

# Sistemas de Información Geográfica (SIG)

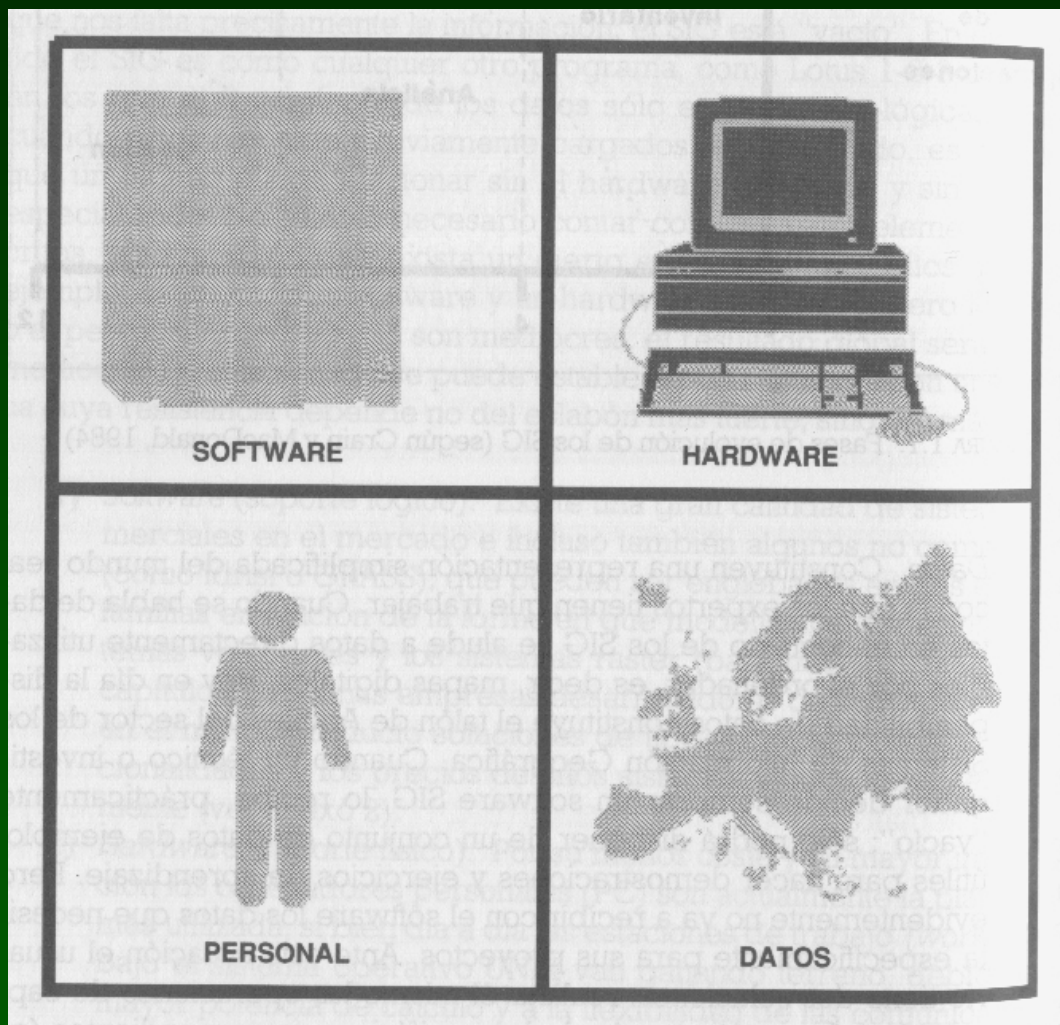
Técnicas básicas para estudios de biodiversidad

21, 22, 23 Abril 2009

Pablo Sastre Olmos



# Sistemas de Información Geográfica



Los criterios utilizados para cartografiar el paisaje deben ser relevantes para los organismos o procesos de interés.

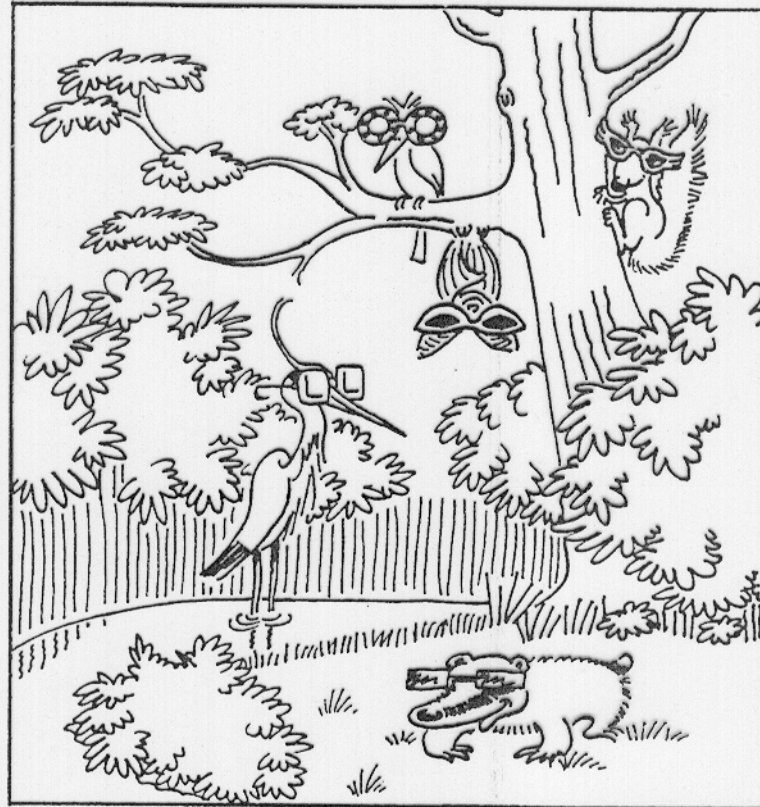


Figure 9. Species spectacles: species each have their own interpretation of a landscape (source: RIZA, Arnhem).

# Análisis del paisaje a distintas escalas de resolución

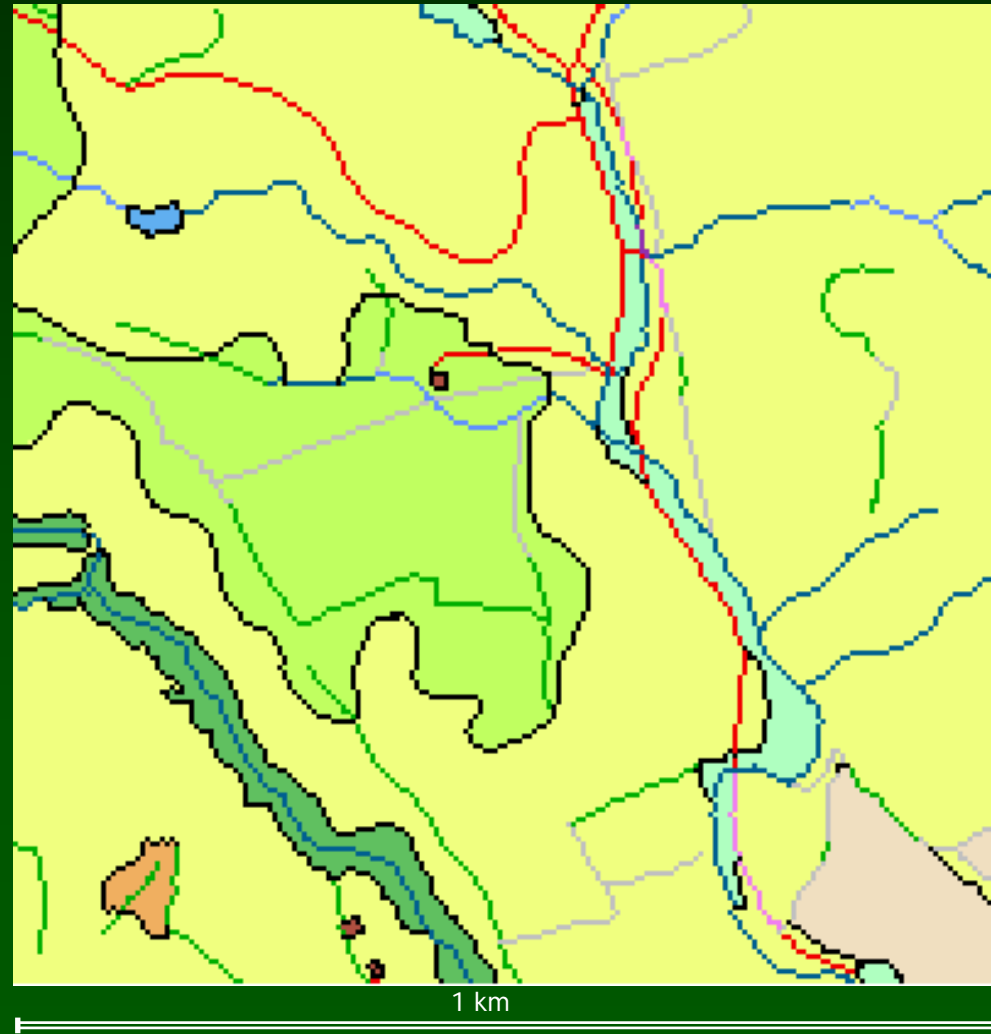
Mapa  
1:50.000



1:18.000



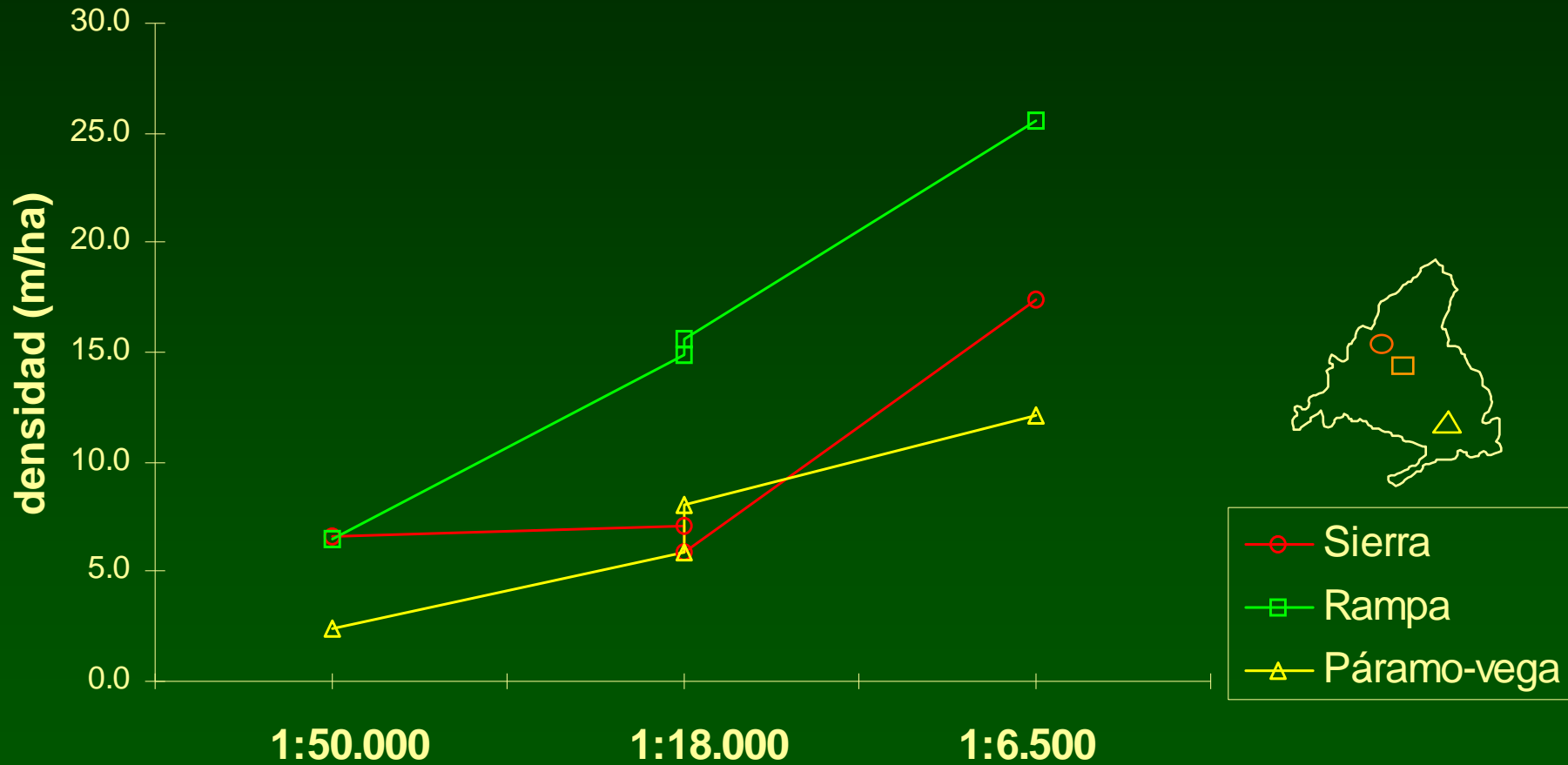
1:6.500



1 x 1 Km

UTM 30T VK3796

# Densidad de Ríos (m/ha) a distintas escalas





# Análisis del paisaje a distintas escalas de extensión (tamaño de las muestras)

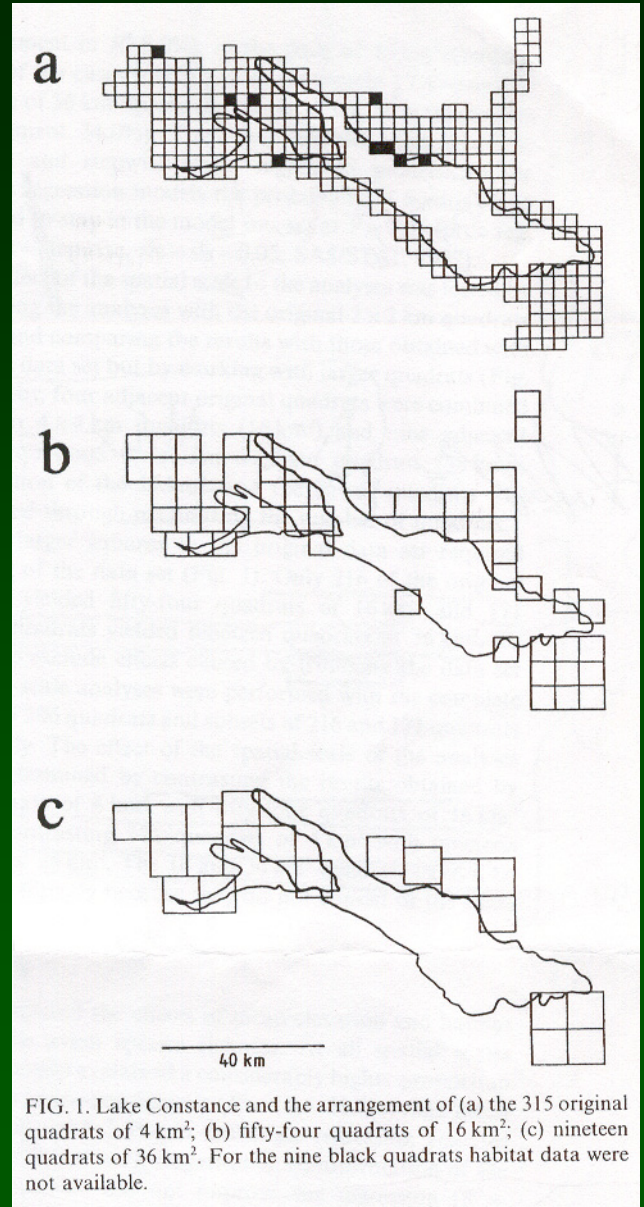
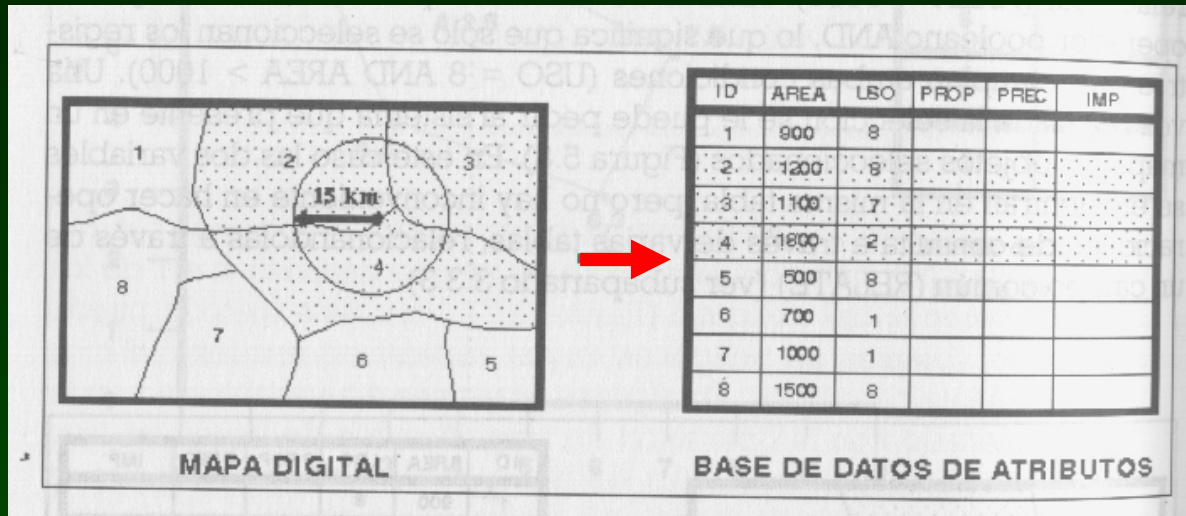
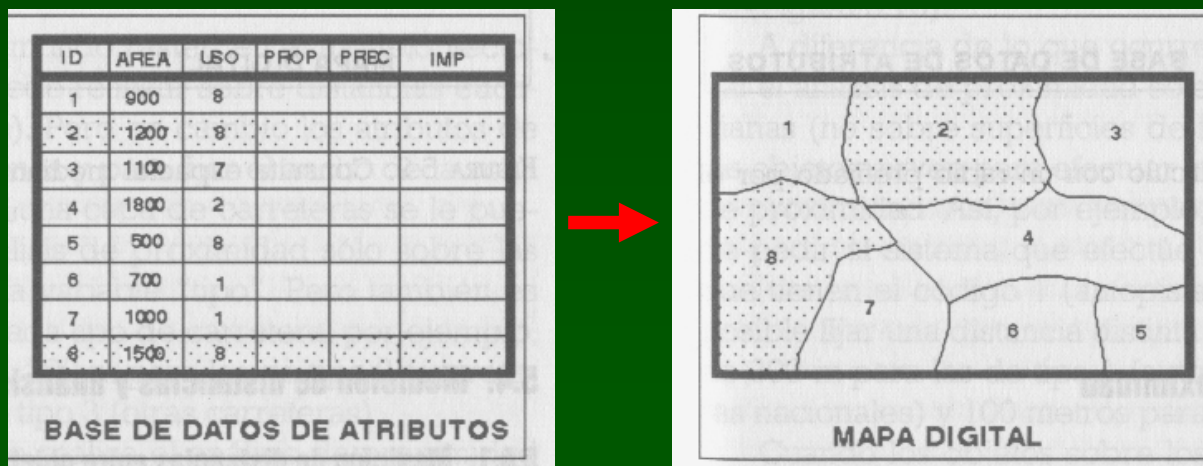


FIG. 1. Lake Constance and the arrangement of (a) the 315 original quadrats of 4 km<sup>2</sup>; (b) fifty-four quadrats of 16 km<sup>2</sup>; (c) nineteen quadrats of 36 km<sup>2</sup>. For the nine black quadrats habitat data were not available.

# Consulta espacial: muestra los atributos



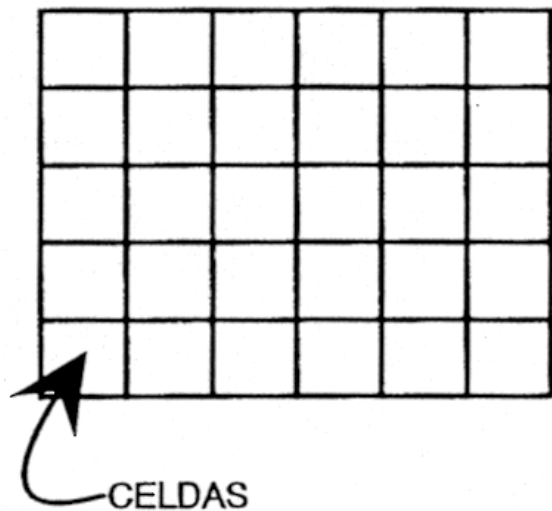
# Consulta por atributos: muestra la localización



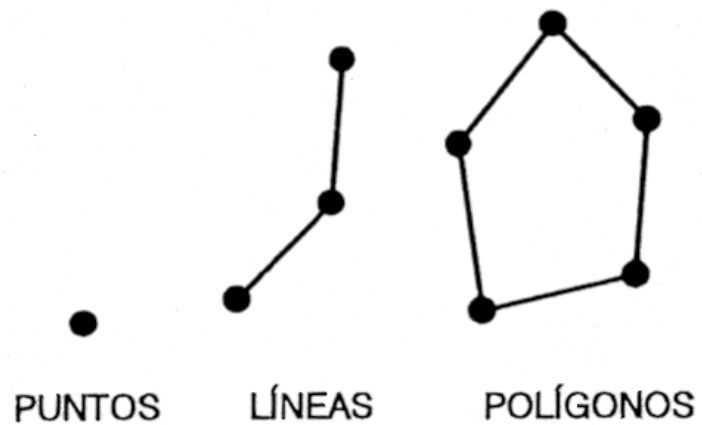




## MODELO RASTER



## MODELO VECTORIAL



# Almacenaje de atributos

## Modelo ráster (código digital)

1	1	1	1	2	2	2	2	2	2
1	1	1	1	1	2	2	2	2	2
1	1	1	1	4	4	2	2	2	2
1	1	1	1	1	4	2	2	2	4
1	1	3	3	4	4	4	4	4	4
1	3	3	3	3	3	4	4	4	4
3	3	3	3	3	3	3	4	4	4

CAPA DE DATOS ESPACIALES

### TIPOS DE OCUPACIÓN

- 1 BOSQUE
- 2 URBANO
- 3 LAGO
- 4 AGRÍCOLA

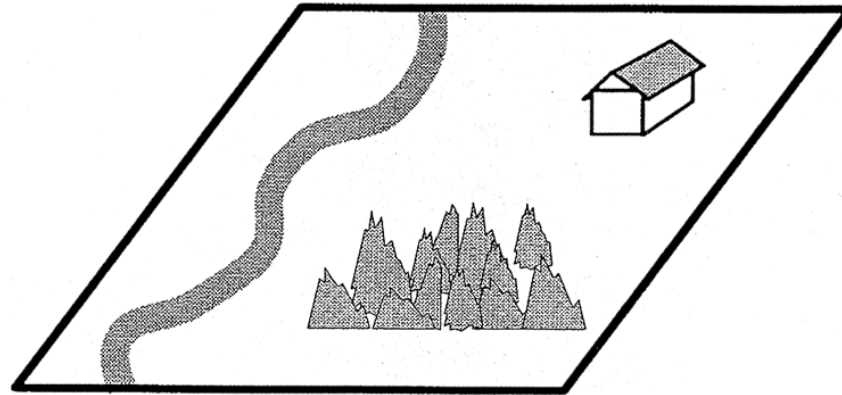
# Almacenaje de atributos

Modelo vectorial (tabla asociada a los objetos)

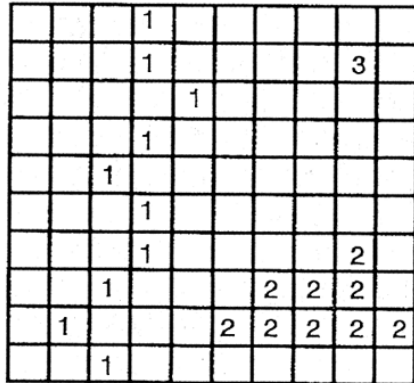


ID	AREA	PERIM	CODIGO	ED	ESPE	USO
1	6936582	35745	PL{F40}	3	25/21	1
2	4722081	19353	QI/PH{LZ40}	7	105/45	1
3	3185624	13558	P/M/PL{-10}	8	202	2
4	2251264	6791	PT	0		3
5	2015602	15211	PL/QI{LZ80}	7	105/45	1
6	193054	2935	PO	6	58	1
7	18048903	46252	PH{F60}	1	24	1
8	203704	3045	P/M/QI{-5}	0		3
9	568736	3343	PL{F80}	3	25/21	1
10	301533	2842	PL{F40}	3	25/21	1
11	106640	2663	PL{F40}	3	25/21	1
12	139845	2952	P/QI{-5}	0		3
13	252291	4953	P/M/QI{-5}	0		3
14	2025948	16459	QI{LZ30}	5	45	1
15	136587	2264	PL{LZ30}	3	25/21	1
16	43337	910	AL/QI{-5}	0		5
17	283797	4180	C	0		5
18	61639	1148	P	0		3
19	255025	2751	CS{F30}	5	45	1
20	854354	8448	PL{F40}	6	25/21	1

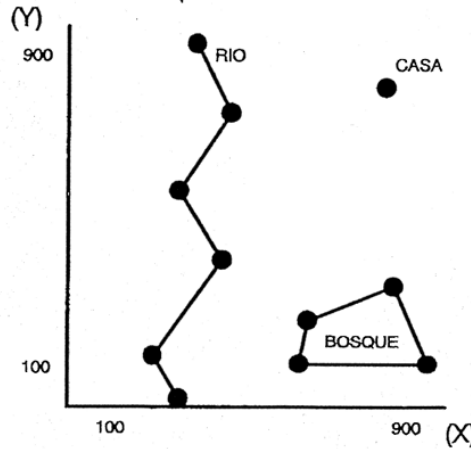
MUNDO REAL



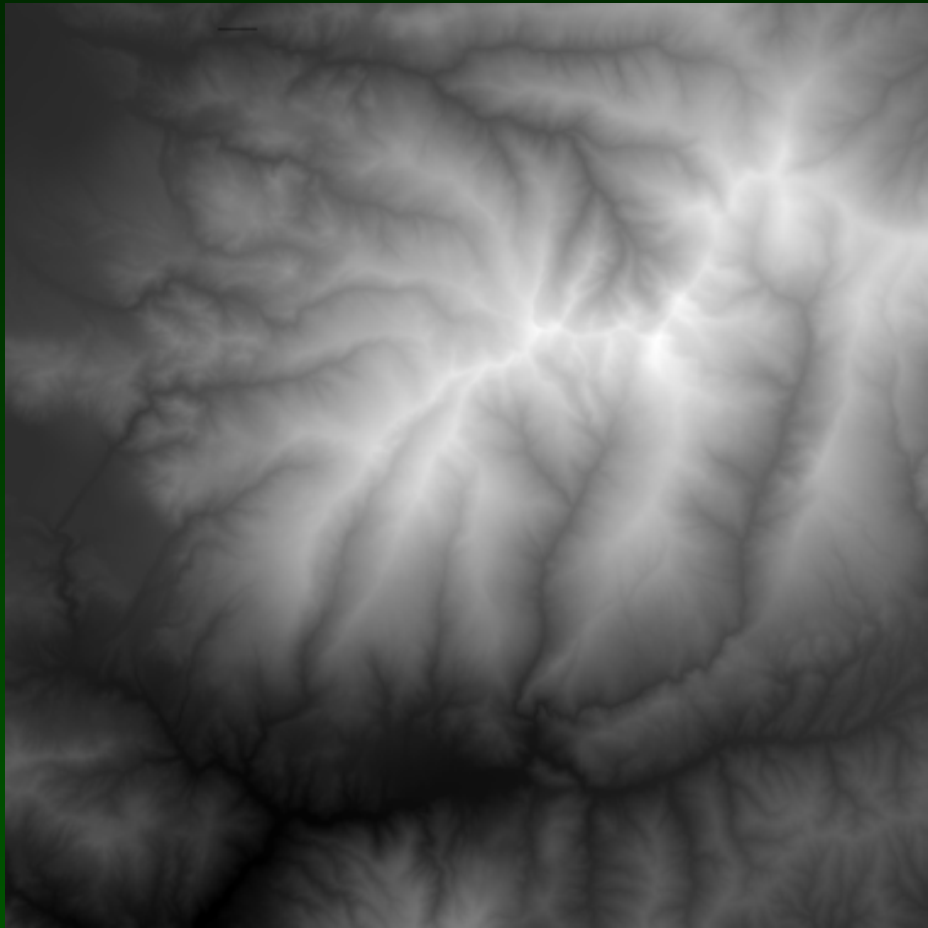
1 RIO  
2 BOSQUE  
3 CASA



REPRESENTACIÓN  
RASTER

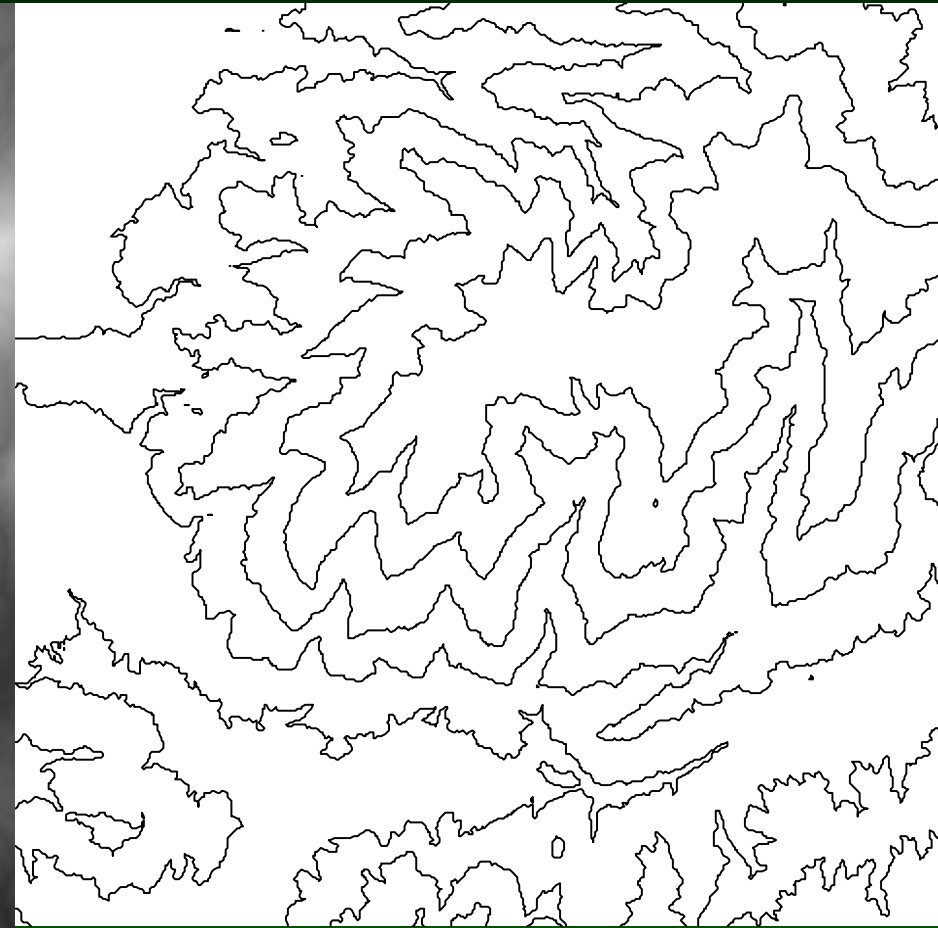


REPRESENTACIÓN  
VECTORIAL



Ráster

Modelo Digital del Terreno (MDT)



Vectorial

Curvas de nivel (dist. cotas=500m)



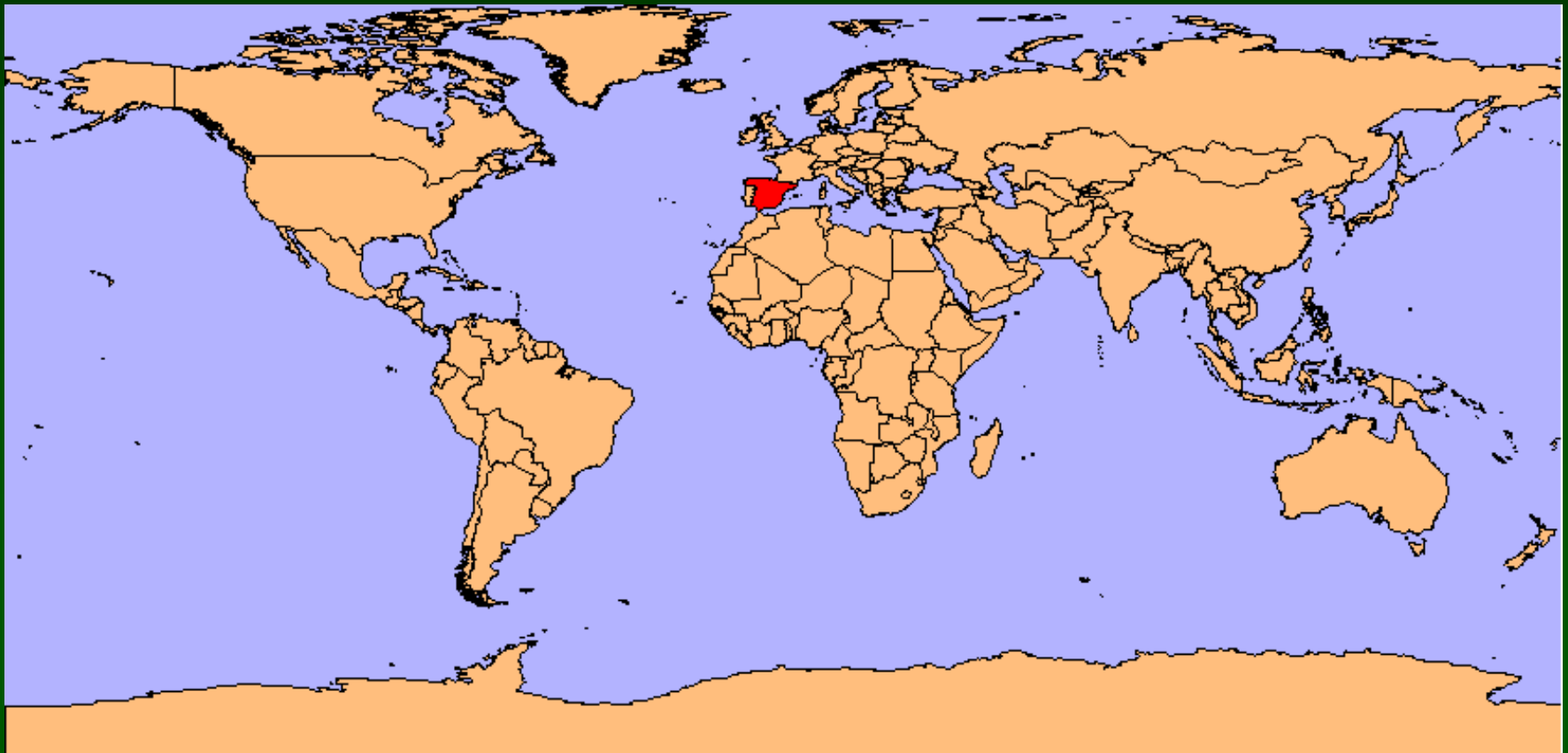


# Georreferenciación

# Referencias geográficas

Collection Database (Darwin Core): Country = Spain

Digital map “Countries-World” (GIS layer with database): Country = Spain

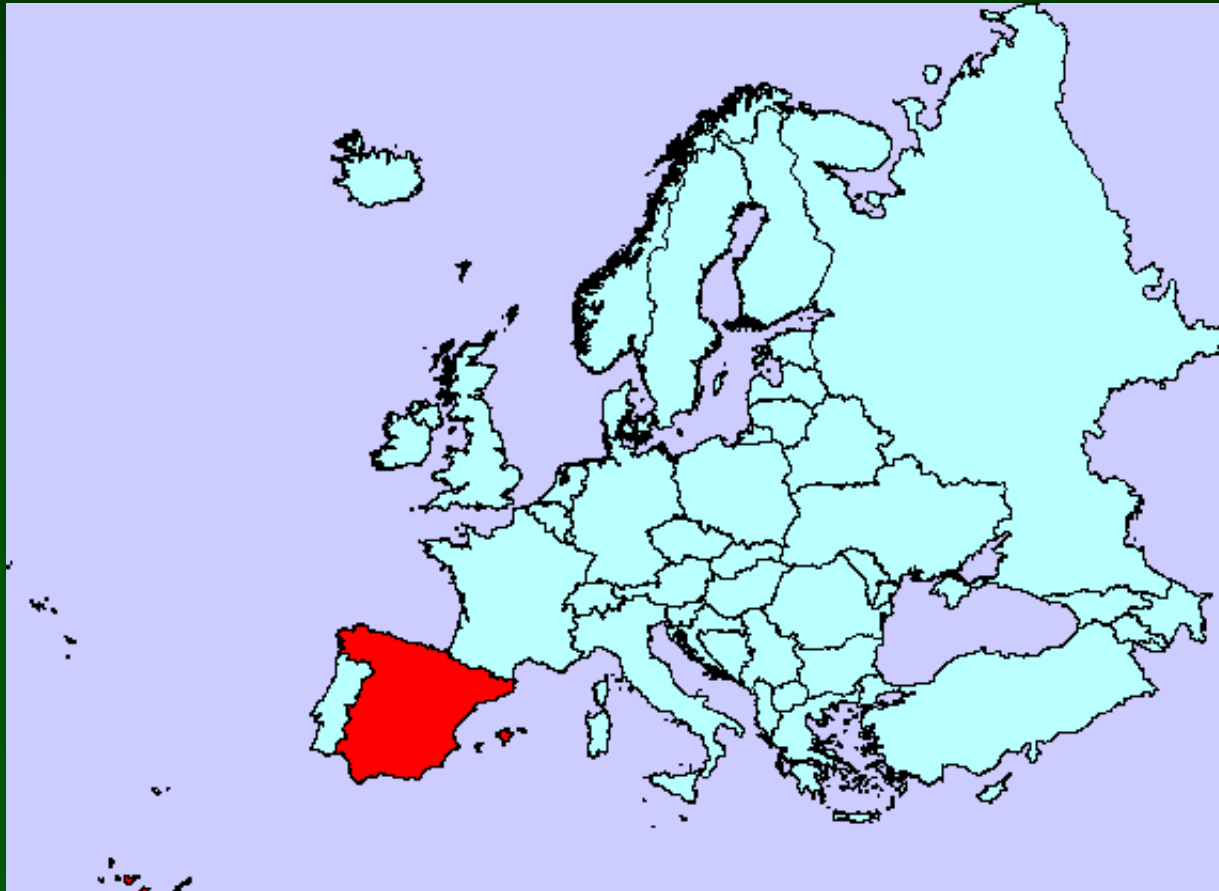


# Georreferenciación

# Referencias geográficas

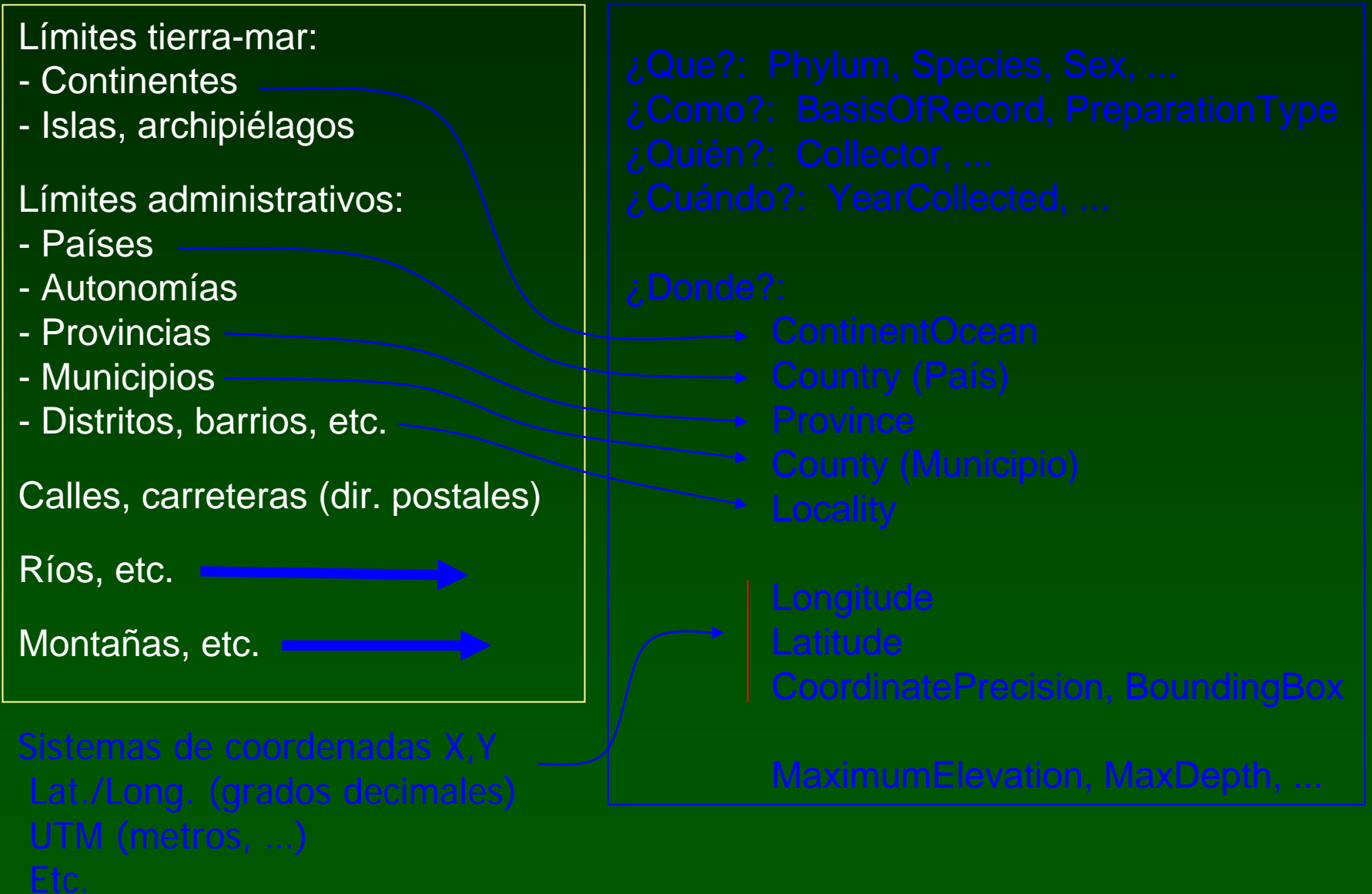
Collection Database (Darwin Core): Country = Spain

Digital map “Countries-Europe” (GIS layer with database): Country = Spain



# Referencias geográficas

# Campos Darwin Core





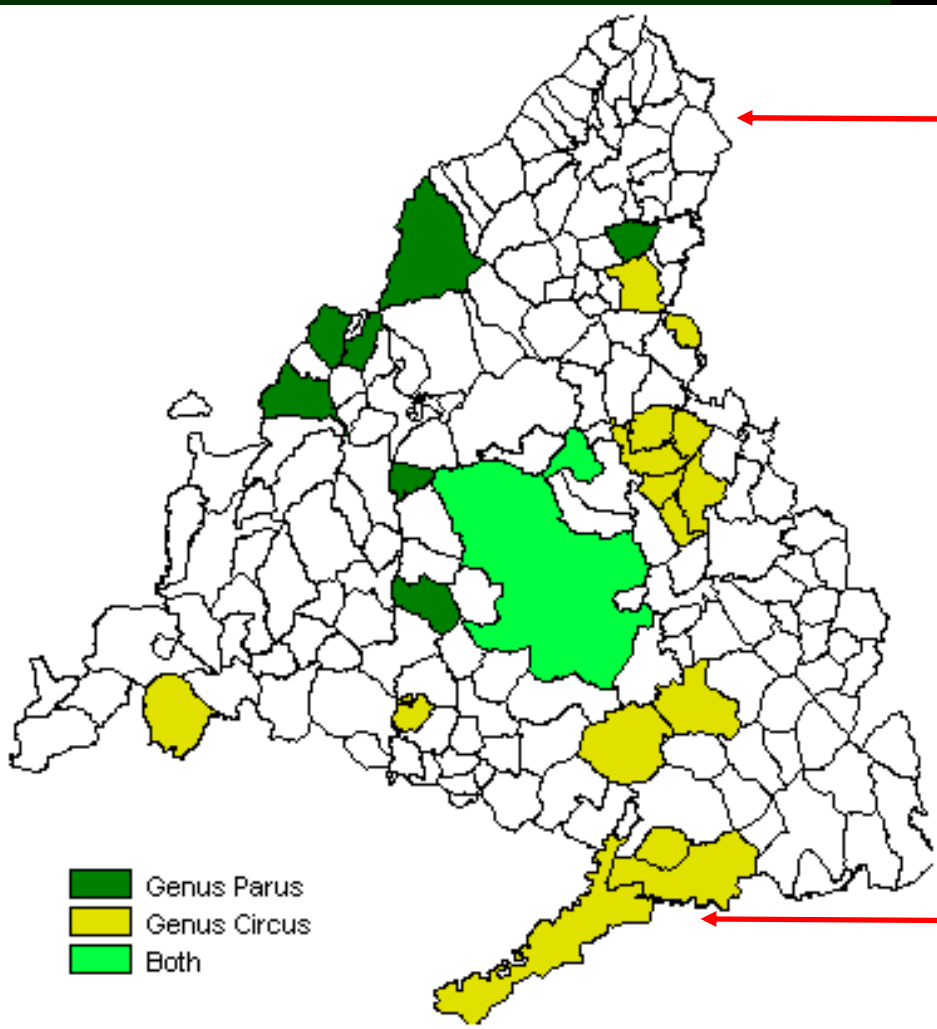
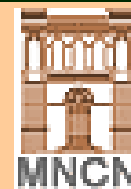
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

MNCN  
Museo Nacional de Ciencias Naturales

Mapa web

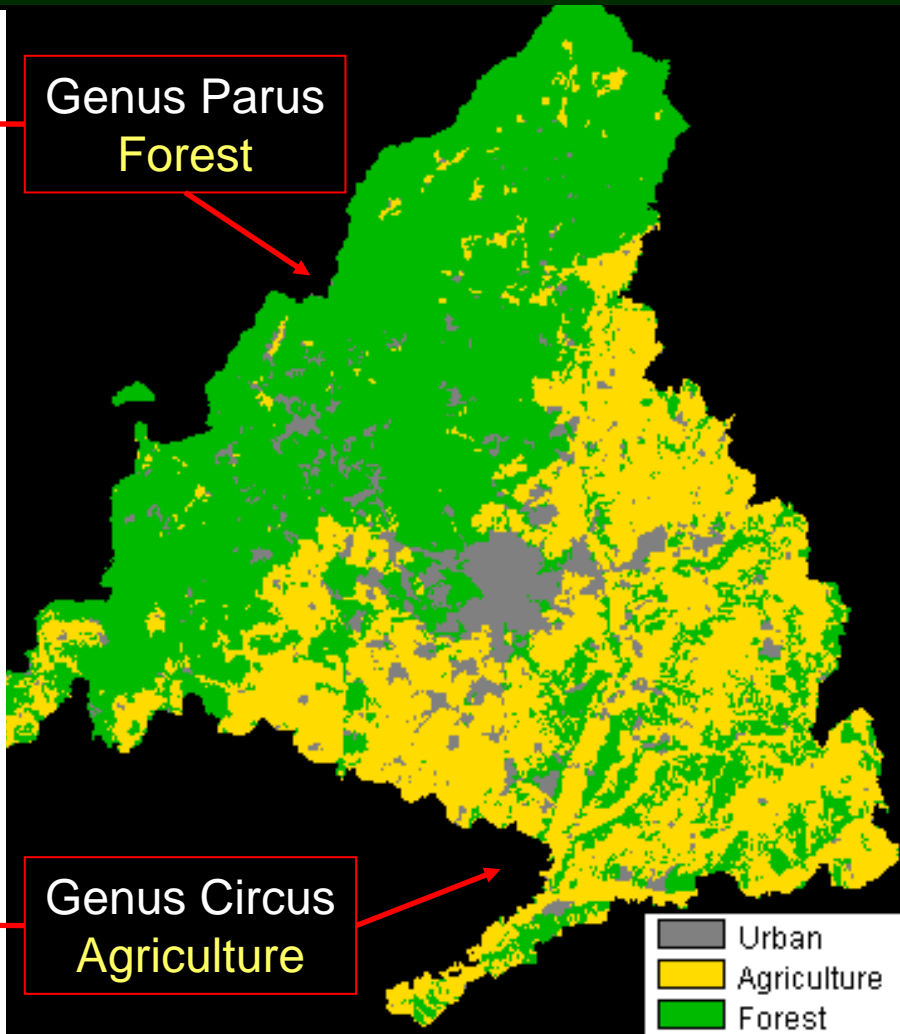


SOCIEDAD DE AMIGOS DEL MUSEO



Genus Parus  
Forest

Genus Circus  
Agriculture



Birds Colection – Spanish Museum of Natural Sciences (MNCN-CSIC)