



# Data of the environment in Catalonia

2005



Government of Catalonia  
**Department  
of the Environment  
and Housing**

## Territorial distribution of population

### Group of municipalities according to intervals of population <sup>(1)</sup>

Intervals (inhabitants)	Municipalities			Population		
	Partial	Accumulated	%	Partial	Accumulated	%
0 - 1.000	508	53,5		201.889		3,0
1.001 - 5.000	254	80,5		584.052		11,5
5.001 - 10.000	80	89,0		555.015		19,7
10.001 - 20.000	49	94,2		693.658		29,9
20.001 - 50.000	32	97,6		934.170		43,6
50.001 - 100.000	14	99,0		943.893		57,4
més de 100.000	9	100,0		2.900.642		100,0
<b>Total</b>	<b>946</b>			<b>6.813.319</b>		

<sup>(1)</sup> Official figures of population resulting from the census revision referred to 1st January 2004.

### Geographical distribution of population

Municipalities	Municipalities	Population (inh.)	Area (km <sup>2</sup> )	Density (inh./km <sup>2</sup> )
Mountain <sup>(1)</sup>	294	304.042	14.650,04	21
Coast	70	3.000.520	2.112,23	1.421
Rest of municipalities	582	3.508.757	15.133,03	232
<b>Total</b>	<b>946</b>	<b>6.813.319</b>	<b>31.895,30</b>	<b>214</b>

<sup>(1)</sup> Tossa de Mar is not included, as it is considered a coastal municipality.

## Environmental data

### Land Use



### Structure of economic activity 2003

Activity sectors	VAB pm <sup>(1)</sup>	% of the total	% variation <sup>(2)</sup>	Employed (thousands)	% of the total	% variation
Agriculture	1.956	1,6	-4,7	75,3	2,5	5,5
Industry	33.104	26,6	0,7	787,5	26,2	-2,5
Construction	10.629	8,5	3,7	331,3	11,0	11,1
Services	78.795	63,3	2,4	1.809,9	60,2	7,7
<b>Total</b>	<b>124.484</b>	<b>100,0</b>	<b>1,8</b>	<b>3.004,0</b>	<b>100,0</b>	<b>5,1</b>

<sup>(1)</sup> Millions of euros

<sup>(2)</sup> Referring to the previous year, at constant prices

Vehicle	(in thousands of vehicles)				
	2000	2001	2002	2003 <sup>(1)</sup>	2004 <sup>(2)</sup>
Motorbike	408	418	425	420	443
Car	2.852	2.931	2.999	2.985	3.090
Bus, lorry and other	740	769	796	815	858
<b>Total</b>	<b>4.000</b>	<b>4.118</b>	<b>4.220</b>	<b>4.220</b>	<b>4.391</b>
<b>Vehicles/1.000 h.<sup>(1)</sup></b>	<b>639</b>	<b>647</b>	<b>649</b>	<b>619</b>	<b>645</b>

<sup>(1)</sup> Official population figures in each period.

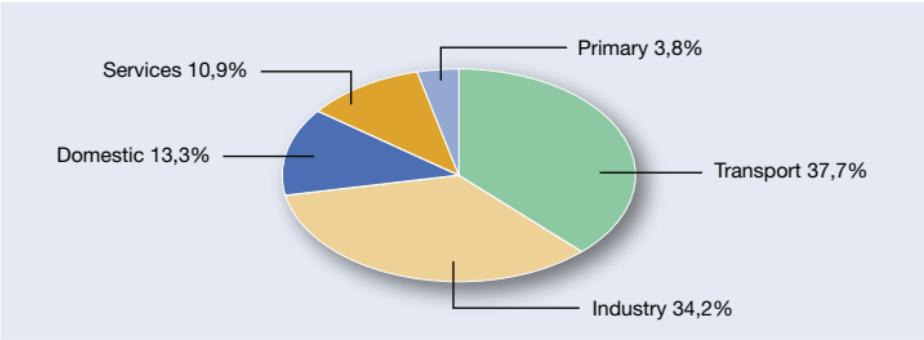
<sup>(2)</sup> Since 2003 cars temporarily out of service are not included.

### Primary energy consumption. 2003

Energy	Production		Consumption	
	Ktoe	%	Ktoe	%
Oil	313,3	4,1	12.471,7	48,1
Nuclear	6.419,8	83,7	6.419,8	24,7
Natural gas	1,9	0,0	5.676,0	21,9
Coal	75,3	1,0	168,6	0,6
Balance of electric exchanges	0,0	0,0	336,5	1,3
Non renewable industrial waste	56,1	0,7	56,1	0,2
Renewable energy	806,1	10,5	826,0	3,2
Hydraulic power	519,4	6,8	519,4	2,0
Urban solid waste power	147,7	1,9	147,7	0,6
Forest and farming biomass power	93,9	1,2	93,9	0,4
Wind power	14,0	0,2	14,0	0,1
Biogas power	22,7	0,3	22,7	0,1
Biofuels	5,4	0,1	25,3	0,1
Solar power	2,9	0,0	2,9	0,0
<b>Total</b>	<b>7.672,5</b>	<b>100,0</b>	<b>25.954,5</b>	<b>100,0</b>

Nota: the year 2003 was a year with a high hydraulicity. This fact influences notably the percentage of renewable over the total primary energy consumption.

### Final consumption of energy in 2003



## Water

### Urban waste water treatment plants <sup>(1)</sup> 2004

Plant	Number of plants	Treatment capacity		Total capacity in inh-e <sup>(2)</sup>	
		(m <sup>3</sup> /day)	(%)	(inh.-e)	(%)
Biological	277	2.132.783	75,2	12.659.707	79,3
Physicochemical	2	671.100	23,7	3.000.178	19,6
Lagooning	35	31.210	1,1	179.599	1,1
<b>Total</b>	<b>314</b>	<b>2.835.093</b>	<b>100,0</b>	<b>15.839.484</b>	<b>100,0</b>

<sup>(1)</sup> The data on inh-equiv and capacity refer to design.

<sup>(2)</sup> inh-e: inhabitant equivalent.

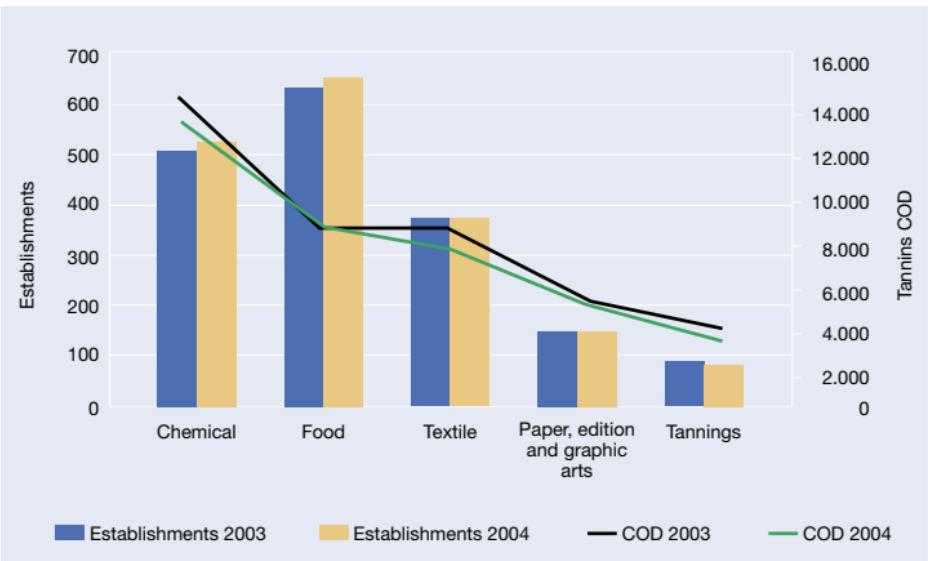
### Global output of plants in service

	1999	2000	2001	2002	2003	2004
Number of Plants in service	225	246	270	290	297	314
Number of plants analysed	219	242	248	275	279	301
Treated low (m <sup>3</sup> /day)	1.536.135	1.556.860	1.534.239	1.606.844	1.958.800	1.972.069
Global medium output of MES elimination (%)	91,0	92,2	93,6	89,3	93,2	87,1
Global medium output of DBO <sub>5</sub> elimination (%)	94,0	93,7	94,4	91,9	94,5	90,8
Plants in accordance with Directive 91/271/EEC (%)	98,2	94,3	93,6	95,5	96,6	92,3

### Treatment evolution and destination of sludge produced in plants (tons of fresh material)

	1999	2000	2001	2002	2003	2004
<b>Sludge eliminated according to destination</b>	<b>403.690</b>	<b>416.515</b>	<b>401.784</b>	<b>384.358</b>	<b>326.860</b>	<b>312.792</b>
Quarry restoration	258.076	266.602	267.281	248.459	222.663	219.678
Landfill	15.666	11.672	4.966	2.661	—	—
Abocador	129.942	138.241	126.744	133.223	104.197	93.115
Ecobrick and other	6	—	2.793	15	—	—
<b>Treated sludge</b>	<b>50.163</b>	<b>47.752</b>	<b>73.015</b>	<b>199.680</b>	<b>335.348</b>	<b>296.874</b>
Thermal drying	4.679	9.596	18.883	33.270	61.940	55.115
Composting	45.484	38.156	54.132	113.781	145.383	136.955
Aerobic/anaerobic digestion	—	—	—	143.463	128.025	104.804

### Evolution of pollutant load discharged in industrial centres <sup>(1)</sup>



<sup>(1)</sup> According to declaration of use and pollution of water (DUCA): sections B (05.02) and C, D and E, if over 6,000 m<sup>3</sup>/year the pollution exceeds parameters indicated in the regulation or own treatment systems are available according to Decree 103/2000, of 6th March.

Water demand: consumption use			Average volume (hm <sup>3</sup> /year)	
Demand	Internal basin	Inter-communal basin	Total Catalonia	%
Domestic	518,8	54,2	573,0	18,3
Industrial	251,5	31,9	283,4	9,1
<b>Total Urban</b>	<b>770,3</b>	<b>86,1</b>	<b>856,4</b>	<b>27,4</b>
Irrigation	386,5	1.815,5	2.202,0	70,5
Stockbreeding	29,7	34,9	64,6	2,1
<b>Total farming</b>	<b>416,2</b>	<b>1.850,4</b>	<b>2.266,6</b>	<b>72,6</b>
<b>Total</b>	<b>1.186,5</b>	<b>1.936,5</b>	<b>3.123,0</b>	<b>100,0</b>

There are not considered consumption uses to supply hydro-electric and nuclear stations and fish farms.  
Based on the population in 1999.

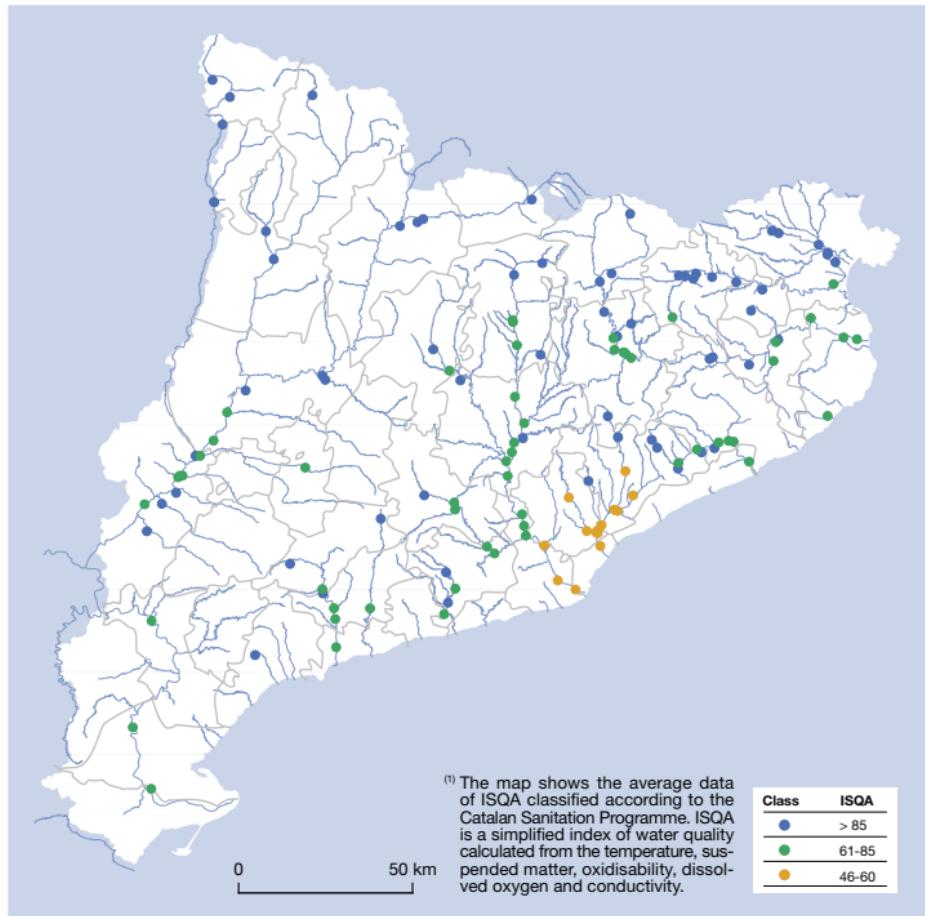
### Water quality and quantity control points

	1990	1995	2000	2001	2002	2003 <sup>(1)</sup>	2004 <sup>(2)</sup>
<b>Quality Control Networks</b>	<b>361</b>	<b>1.267</b>	<b>6.438</b>	<b>5.991</b>	<b>6.519</b>	<b>5.699</b>	<b>5.794</b>
Surface water	175	254	714	754	775	167	236
Ground water		596	1.416	1.333	1.600	1.445	1.468
Marine water	186	417	4.308	3.904	4.144	4.087	4.090
<b>Quantity Control Networks</b>	<b>470</b>	<b>620</b>	<b>738</b>	<b>772</b>	<b>808</b>	<b>768</b>	<b>857</b>
Ground water	393	393	430	430	430	380	380
Surface water	77	227	308	342	378	388	477

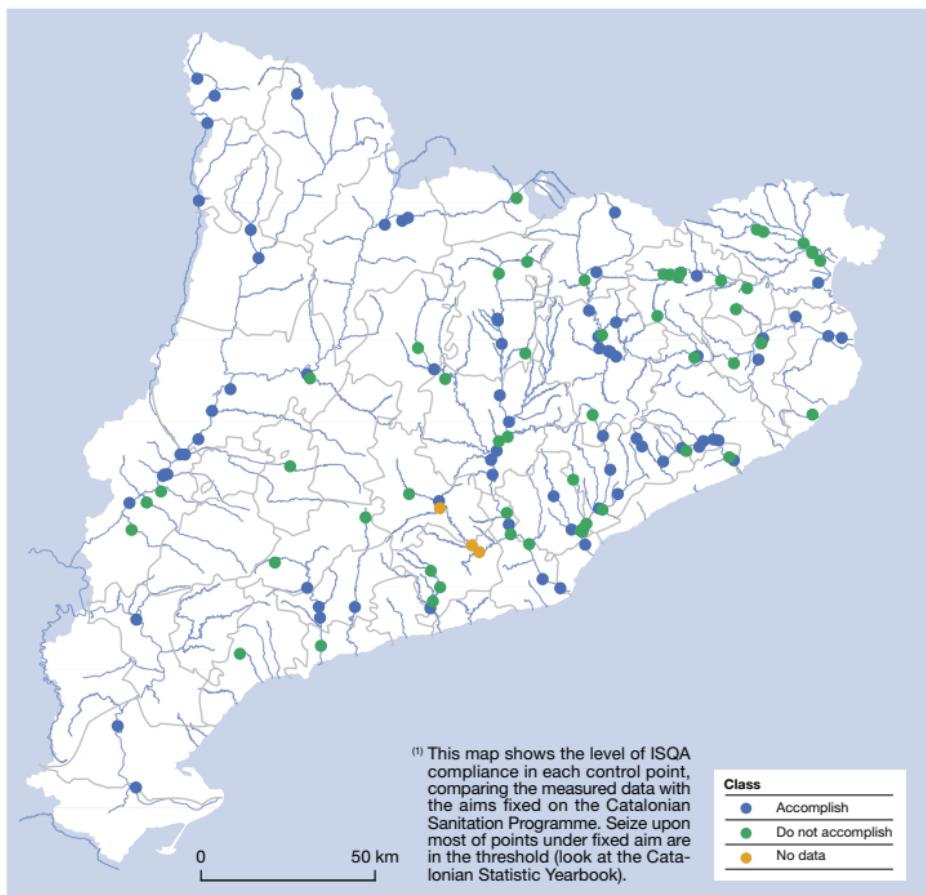
<sup>(1)</sup> In 2003, the number of control points in surface water is lower than the previous ones because the sampling rate and the number of controlled parameters have been intensified.

<sup>(2)</sup> Since 2004 all points where manual quantity control is undertaken in rivers, water channels and marshes are counted.

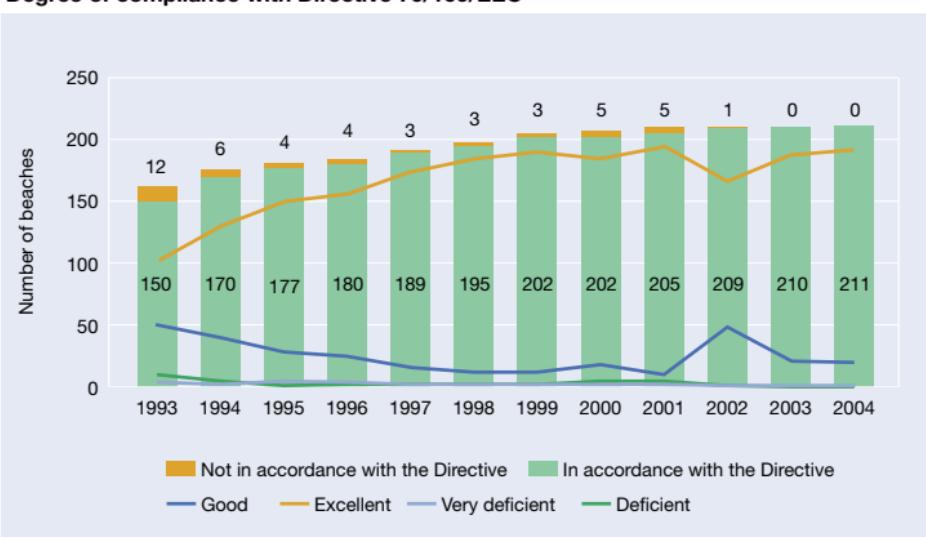
### Surface Water Quality. Average data of ISQA 2004 <sup>(1)</sup>



## Surface Water Quality. State of fulfilment of ISQA according to the aims fixed on the Catalan Sanitation Programme. 2004<sup>(1)</sup>



## Degree of compliance with Directive 76/160/EEC

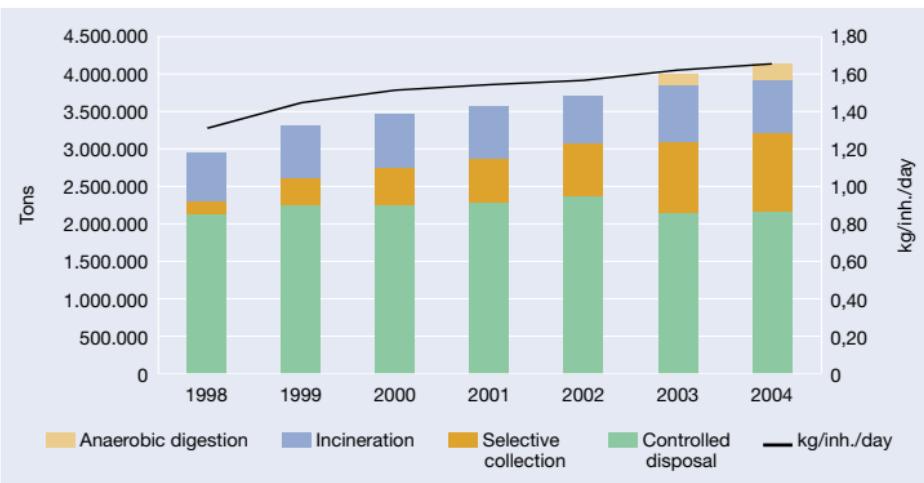


# Waste

## Final destination of municipal waste

Municipal waste production 2004: 4,130,823 tonnes

Production coefficient (kg/inh./day) 2004: 1.66



Municipal waste is that from domestic activities and shops, offices or services activities that for its nature or composition are comparable to domestic waste. Based on the official population figures published by IDESCAT.

## Selective collection. 2004

Waste	Tonnes collected	Generation coefficient (kg/inh./yr) <sup>(1)</sup>	Number of bins	inh./bins <sup>(1)</sup>
Glass	143.990	21,1	21.872	312
Paper and card	335.713	49,3	23.012	296
Light packaging	60.597	8,9	21.197	321
Organic matter <sup>(2)</sup>	178.073	26,1	20.663	330
Batteries <sup>(3)</sup>	490	0,1	20.942	
Medicines <sup>(3)</sup>	376	0,1	2.943	
Large packaging	130.397	19,1		
Pruning-gardening	48.994	7,2		
Textile	4.398	0,6		
Collection centres <sup>(4)</sup>	147.050			
<b>Total selective collection</b>	<b>1.050.076</b>			

(1) Official population in 2004 published by IDESCAT.

(2) Population only considered where the selective collection is well established.

(3) The number of bins refers to the number of centres or organisations collecting batteries or medicines: chemist's, health centres, shops, etc.

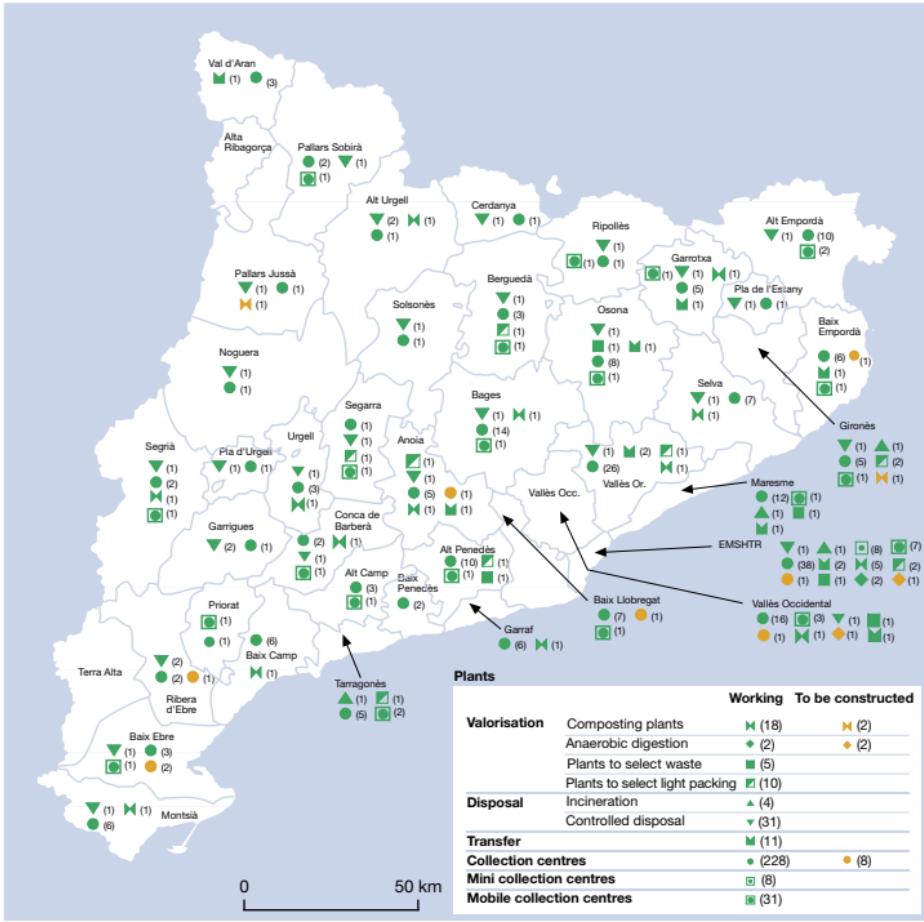
(4) Except glass, paper, large packaging, pruning and gardening and batteries collected in a collection and storage centre.

## Treatment of declared industrial waste

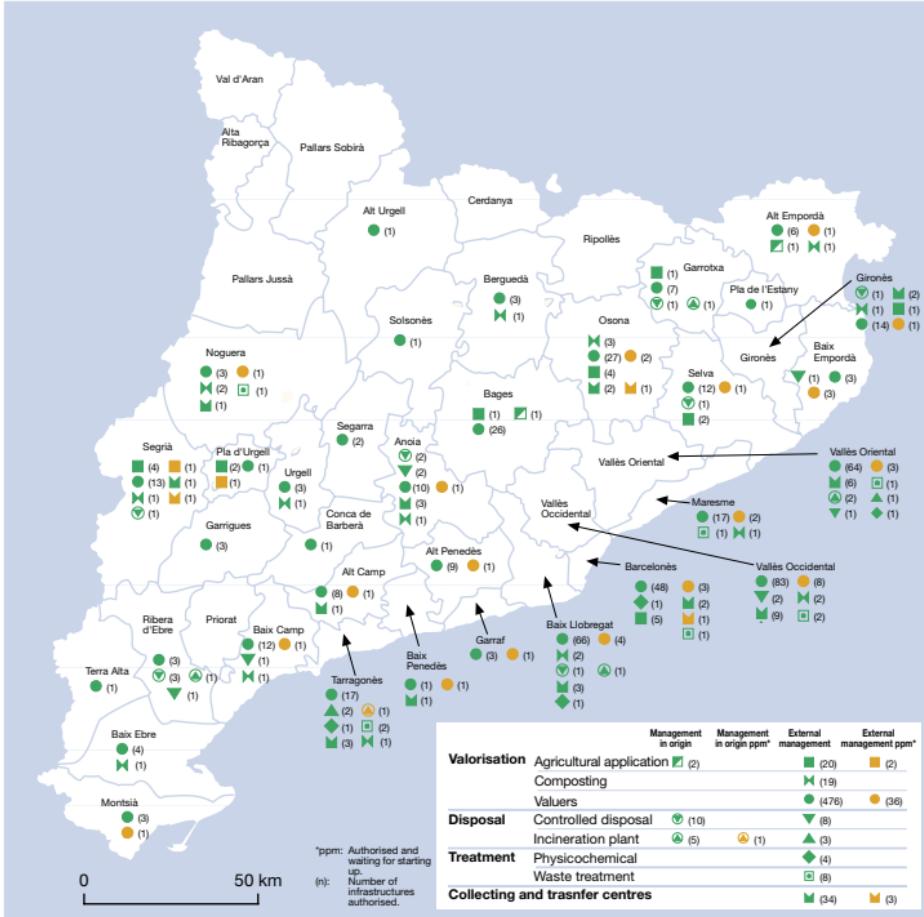
(tons)

Treatment	Special		Non special		Total	
	2003	2004	2003	2004	2003	2004
Recovery	335.808	360.273	2.605.677	3.029.894	2.941.485	3.390.126
Sub-product	25.087	26.193	956.767	606.088	981.854	632.281
Storage	9.073	7.939	35.405	85.000	44.477	92.939
Physicochemical-Biological plant	126.032	127.551	226.484	364.848	352.516	492.399
Controlled disposal	63.922	64.213	1.318.864	1.359.871	1.382.785	1.424.084
Incineration	80.747	112.068	43.033	50.251	123.780	162.319
Insufficient management	478	209	8.207	10.701	8.685	10.910
No specified management	4.582	5.423	24.962	20.780	29.544	26.204
<b>Total</b>	<b>645.729</b>	<b>703.869</b>	<b>5.219.398</b>	<b>5.527.433</b>	<b>5.865.126</b>	<b>6.231.262</b>

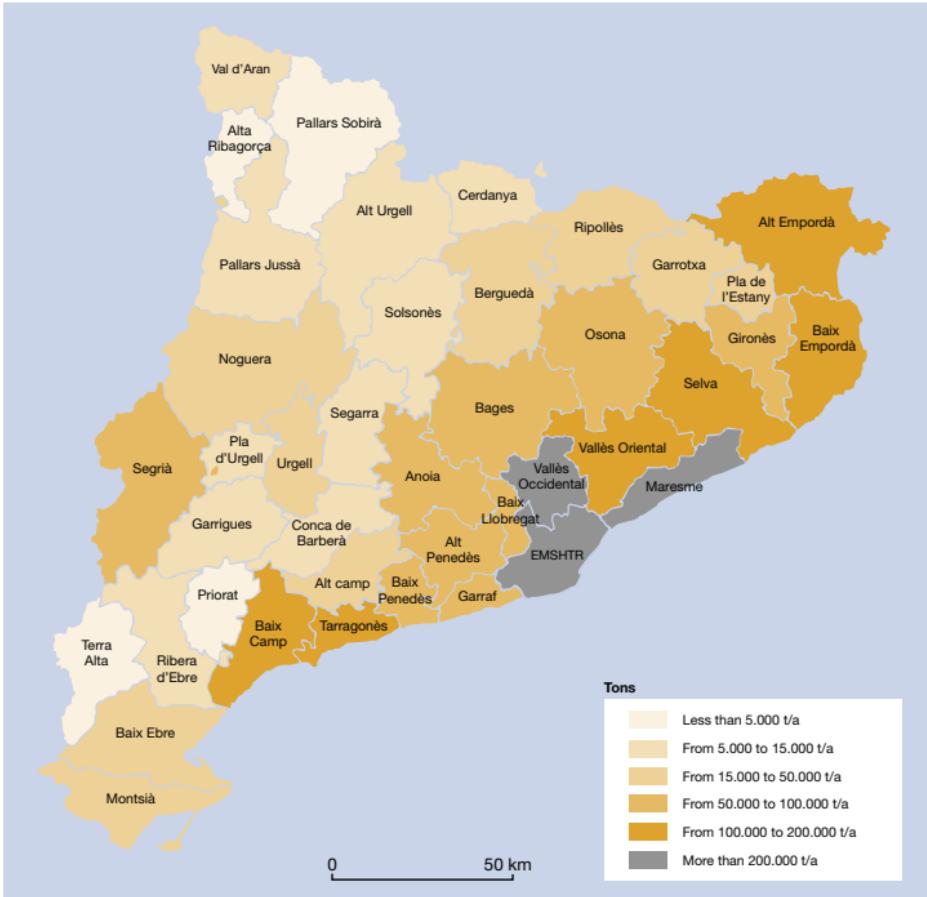
## Municipal waste treatment infrastructures in 2004



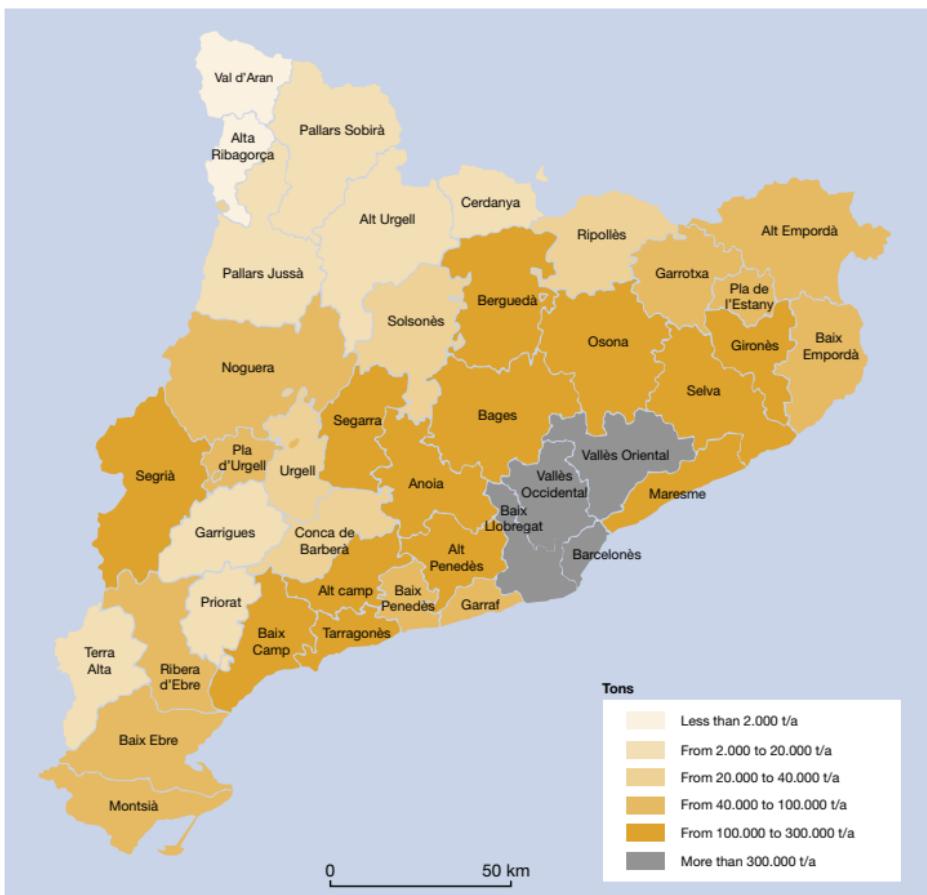
## **Industrial waste treatment Infrastructures in 2004**



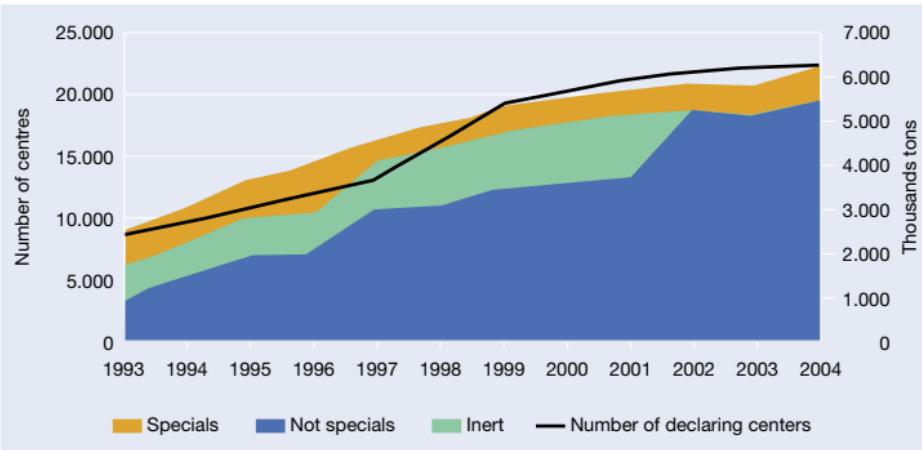
## Municipal waste produced in 2004



## Industrial waste declared in 2004



## Evolution of the number of declaring centres and declared industrial waste



With the entry into force of the European Waste Catalogue in 2002 the category inert waste is eliminated (210 kinds of waste) which become non-special (149) or special in some cases (61).

## Industrial waste declaration in economic sectors

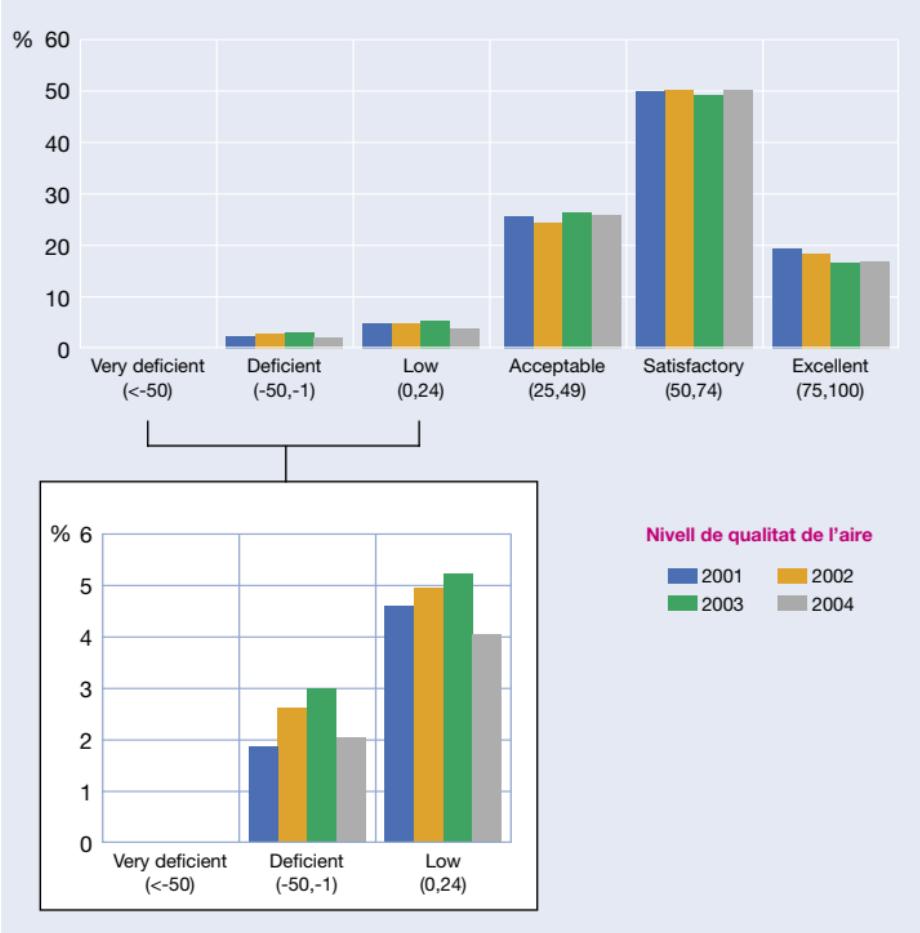
Sub-sector CCAE <sup>(1)</sup>	Sector	Tons		
		2002	2003	2004
10	Extraction and accumulation of anthracite, Hard coal, lignite and peat	30.120	18.583	14,14 <sup>(2)</sup>
15	Food and drink industry	1.214.935	1.306.053	1.188.730
17	Textiles industry	138.555	124.203	122.827
19	Hide preparation, tanning and finishing, fur manufacture, leather goods, saddlery and shoe shop	60.354	50.743	38.868
20	Wood and cork industry, except furniture, basketwork and esparto workshop	155.058	188.233	165.696
21	Paper industry	381.757	381.554	407.288
22	Publishing, graphic arts and reproduction of registered supports	136.648	117.742	139.372
24	Chemicals industry	649.089	631.886	642.348
25	Rubber and plastic products manufacture	118.182	122.653	133.054
26	Manufacture of other mineral non-metal products	219.603	257.895	301.867
27	Metallurgy	426.643	395.371	458.856
28	Manufacture of metal products except machinery and equipment	354.305	354.844	372.185
29	Machinery and mechanical equipment construction industry	73.694	71.430	75.200
31	Machinery and electrical material manufacture	66.873	65.620	65.114
34	Manufacture of motor vehicles, trailers and semi-trailers	305.263	317.024	319.956
36	Furniture manufacture; other manufacturing industry	57.694	75.602	65.901
37	Recycling	230.343	161.488	181.603
40	Production and distribution of electrical energy, gas, steam and hot water	183.314	101.245	138.066
90	Public sanitation activities	1.029.659	1.031.764	1.297.244
	Other	100.231	91.195	117.127
<b>Total</b>		<b>5.932.320</b>	<b>5.865.126</b>	<b>6.231.302</b>

<sup>(1)</sup> Catalan Classification of Economic Activities.

<sup>(2)</sup> Group 10 is smaller because there is a waste produced by the company Unión Minera del Bajo Segre, which does not count it, as it is considered water.

## Atmosphere

### Distribution of ICQA <sup>(1)</sup> level according to air quality level



<sup>(1)</sup> ICQA was calculated using levels of: Carbon monoxide (CO), Nitrogen dioxide (NO<sub>2</sub>), Sulphur dioxide (SO<sub>2</sub>), Ozone (O<sub>3</sub>) and suspended particles PM10 and PST.

### Control of ozone immission levels

	1999	2000	2001	2002	2003	2004
Total number of sensors	48	47	48	37	39	42
Stations exceeding population alert threshold <sup>(1)</sup>	0	0	0	1	0	0
Stations exceeding population information threshold <sup>(2)</sup>	16	12	20	9	22	10
Time value exceeding population information threshold (units)	43	61	96	41	222	43
<b>Average level (µg/m<sup>3</sup>)</b>	<b>44</b>	<b>44</b>	<b>43</b>	<b>43</b>	<b>47</b>	n.d.
<b>Maximum level (µg/m<sup>3</sup>)</b>	<b>237</b>	<b>273</b>	<b>272</b>	<b>384</b>	<b>288</b>	<b>234</b>

<sup>(1)</sup> 360 µg/m<sup>3</sup> in one hour (RD 1494/1995).

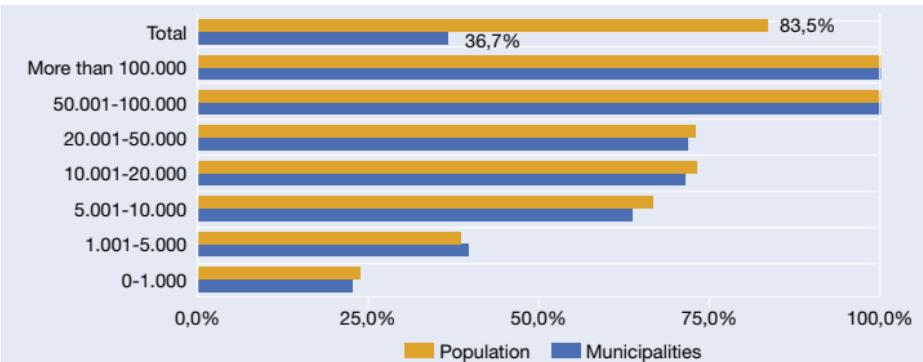
<sup>(2)</sup> 180 µg/m<sup>3</sup> in one hour (RD 1494/1995).

## Voluntary systems to protect the Environment

### Number of companies with voluntary systems to protect the Environment

System	1999	2000	2001	2002	2003	2004
Ecolabel	3	8	8	8	9	8
Emblem of environmental quality guarantee						
Products	711	803	806	806	819	807
Services	-	1	28	53	87	132
Eco-Management and Auditing System (EMAS)	31	59	110	133	147	147

## Local bodies subscribing to the Aalborg Charter 2004



Percentages are calculated on the total of municipalities and/or population for each interval considered.

## Protection and management of biodiversity

### PEIN development status with regard to the definitive demarcation of the areas

	Situation on 31.12.2000			Situation on 31.12.2004		
	Number of areas	Area Ha	% (1)	Number of areas	Area Ha	% (1)
Areas with definitive limits	119 (50 being precessed)	524.048	80,9	122 (6 being precessed)	590.459	91,1
a) Areas delimited by special plan	107 (50 being precessed)	418.504	64,6	105 (6 being precessed)	386.452	59,6
b) Areas delimited by ENPE plan	12 (4 RNFS)	105.544	16,3	17 (4 RNFS)	204.007	31,5

(1) Percentage on the final situation of PEIN: 648.065 hectares.

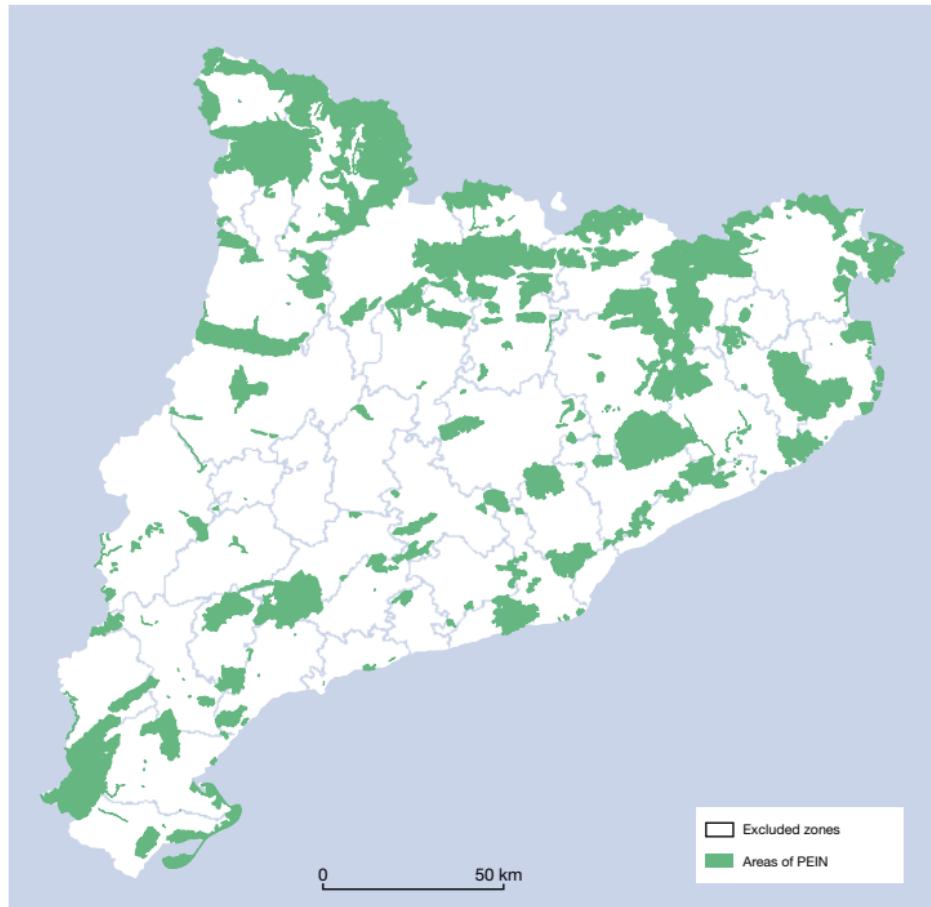
ENPE: Natural Area of Special Protection Declared Nature Reserve pending approval in regard to definitive demarcation.

## Parks of Catalonia. 2004

	Year of creation	Terrestrial ha (1)	Marine ha	Observ (protection areas, etc)	Visitors (2)
<b>National Parks</b>					
Aigüestortes i Estany de Sant Maurici	1955	14.119		26.733	341.800
<b>Natural Parks</b>					
El Cadí-Moixeró	1983	39.671			430.000
Zona Volcànica de la Garrotxa	1982	12.007			600.000
Aiguamolls de l'Empordà	1983	4.729			51.779
Delta de l'Ebre	1983	7.313	489		855.000
Montserrat	1987	3.630		4.039	2.242.000
El Montseny	1987	17.372		12.748	–
Sant Llorenç del Munt i l'Obac	1987	9.638		4.056	–
Cap de Creus	1998	10.813	3.073		450.000
Els Ports	2001	35.051			78.000
El Montsant	2002	9.192			32.284
L'Alt Pirineu	2003	69.850			–
<b>Natural Site of National Interest</b>					
Pedraforca	1982	1.671			–
Poblet	1984	3.408			179.000
L'Albera	1986	4.108			44.000
Pinya de Rosa	2003	50			–
<b>Nature Reserve</b>					
Delta del Llobregat	1987	297		201	95.000
<b>Marine Reserve</b>					
Illes Medes	1990		511		268.000
Masia Blanca (i zona d'amortiment)	2000		448		–
<b>Areas protected by urban legislation</b>					
Collserola	1987	6.535			–
Garraf	1986	12.377			–
Montnegre-Corredor	1989	15.010			–
Montesquiu	1986	547			–
Olèrdola	1992	609			–

(1) Some ENPE areas can be included in other protection classifications, such as nature reserves.

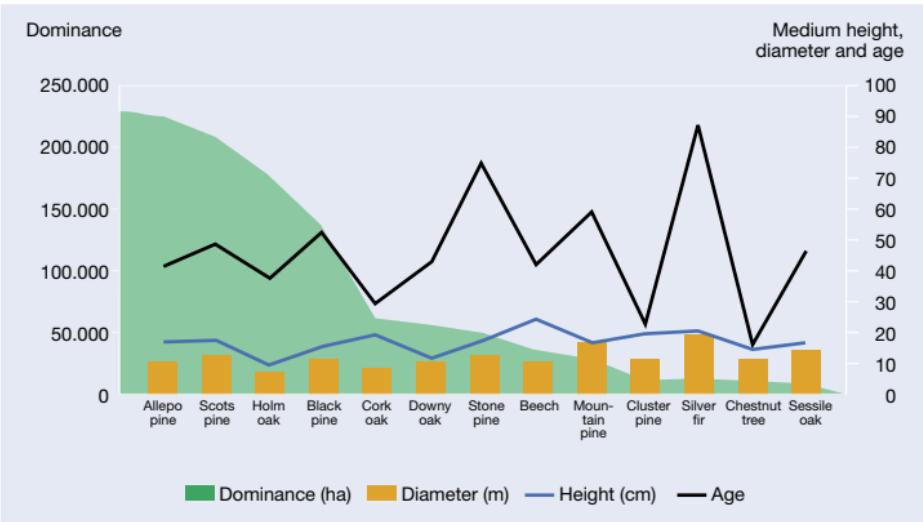
(2) Estimated figures.



#### Evolution of some species of Catalan fauna

Species	2000	2001	2002	2003	2004
Great white egret	1	6	7	8	9
Bonelli's eagle	63	66	66	66	67
Dupont's lark	25	20	10-12	4-6	7
Marsh harrier	34	35	40	45	35
Bittern	1	1	1	4-5	
Glossy ibis	12	21	23	26	51
Montagu's harrier	50	73	70	66	88
Greater flamingo	1.600	251	1.677	1.355	1.650
Audouin's gull	10.558	11.666	10.122	10.356	10.717
Otter (individual)	270	-	>400	-	-
Lesser grey shrike	14	18	19	17	18-19
Bearded vulture	20	21	21	22	24
Vulture	-	-	-	-	-
Sandwich tern	931	1.666	1.893	2.127	2.786
<i>Bengalensis</i> tern	1	1	1	2	2
Common tern	3.085	3.393	4.221	4.734	5.452
Little tern	244	294	314	332	384
Lesser kestrel	42	67	74	94	240

## Main tree species in Catalonia



Source: Forest and Ecological Inventory of Catalonia, 1988-1998. CREAF

## Open cast mining according to its degree of restoration. 2004

Degree of restoration	Dossier		Surface areas	
	Number	Ha	%	
Authorised open cast mining which has not yet commenced	343	1.003	8,2	
Open cast mining with no restoration commenced	965	4.854	39,5	
Open cast mining with integrated restoration	441	3.945	32,1	
Restored open cast mining in a guarantee period	200	1.313	10,7	
Restored open cast mining with a returned deposit or of DPH <sup>(1)</sup>	625	1.172	9,5	
<b>Total</b>	<b>2.547</b>	<b>12.287</b>	<b>100,0</b>	

(1) Public Water Resources.

## Number of environmental impact declarations issued 2004<sup>(1)</sup>

Actions	1992	1994	1996	1998	2000	2002	2003	2004
Harbours	1	2	0	2	3	1	0	1
Linear infrastructures	5	21	13	17	34	22	18	33
Basins	2	5	0	0	0	0	0	1
Industrial activities	7	7	16	39	13	64	50	48
Soil use transformation	2	2	1	3	4	5	10	15
Affecting PEIN areas	0	21	20	28	24	3	9	9
<b>Total</b>	<b>17</b>	<b>58</b>	<b>50</b>	<b>89</b>	<b>78</b>	<b>95</b>	<b>87</b>	<b>107</b>

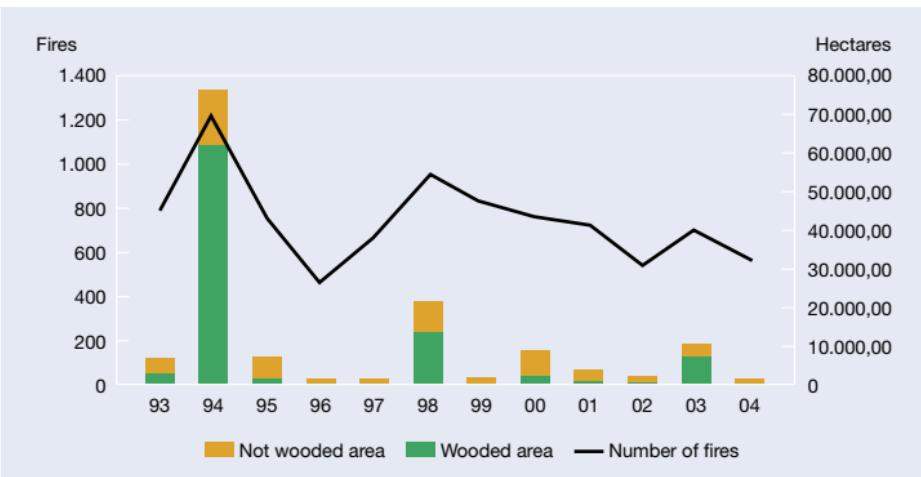
(1) According to date of approval of Central Commission of Industry and Classified Activities (CCIA) and of Environmental Report.

## Hunting and fishing areas 2004

	Number of areas	Area in hectares
<b>Authorised hunting/fishing</b>		
National Hunting Preserves	7	235.047
Controlled Hunting Zones	14	87.499
Controlled Fishing Zones	323	1.533 <sup>(1)</sup>
<b>Protected areas</b>		
Wildlife Preserves	71	9.184
Hunting Preserves	2	389
Fishing Preserves	212	-

<sup>(1)</sup> Area in km.

## Evolution of number of fires and affected area



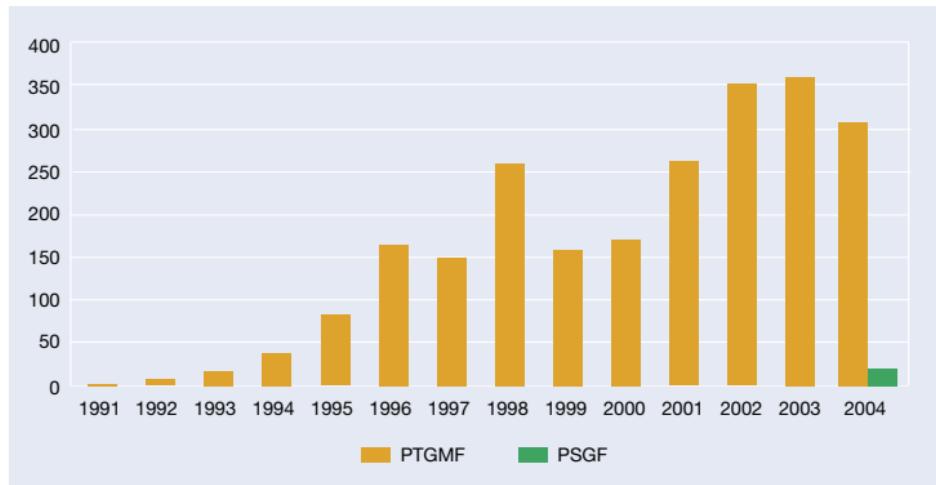
## Evolution of the Technical Forest Management and Development Plan (PTGMF) and Simple Forest Management Plan (PSGF) 2004

Year	PTGMF Valid	Area under organisation with PTGMF(ha) Valid	Number of PTGMF approved per years	Are under organisation with PTGMF (ha) per year
2000	1.049	165.915,5	169	28.541,1
2001	1.310	207.153,3	261	41.237,8
2002	1.681	261.720,1	371	54.782,2
2003	2.037	312.508,0	356	50.787,8
2004	2.268	343.959,0	308	43.658,5

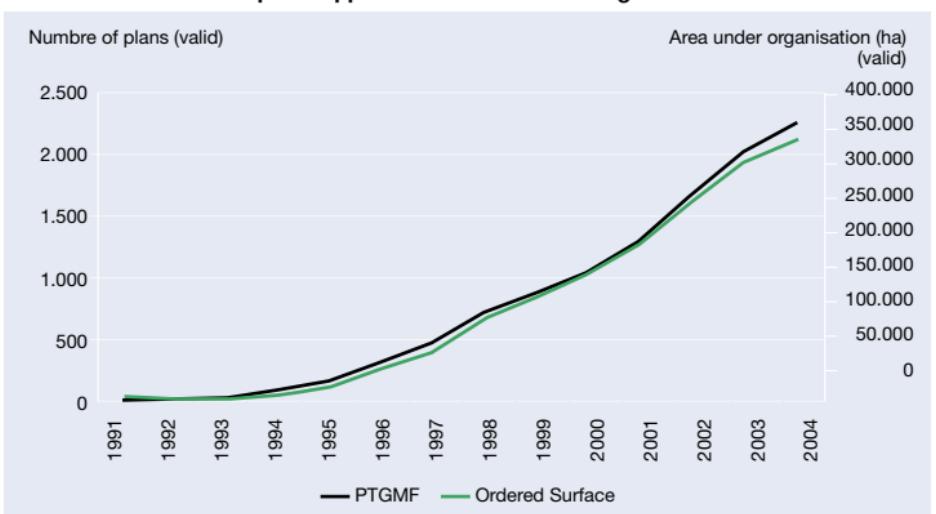
  

Year	PSGF Valid	Area under organisation with PSGF(ha) Valid	Number of PSGF approved per years	Area under organisation with PSGF (ha) per year
2004	17	250,2	17	250,2

## Distribution of PTGMF and PSGF approved



## Evolution of number of plans approved and area under organisation



### Sources:

Department of the Environment and Housing  
Department of Territorial Policy and Public Works  
Institute of Statistics of Catalonia

Data at 31<sup>st</sup> December of the year given.

<http://mediambient.gencat.net/cat/>

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