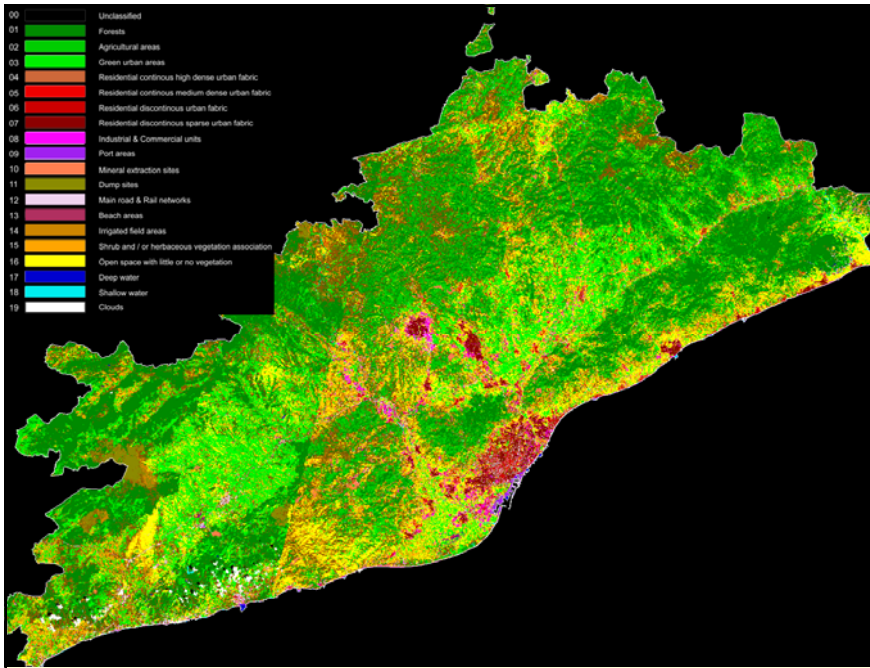
In the case of Madrid, the territorial extension corresponding to the 179 municipalities of the **Community of Madrid** (CCAA de Madrid) with an area of 8,022 Km<sup>2</sup>.

**Región Metropolitano de Barcelona (1986)**

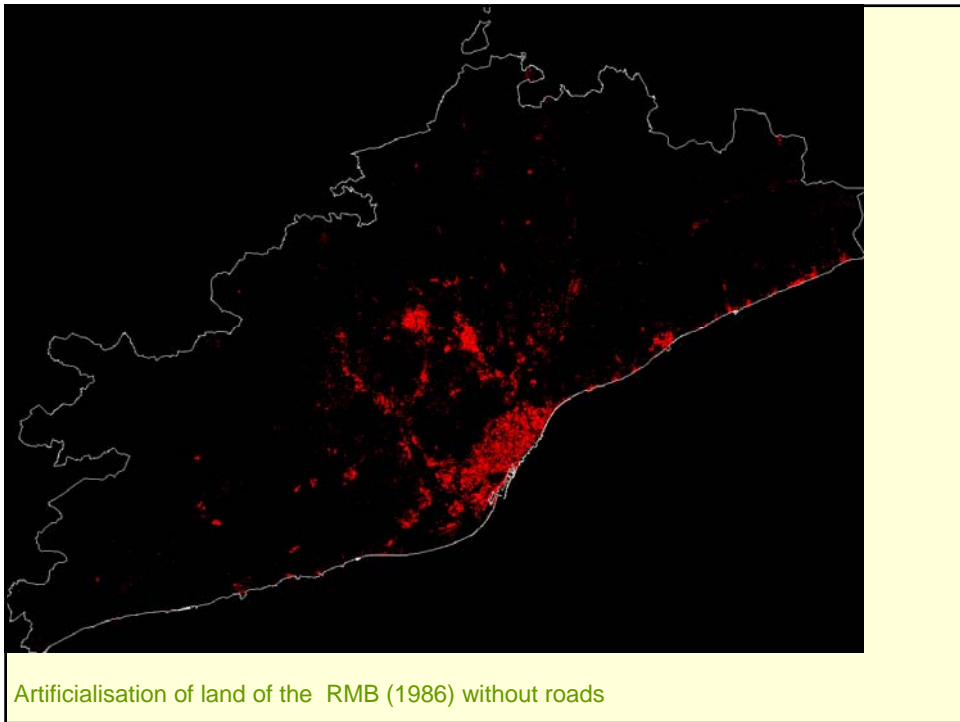
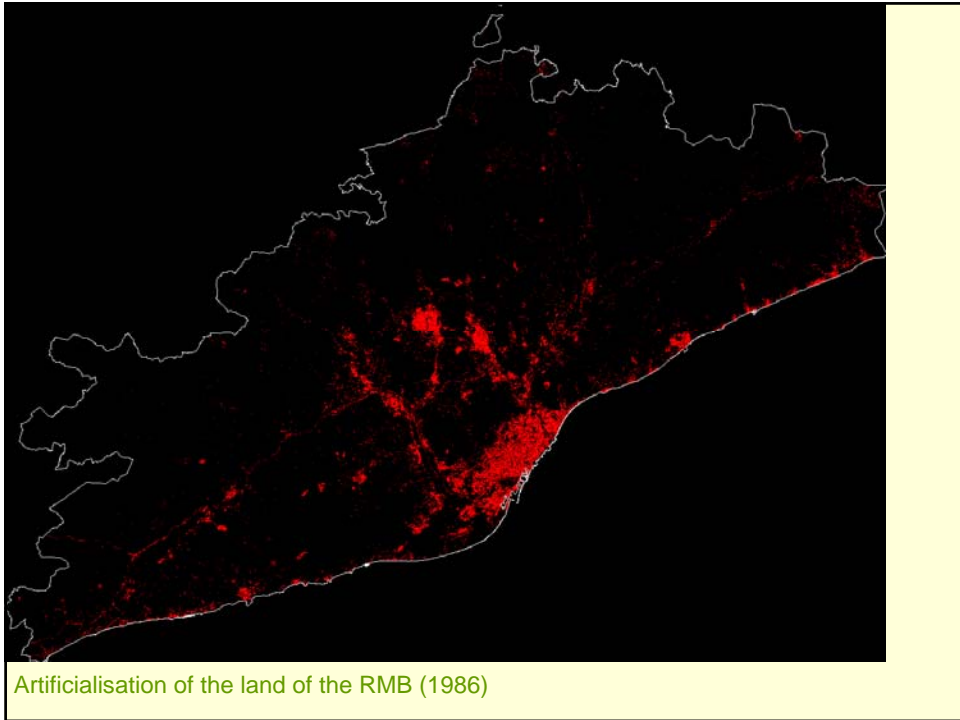
Delimitation of the **morphological centre** and the **metropolitan periphery**.

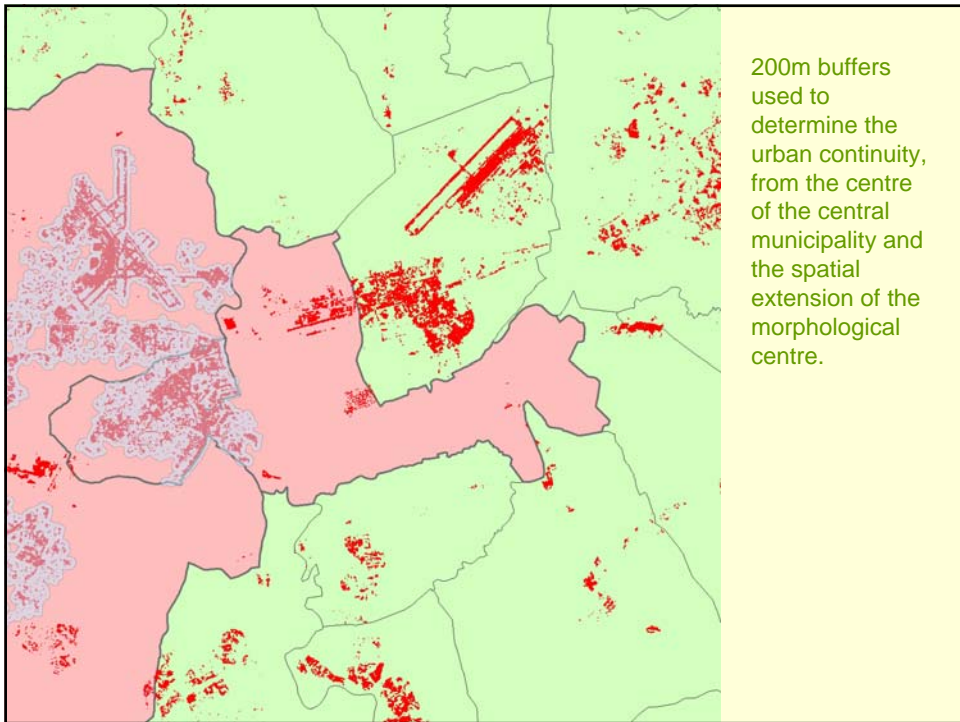
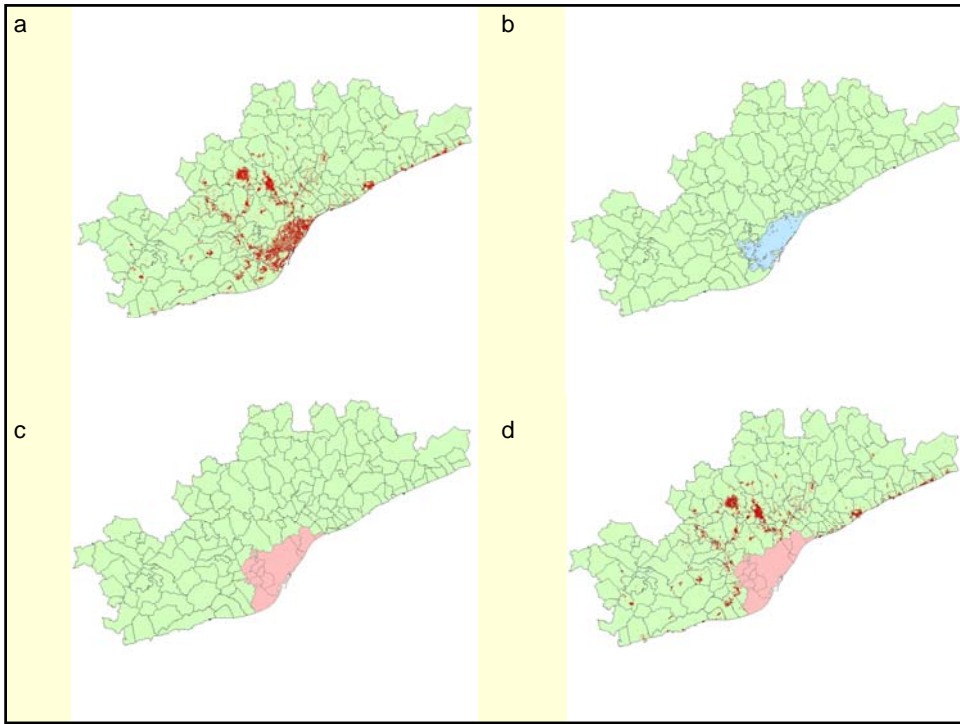


False colour images SPOT3 (1986) (20m resolution)



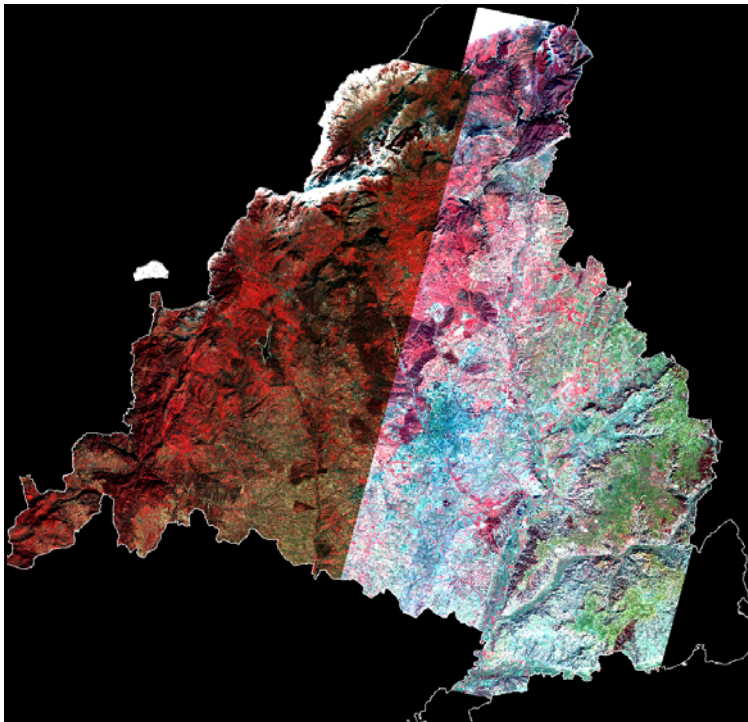
Classification of the land cover activities (1986) with ER Mapper and ENVI



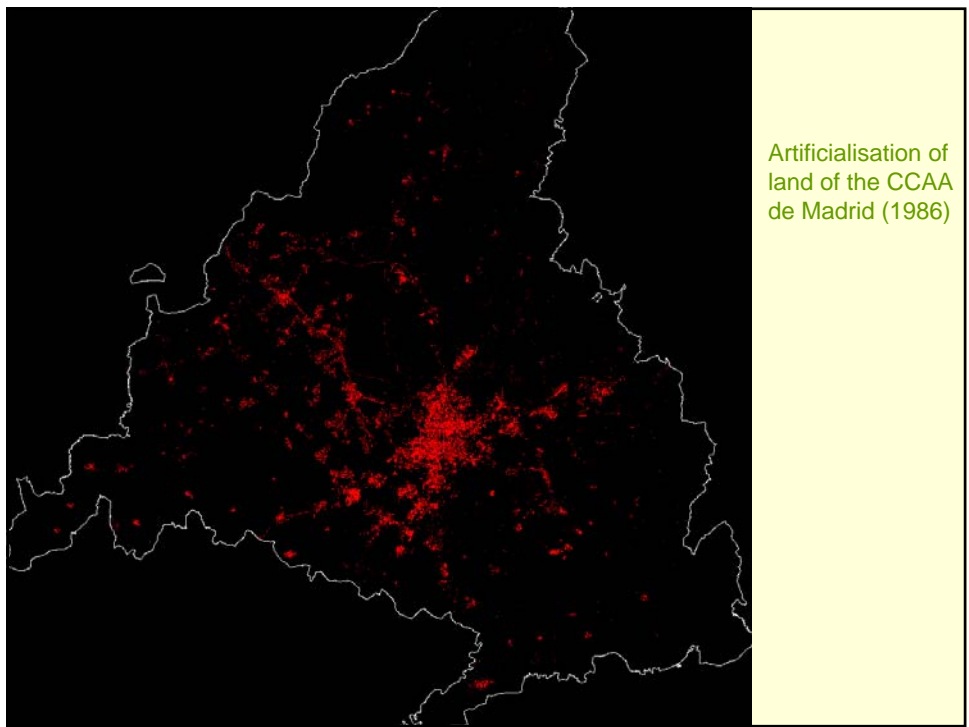
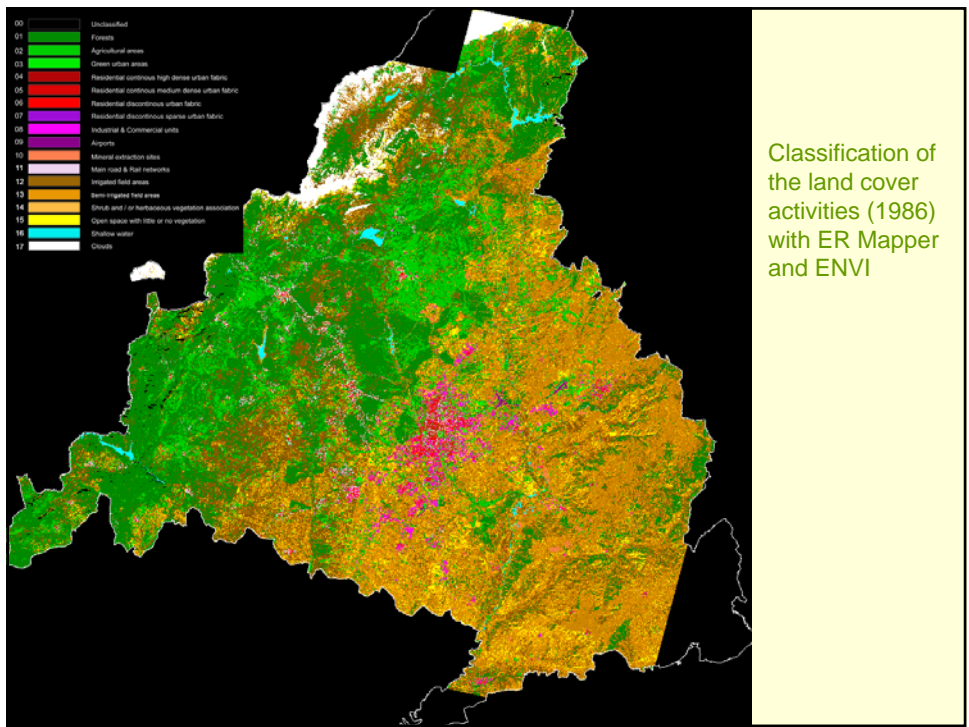


**Comunidad de Madrid (1986)**

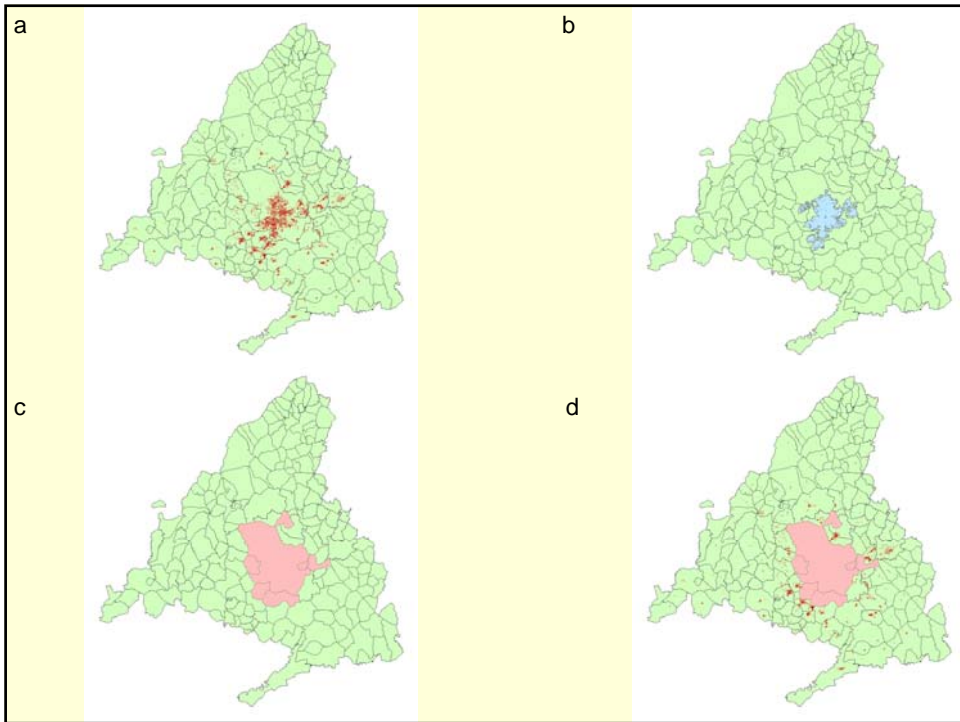
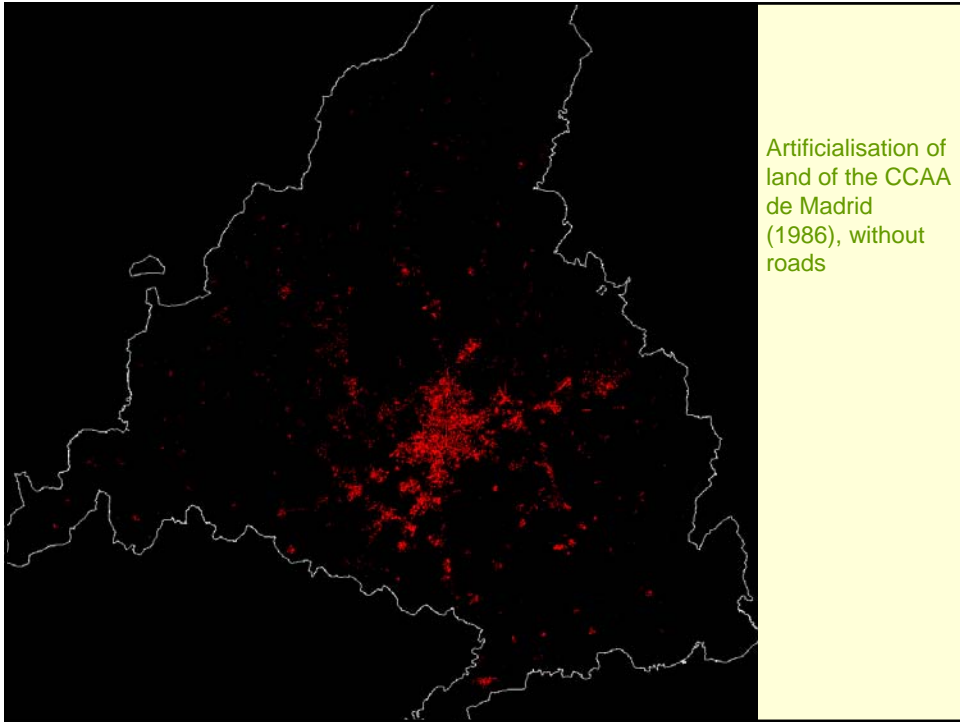
Delimitation of the **morphological centre** and the **metropolitan periphery**.



False  
colour  
images  
SPOT3  
(1986)  
(20m  
resolution)



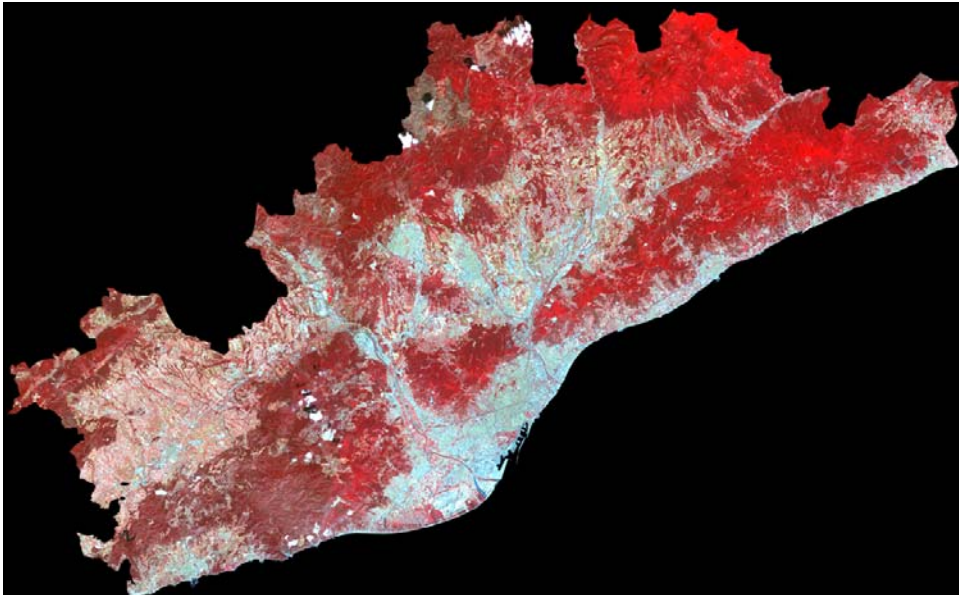




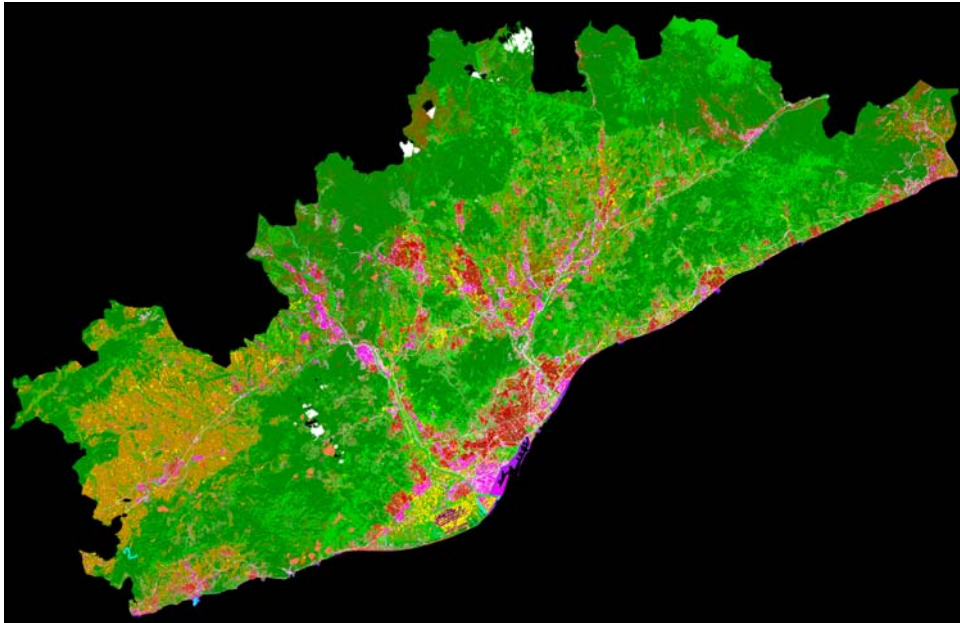
A.2. The physical (**morphological**) delimitations of the areas of study (2004)

**Región Metropolitano de Barcelona (2004)**

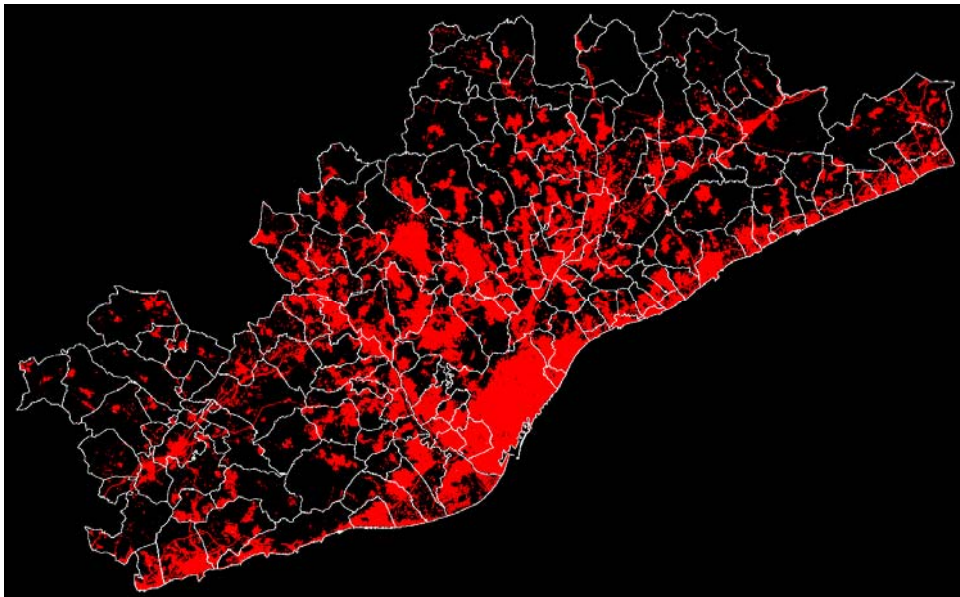
Delimitation of the **morfological centre** and the **metropolitan periphery**.



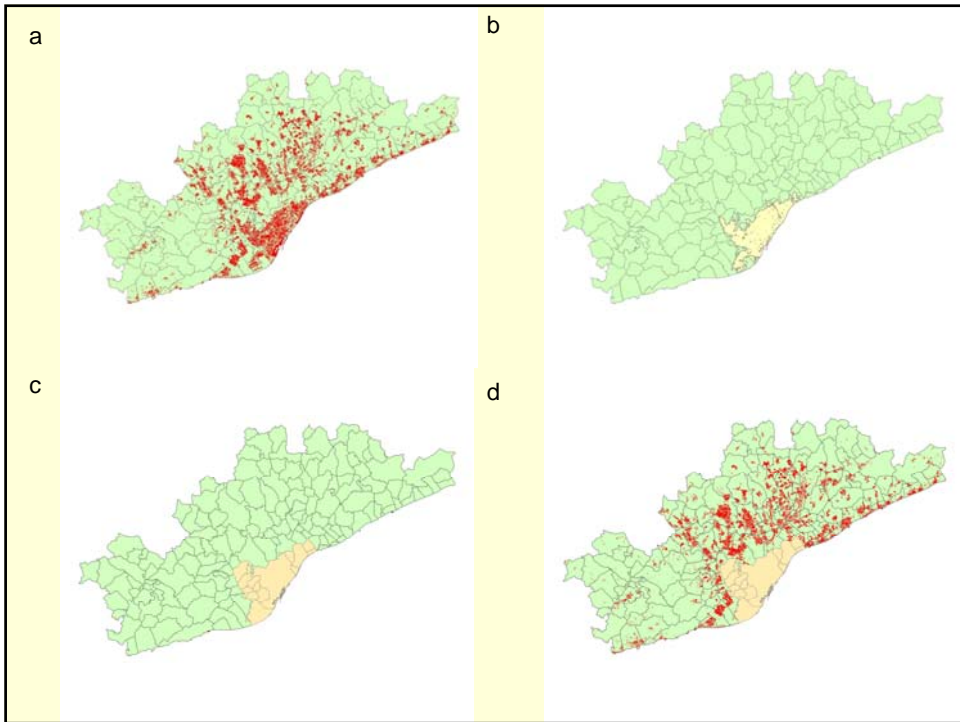
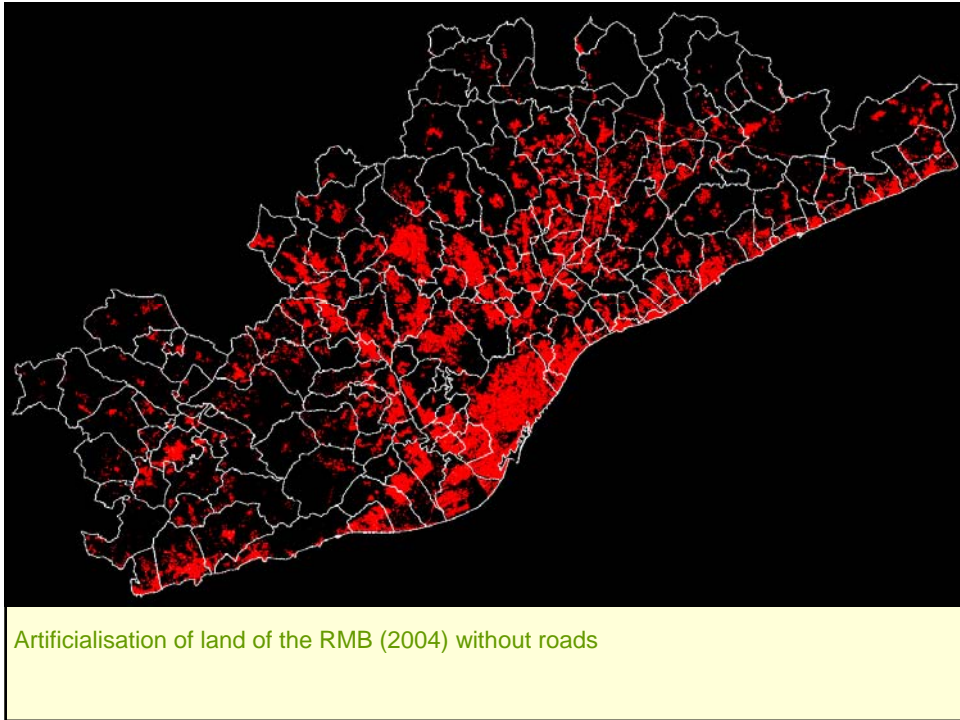
False colour images SPOT5 (2004) (2.5m resolution)

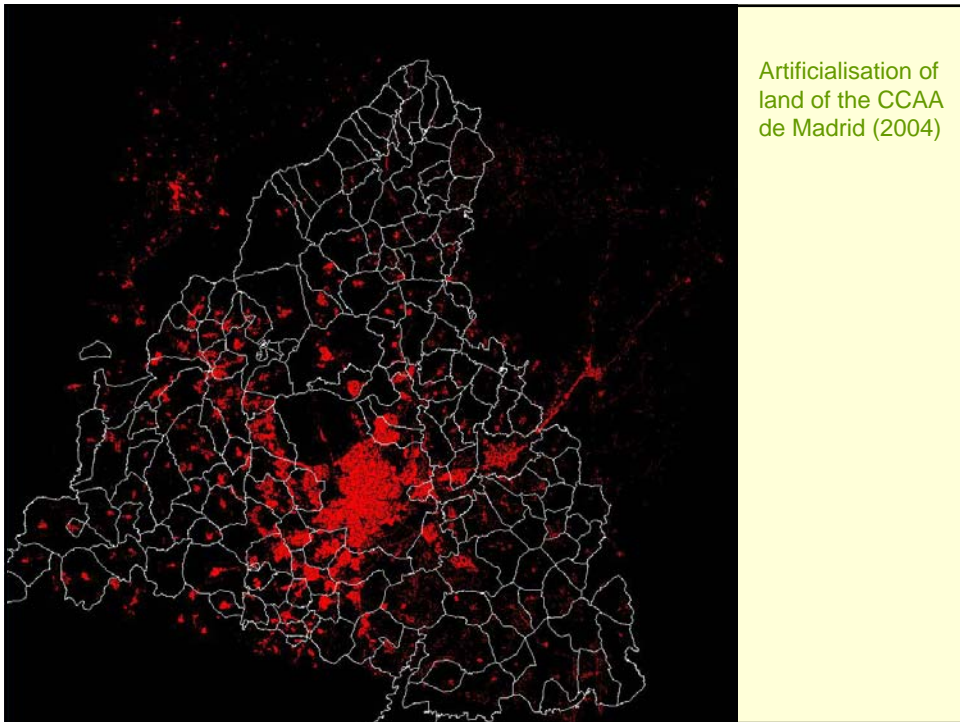
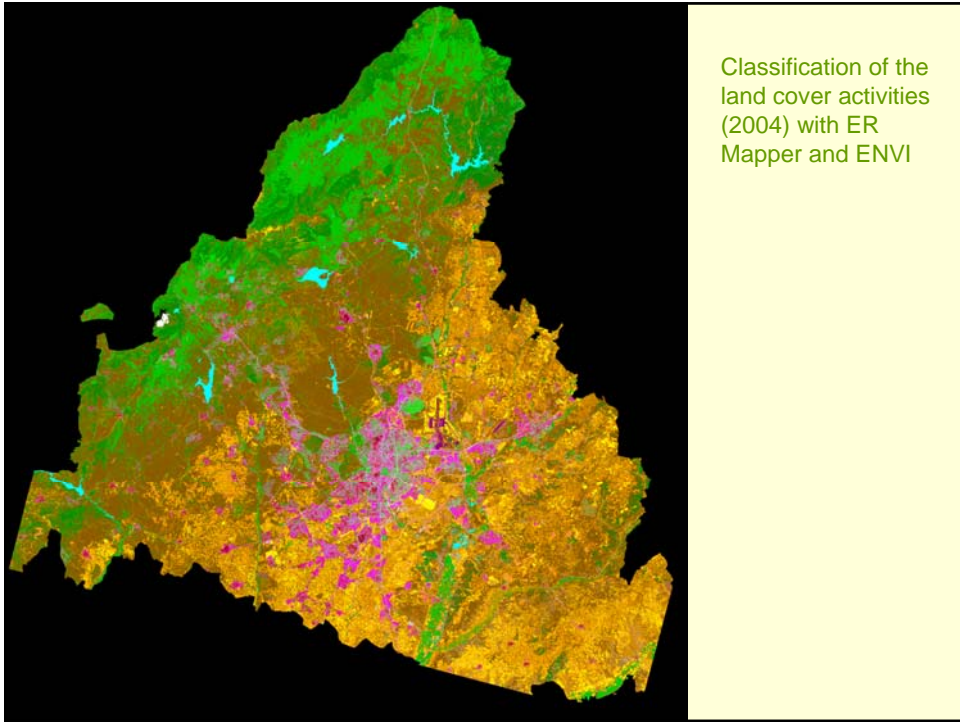


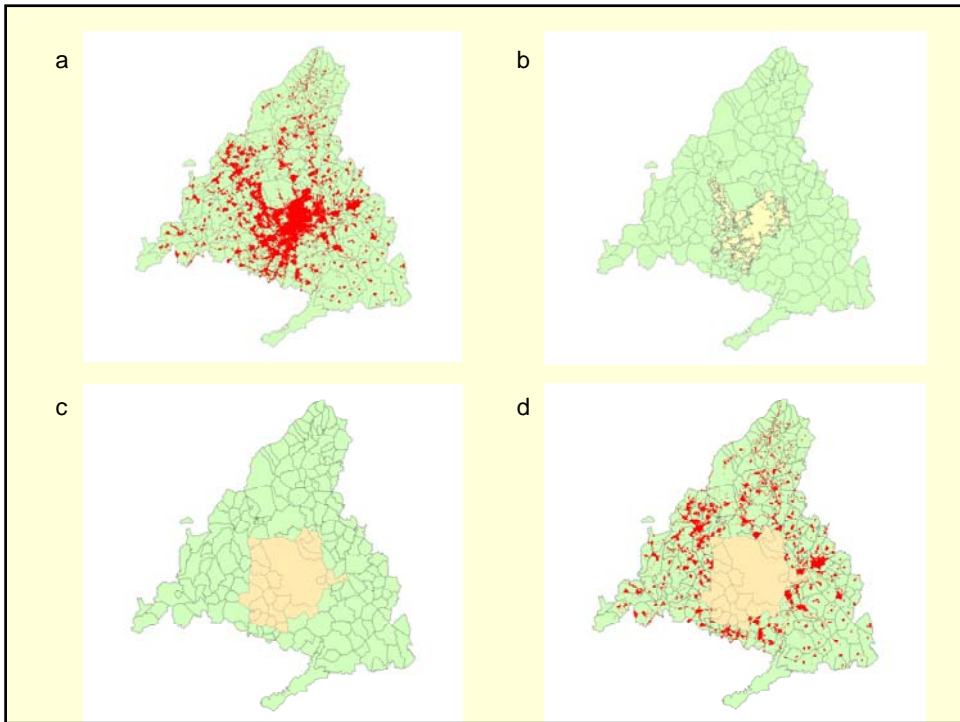
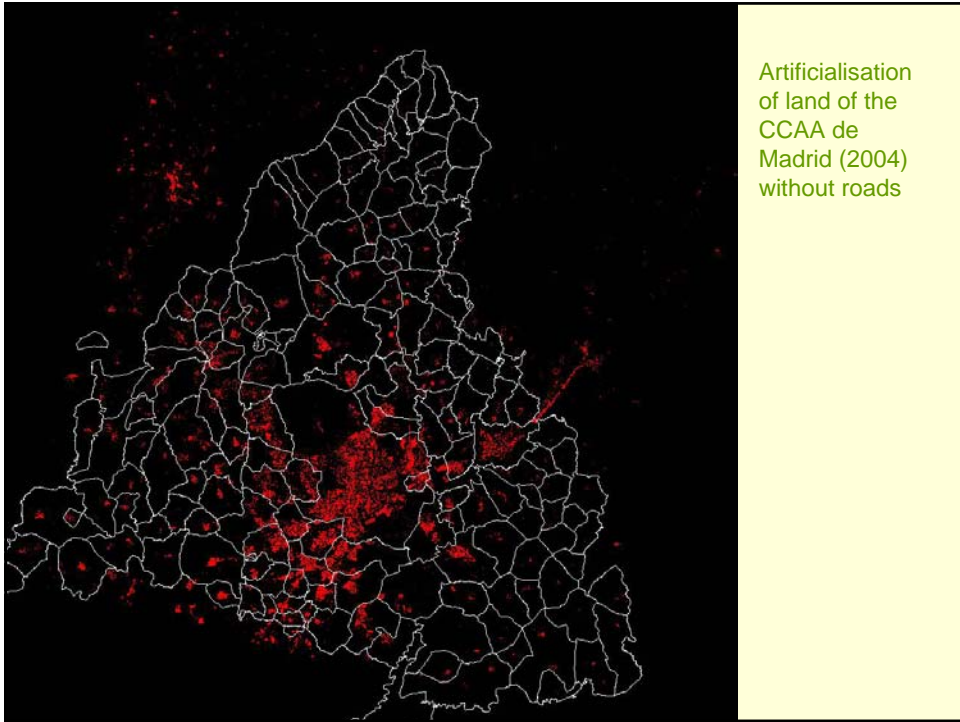
Classification of the land cover activities (2004) (with ER Mapper and ENVI)

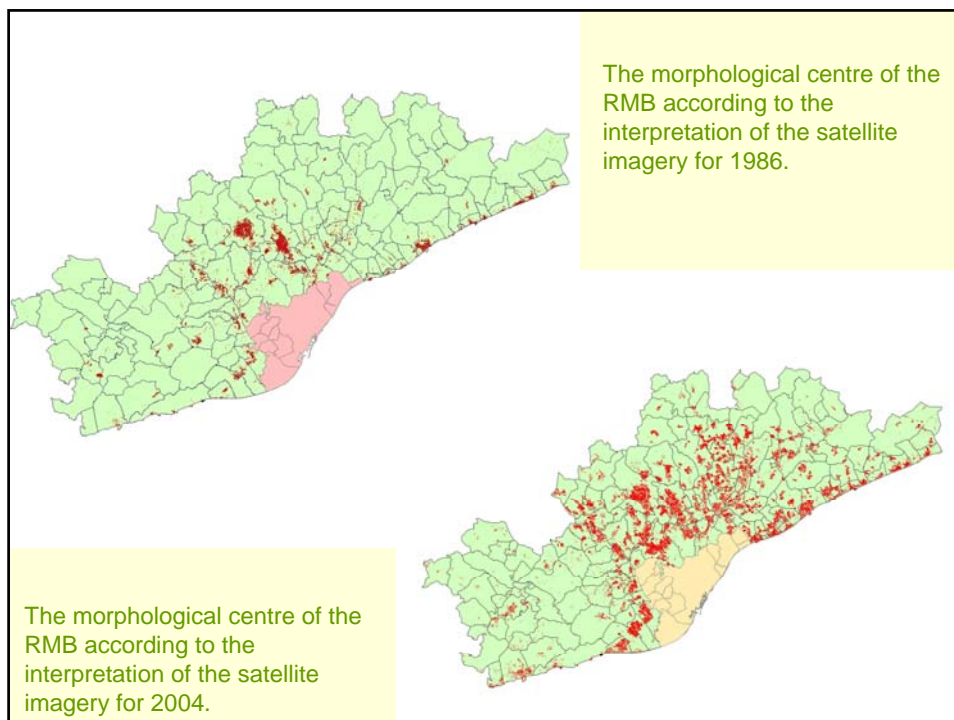


Artificialisation of land of the RMB (2004)







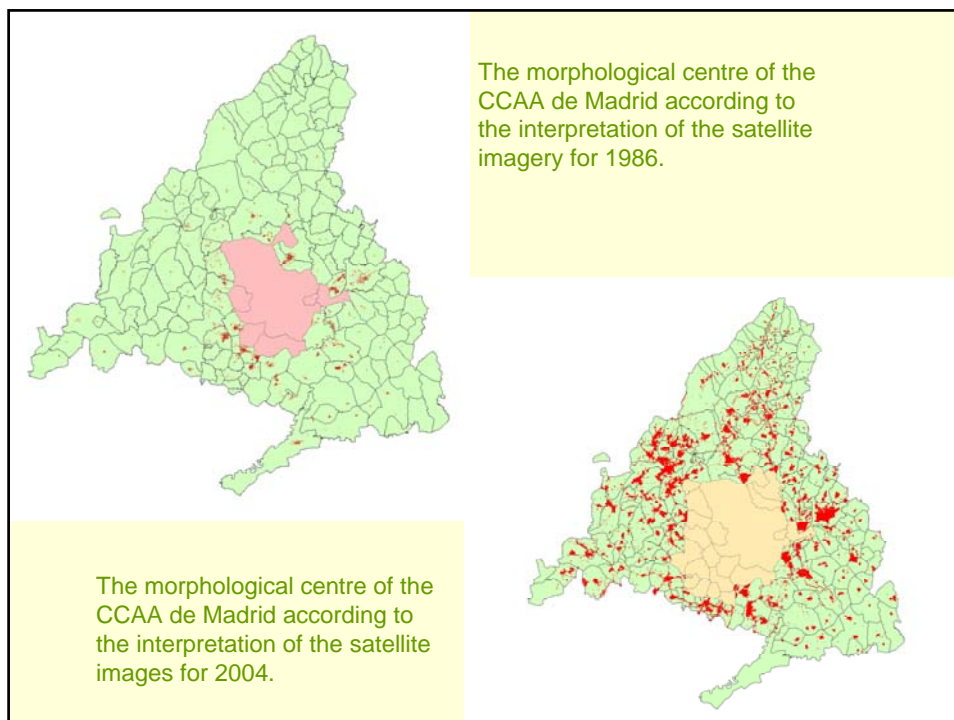


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### **Morphological centres of Barcelona**

**1986: (214.71 Km<sup>2</sup> and 14 municipalities):** Badalona, Barcelona, Cornellà de Llobregat, Esplugues de Llobregat, L'Hospitalet de Llobregat, Montgat, El Prat de Llobregat, Sant Adrià de Besòs, Sant Feliu de Llobregat, Sant Joan Despí, Sant Just Desvern and Santa Coloma de Gramenet.

**2004: (238.50 Km<sup>2</sup> and 16 municipalities):** Badalona, Barcelona, Cornellà de Llobregat, Esplugues de Llobregat, L'Hospitalet de Llobregat, **Molins de Rei**, Montgat, El Prat de Llobregat, Sant Adrià de Besòs, Sant Feliu de Llobregat, Sant Joan Despí, Sant Just Desvern, Santa Coloma de Gramenet and Tiana.



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### **Morphological centres of Madrid**

**1986:** (822.1 Km<sup>2</sup> and 6 municipalities) Coslada, Getafe, Leganés, Madrid, Pozuelo de Alarcón and San Fernando de Henares.

**2004:** (1,374.35 Km<sup>2</sup> and 20 municipalities)  
**Alcobendas, Alcorcón, Arroyomolinos, Boadilla del Monte, Coslada, Fuenlabrada, Getafe, Humanes de Madrid, Leganés, Madrid, Majadahonda, Moraleja de Enmedio, Móstoles, Parla, Pozuelo de Alarcón, Las Rozas de Madrid, San Fernando de Henares, San Sebastián de los Reyes, Torreldones and Villaviciosa de Odón.**



