

Environment

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Environment

- The total number of registered vehicles has increased by 84% over the period 1990-2003. Related CO₂ emissions have increased by 135% in the same period.
- Greenhouse gas emissions have increased by 25% during the years 1990 to 2003 while acid rain precursor emissions have decreased by 22% in the same period.
- The tonnage of household and commercial waste collected in 2003 increased by 7% relative to 2002.
- 28% of municipal waste in Ireland was recovered in 2003, which compares favourably with 21% in 2002.
- Ireland's total primary energy requirement in 2003 was 14.81m TOE - an increase of 57% since 1990.
- The land area under forest was 699,166 hectares in 2004 - an increase of 45% over the period 1990-2004.

Introduction

At present, Ireland's record rate of economic development is causing an acceleration of pressures on the environment. This follows a period of several decades during which population, urbanisation and agricultural intensification have given rise to gradually increasing environmental pressures.

Awareness of the necessity for environmental protection has grown substantially in the last number of years. There is increasing concern regarding environmental pollution in all of its aspects.

This chapter contains data on a number of these direct and indirect pressures on the environment, details of which are drawn primarily from the Environmental Protection Agency (EPA).

Table 18.1 contains information on the land areas afforested, together with the associated levels of carbon sinks (changes in forest and other woody biomass stocks). Forests absorb carbon dioxide from the atmosphere and store it in the biomass until the eventual release as a result of burning or timber decay.

Sources of energy by fuel type and energy consumption over the period 1980-2003, which give an indication of the needs of the Irish economy for energy and how they are sourced, are given in Tables 18.3-18.4. The Transport sector accounts for an increasing proportion of energy consumption and Table 18.2 details the growth in vehicle numbers and CO₂ emissions. An example of a pressure indicator derived from economic prosperity and economic activity has been included in Table 18.2, namely the number of cars per 1,000 population.

The next eight tables (Tables 18.5-18.12) deal with Greenhouse gases, Acid rain agents, environmental pressures over time, such as river quality and the generation of waste. Tables 18.5-18.8 give a picture as to where Ireland has progressed vis-à-vis emissions of greenhouse gases and acidifying agents. Finally, data is provided on various aspects of Ireland's weather in Tables 18.13-18.16 in respect of 2003. The final graph shows that over the past 100 years the mean temperature for Ireland has increased by 1⁰ C and that the 1990s was the warmest decade in the last 120 years.

Definitions

TOE = Tonnes of Oil Equivalent

HFCs = Hydrofluorocarbons

PFCs = Perfluorocarbons

SF₆ = Sulphur hexafluorides

ug/m³ = Microgram per cubic metre

Table 18.1 Land areas afforested and CO₂ sinks

| | Hectares public | Hectares private | Hectares total | Hectares annual change | CO ₂ sinks kilotonnes |
|------|-----------------|------------------|----------------|------------------------|----------------------------------|
| 1980 | 291,086 | 102,221 | 393,307 | – | – |
| 1981 | 297,185 | 102,496 | 399,681 | 6,374 | – |
| 1982 | 303,201 | 102,994 | 406,195 | 6,514 | – |
| 1983 | 308,899 | 103,321 | 412,220 | 6,025 | – |
| 1984 | 314,091 | 103,794 | 417,885 | 5,665 | – |
| 1985 | 318,716 | 104,411 | 423,127 | 5,242 | – |
| 1986 | 323,404 | 106,691 | 430,095 | 6,968 | – |
| 1987 | 328,799 | 109,645 | 438,444 | 8,349 | – |
| 1988 | 335,910 | 114,241 | 450,151 | 11,707 | – |
| 1989 | 342,539 | 122,738 | 465,277 | 15,126 | – |
| 1990 | 349,209 | 131,885 | 481,094 | 15,817 | -450.11 |
| 1991 | 357,064 | 143,177 | 500,241 | 19,147 | -422.95 |
| 1992 | 364,629 | 152,311 | 516,940 | 16,699 | -318.05 |
| 1993 | 371,456 | 161,482 | 532,938 | 15,998 | -380.85 |
| 1994 | 378,078 | 174,319 | 552,397 | 19,459 | -407.25 |
| 1995 | 384,445 | 191,662 | 576,107 | 23,710 | -428.68 |
| 1996 | 388,871 | 208,217 | 597,088 | 20,981 | -420.15 |
| 1997 | 389,722 | 218,800 | 608,522 | 11,434 | -497.91 |
| 1998 | 392,648 | 228,802 | 621,450 | 12,928 | -573.62 |
| 1999 | 393,539 | 240,579 | 634,118 | 12,668 | -500.51 |
| 2000 | 396,725 | 253,088 | 649,813 | 15,695 | -407.33 |
| 2001 | 397,042 | 268,235 | 665,277 | 15,464 | -1,007.02 |
| 2002 | 397,361 | 282,970 | 680,331 | 15,054 | -1,319.59 |
| 2003 | 397,489 | 291,939 | 689,428 | 9,097 | -1,329.91 |
| 2004 | 397,610 | 301,556 | 699,166 | 9,738 | – |

Source: Forest Service

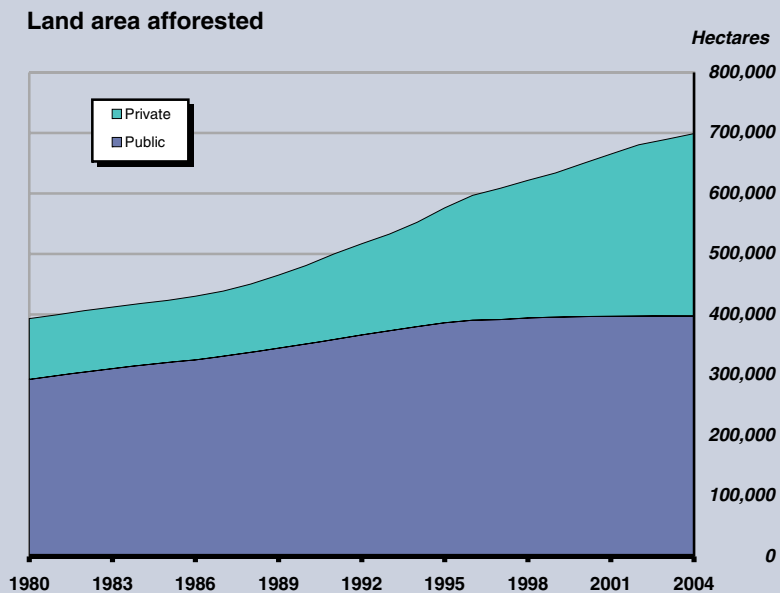


Table 18.2 Environmental pressures – transport

| | Number of private cars | Total number of vehicles | Population | Number of private cars per 1,000 of population | CO ₂ emissions from road transport kilotonnes |
|------|------------------------|--------------------------|------------|--|--|
| 1979 | 682,958 | 853,211 | 3,368,200 | 203 | – |
| 1980 | 734,371 | 911,031 | 3,401,000 | 216 | – |
| 1981 | 774,594 | 949,819 | 3,443,400 | 225 | – |
| 1982 | 709,000 | 882,140 | 3,480,000 | 204 | – |
| 1983 | 718,555 | 897,381 | 3,504,000 | 205 | – |
| 1984 | 711,098 | 906,109 | 3,529,000 | 202 | – |
| 1985 | 709,546 | 914,758 | 3,540,000 | 200 | – |
| 1986 | 711,087 | 922,484 | 3,540,600 | 201 | – |
| 1987 | 736,595 | 959,753 | 3,546,500 | 208 | – |
| 1988 | 749,459 | 981,296 | 3,530,700 | 212 | – |
| 1989 | 773,396 | 1,019,560 | 3,509,500 | 220 | – |
| 1990 | 796,408 | 1,054,259 | 3,505,800 | 227 | 4,680 |
| 1991 | 836,583 | 1,105,545 | 3,525,700 | 237 | 4,886 |
| 1992 | 858,498 | 1,126,473 | 3,554,500 | 242 | 5,297 |
| 1993 | 891,027 | 1,151,238 | 3,574,100 | 249 | 5,278 |
| 1994 | 939,022 | 1,202,273 | 3,585,900 | 262 | 5,496 |
| 1995 | 990,384 | 1,262,503 | 3,601,300 | 275 | 5,915 |
| 1996 | 1,057,383 | 1,338,616 | 3,626,100 | 292 | 6,609 |
| 1997 | 1,134,429 | 1,432,330 | 3,660,600 | 310 | 7,205 |
| 1998 | 1,196,901 | 1,510,853 | 3,704,900 | 323 | 8,264 |
| 1999 | 1,269,245 | 1,608,156 | 3,744,700 | 339 | 9,121 |
| 2000 | 1,319,250 | 1,682,221 | 3,786,900 | 348 | 9,544 |
| 2001 | 1,384,704 | 1,769,684 | 3,838,900 | 361 | 10,300 |
| 2002 | 1,447,908 | 1,850,046 | 3,917,200 | 370 | 10,833 |
| 2003 | 1,507,106 | 1,937,429 | 3,978,900 | 379 | 10,993 |

Source: Department of the Environment, Heritage and Local Government; CSO and Environmental Protection Agency

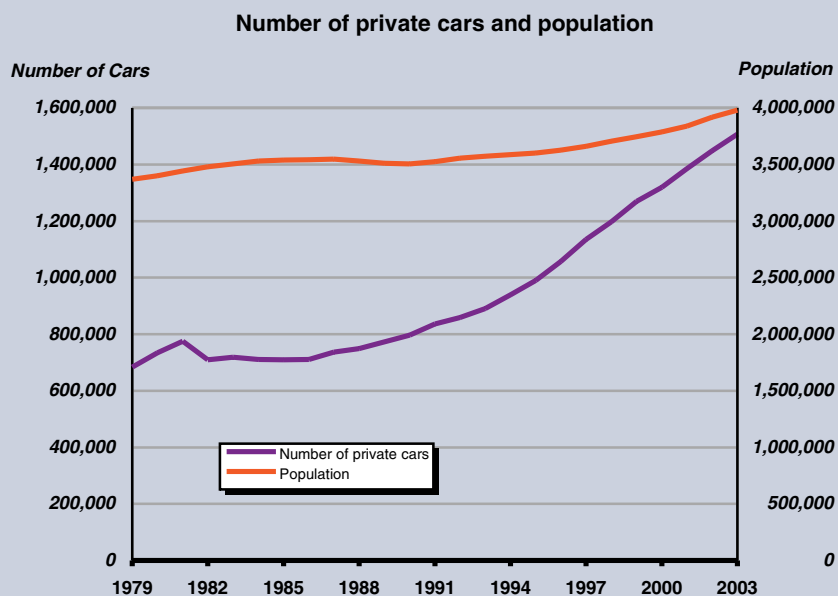


Table 18.3 Total primary energy requirement by fuel type

| | Millions of tonnes of oil equivalent (TOE) | | | | | | | Percentages | | | | | | |
|---------------------|--|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | 1985 | 1990 | 1995 | 2000 | 2001 | 2002 | 2003 | 1985 | 1990 | 1995 | 2000 | 2001 | 2002 | 2003 |
| Coal | 1.05 | 2.16 | 1.92 | 1.99 | 2.04 | 1.98 | 1.91 | 13.1 | 22.9 | 17.9 | 14.2 | 13.8 | 13.4 | 12.9 |
| Peat | 1.45 | 1.36 | 1.21 | 0.80 | 0.88 | 0.86 | 0.84 | 18.0 | 14.4 | 11.3 | 5.7 | 6.0 | 5.8 | 5.7 |
| Oil | 3.89 | 4.29 | 5.45 | 7.92 | 8.44 | 8.26 | 8.02 | 48.4 | 45.5 | 50.9 | 56.5 | 57.2 | 56.0 | 54.1 |
| Natural Gas | 1.59 | 1.45 | 1.92 | 3.04 | 3.14 | 3.33 | 3.69 | 19.8 | 15.4 | 17.9 | 21.7 | 21.3 | 22.6 | 24.9 |
| Renewables | 0.06 | 0.17 | 0.20 | 0.26 | 0.26 | 0.29 | 0.26 | 0.7 | 1.8 | 1.9 | 1.9 | 1.8 | 1.9 | 1.8 |
| Electricity imports | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.04 | 0.10 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.3 | 0.7 |
| Total | 8.04 | 9.43 | 10.70 | 14.02 | 14.77 | 14.75 | 14.81 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Sustainable Energy Ireland

TABLE 18.3
TABLE 18.4

Table 18.4 Final energy consumption by sector

| | Millions of tonnes of oil equivalent (TOE) | | | | | | | Percentages | | | | | | |
|--------------|--|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | 1985 | 1990 | 1995 | 2000 | 2001 | 2002 | 2003 | 1985 | 1990 | 1995 | 2000 | 2001 | 2002 | 2003 |
| Transport | 1.72 | 2.03 | 2.46 | 3.90 | 4.31 | 4.46 | 4.51 | 27.9 | 28.2 | 31.1 | 36.8 | 38.6 | 39.5 | 39.1 |
| Residential | 2.09 | 2.19 | 2.18 | 2.58 | 2.68 | 2.68 | 2.77 | 33.9 | 30.4 | 27.6 | 24.3 | 24.0 | 23.7 | 24.0 |
| Industry | 1.68 | 1.72 | 1.75 | 2.27 | 2.25 | 2.20 | 2.17 | 27.2 | 23.9 | 22.1 | 21.4 | 20.2 | 19.5 | 18.8 |
| Agriculture | n/a | 0.25 | 0.29 | 0.33 | 0.33 | 0.33 | 0.33 | n/a | 3.5 | 3.7 | 3.1 | 3.0 | 2.9 | 2.8 |
| Services | 0.68 | 1.01 | 1.23 | 1.53 | 1.59 | 1.62 | 1.76 | 11.0 | 14.0 | 15.5 | 14.4 | 14.2 | 14.4 | 15.3 |
| Total | 6.17 | 7.20 | 7.91 | 10.61 | 11.16 | 11.29 | 11.54 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Department of Enterprise, Trade and Employment

Final Energy Consumption by Sector

(Agriculture energy consumption only available after 1986)

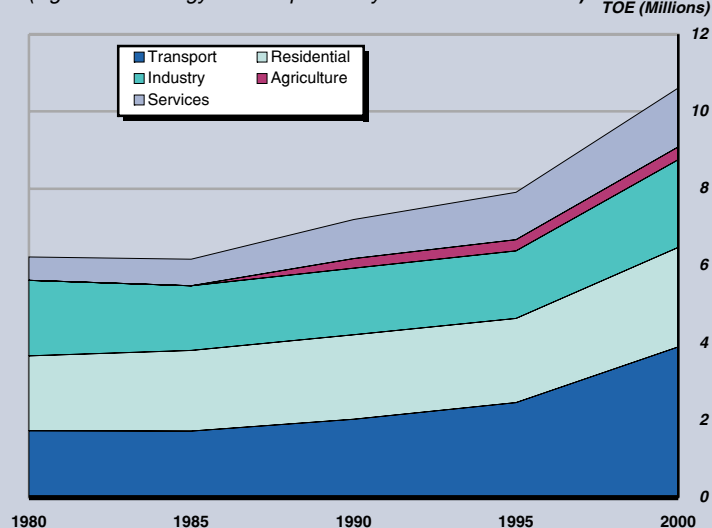


Table 18.5 Greenhouse gas emissions

| | <i>Kilotonnes</i> | | | | | | | |
|-----------------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 1990 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
| Carbon Dioxide (CO ₂) | 31,797.22 | 38,312.45 | 40,249.82 | 42,133.27 | 44,159.74 | 46,460.47 | 45,808.14 | 44,449.95 |
| Methane (CH ₄) | 566.66 | 616.89 | 617.62 | 613.56 | 608.79 | 598.23 | 609.29 | 607.30 |
| Nitrous Oxide (N ₂ O) | 32.33 | 35.29 | 36.07 | 36.65 | 36.47 | 35.22 | 33.06 | 31.42 |
| Total | 32,396.21 | 38,964.63 | 40,903.51 | 42,783.48 | 44,805.00 | 47,093.92 | 46,450.49 | 45,088.66 |

Source: Environmental Protection Agency

Table 18.6 Greenhouse gas emissions, CO₂ equivalent

| | <i>CO₂ equivalent kilotonnes</i> | | | | | | | |
|-----------------------------------|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 1990 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
| Carbon Dioxide (CO ₂) | 31,797.22 | 38,312.45 | 40,249.82 | 42,133.27 | 44,159.74 | 46,460.47 | 45,808.14 | 44,449.95 |
| Methane (CH ₄) | 11,899.86 | 12,954.69 | 12,970.02 | 12,884.76 | 12,784.59 | 12,562.83 | 12,795.12 | 12,753.26 |
| Nitrous Oxide (N ₂ O) | 10,022.30 | 10,940.89 | 11,181.51 | 11,361.62 | 11,307.06 | 10,916.84 | 10,249.89 | 9,739.04 |
| HFCs, PFCs and SF ₆ | 179.14 | 341.54 | 256.60 | 411.09 | 547.38 | 594.15 | 531.43 | 612.22 |
| Total | 53,898.52 | 62,549.57 | 64,657.95 | 66,790.74 | 68,798.77 | 70,534.29 | 69,384.58 | 67,554.47 |
| Base year 1990=100 | 100.00 | 116.05 | 119.96 | 123.92 | 127.65 | 130.86 | 128.73 | 125.34 |

Source: Environmental Protection Agency

Greenhouse gas emissions

CO₂ equivalent kilotonnes

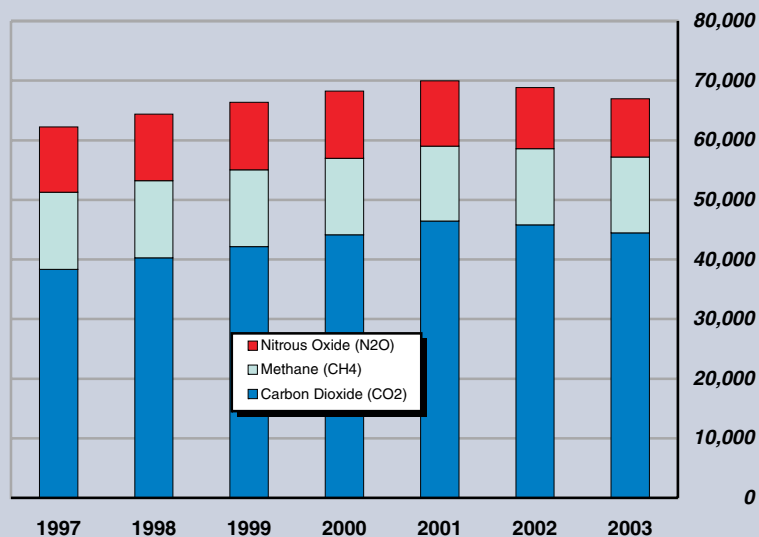


Table 18.7 Acid rain and ozone precursors

Tonnes

| | 1990 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Sulphur Dioxide (SO ₂) | 185,786 | 166,114 | 176,061 | 157,369 | 131,489 | 125,792 | 96,246 | 76,373 |
| Nitrogen Oxides (NOX) | 122,410 | 124,502 | 128,607 | 126,334 | 132,691 | 134,956 | 125,257 | 119,750 |
| Ammonia (NH ₃) | 112,317 | 123,397 | 126,551 | 126,987 | 122,440 | 122,599 | 118,973 | 116,260 |
| Volatile Organic Compounds (VOC) | 110,940 | 115,730 | 117,740 | 98,670 | 90,330 | 86,990 | 81,418 | 77,841 |
| Carbon Monoxide (CO) | 400,920 | 312,159 | 317,732 | 285,310 | 279,571 | 269,690 | 254,119 | 238,797 |
| Total | 932,373 | 841,902 | 866,691 | 794,670 | 756,521 | 740,027 | 676,013 | 629,021 |

Source: Environmental Protection Agency

Table 18.8 Acid rain precursors

SO₂ equivalent per tonne of gas emitted

| | 1990 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Sulphur Dioxide (SO ₂) | 185,786 | 166,114 | 176,061 | 157,369 | 131,489 | 125,792 | 96,246 | 76,373 |
| Nitrogen Oxides (NOX) | 85,160 | 86,616 | 89,472 | 87,891 | 92,313 | 93,889 | 87,141 | 83,310 |
| Ammonia (NH ₃) | 211,426 | 232,282 | 238,220 | 239,040 | 230,481 | 230,780 | 223,955 | 218,848 |
| Total | 482,372 | 485,012 | 503,753 | 484,300 | 454,283 | 450,461 | 407,342 | 378,531 |
| Base year 1990=100 | 100 | 101 | 104 | 100 | 94 | 93 | 84 | 78 |

Source: Environmental Protection Agency

Acid rain precursors

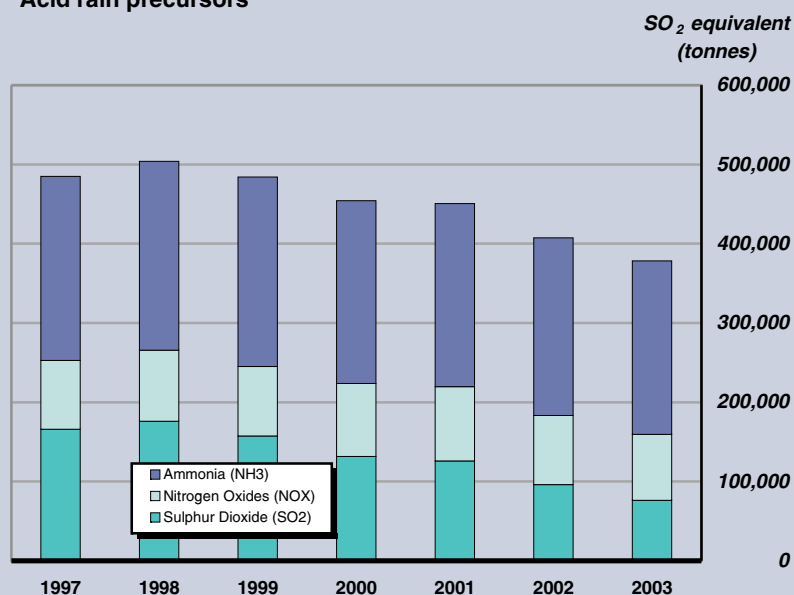


TABLE 18.7

TABLE 18.8

Table 18.9 Black smoke concentrations* in urban areas

| Location | <i>ug/m³</i> | | | | | | | | | |
|----------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1989-1990 | 1990-1991 | 1992-1993 | 1994-1995 | 1996-1997 | 1998-1999 | 1999-2000 | 2000-2001 | 2001-2002 | 2002-2003 |
| Dublin | 269 | 102 | 58 | 62 | 41 | 23 | 35 | 42 | 29 | 21 |
| Cork | 128 | 202 | 209 | 138 | 66 | 54 | 42 | 56 | 53 | 37 |
| Limerick | 92 | 73 | 110 | 101 | 99 | 47 | 39 | 41 | 42 | 32 |

*98 percentile of daily mean
Source: Environmental Protection Agency

Table 18.10 River quality

| | <i>% of channel length</i> | | | | |
|---------------------|----------------------------|--------------|--------------|--------------|--------------|
| | 1987-1990 | 1991-1994 | 1995-1997 | 1998-2000 | 2001-2003 |
| Unpolluted | 77.3 | 71.2 | 67.0 | 69.8 | 69.2 |
| Slightly polluted | 12.0 | 16.8 | 18.2 | 17.0 | 17.9 |
| Moderately polluted | 9.7 | 11.4 | 13.8 | 12.4 | 12.3 |
| Seriously polluted | 0.9 | 0.6 | 0.9 | 0.8 | 0.6 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Environmental Protection Agency

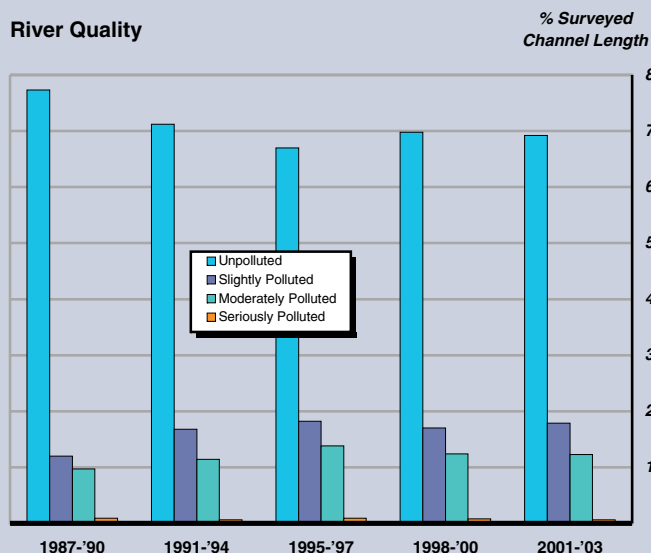


Table 18.11 Total household and commercial waste collected

| | Tonnes | | | | | | |
|--|---------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1984 | 1993 | 1995 | 1998 | 2001 | 2002 | 2003 |
| Household and commercial waste collected | 854,866 | 1,188,312 | 1,385,439 | 1,852,450 | 2,297,603 | 2,398,769 | 2,559,387 |
| Base year 1984=100 | 100 | 139.0 | 162.1 | 216.7 | 268.8 | 280.6 | 299.4 |

Source: Environmental Protection Agency

Table 18.12 Disposal and recovery of household and commercial waste and packaging in 2003

| | Paper | Glass | Plastic | Ferrous, aluminium and other metals | Textiles | Organics | Others | Total |
|--------------------------------------|----------------|---------------|----------------|-------------------------------------|---------------|----------------|----------------|------------------|
| Waste quantity landfilled | 566,361 | 97,666 | 204,730 | 61,162 | 53,567 | 525,605 | 323,533 | 1,832,624 |
| Household waste landfilled | 274,072 | 54,486 | 142,900 | 45,248 | 45,973 | 395,881 | 272,548 | 1,231,108 |
| Commercial waste landfilled | 292,289 | 43,180 | 61,830 | 15,914 | 7,594 | 129,724 | 50,985 | 601,516 |
| Waste quantity recovered | 358,878 | 73,087 | 48,158 | 12,786 | 3,463 | 175,604 | 54,787 | 726,763 |
| Household waste recovered | 75,723 | 52,347 | 9,618 | 2,182 | 2,837 | 40,420 | 2,625 | 185,752 |
| Commercial waste recovered | 283,154 | 20,740 | 38,540 | 10,604 | 626 | 135,184 | 52,162 | 541,010 |
| Total Waste Recovered (%) | 38.8 | 42.8 | 19.0 | 17.3 | 6.1 | 25.0 | 14.5 | 28.4 |
| Packaging quantity disposed | 251,319 | 61,566 | 173,363 | 51,449 | 1,395 | 6,078* | 41,517 | 586,687 |
| Packaging quantity recovered | 175,965 | 69,546 | 34,840 | 41,236 | 0 | 97,717* | 294 | 419,598 |
| Total Packaging Recovered (%) | 41.2 | 53.0 | 16.7 | 44.5 | 0.0 | 94.1 | 0.7 | 41.7 |

* Wood

Source: Environmental Protection Agency

Disposal and recovery of household and commercial waste in 2003

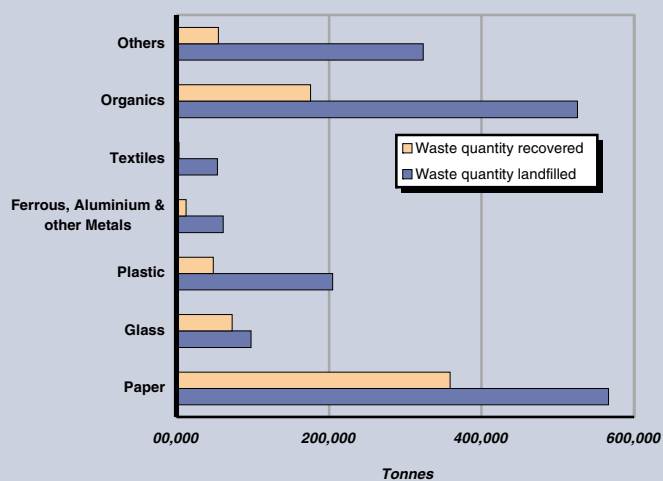


TABLE 18.11
TABLE 18.12

Table 18.13 Rainfall, 2003

| Station | Annual amount | % of average ¹ | Most in a day | |
|----------------------|---------------|---------------------------|---------------|-------------|
| | | | Amount | Date |
| | <i>mm</i> | | <i>mm</i> | |
| Shannon Airport | 773.3 | 83 | 29.8 | 09 June |
| Cork Airport | 967.7 | 90 | 43.0 | 13 April |
| Malin Head | 842.3 | 79 | 26.7 | 27 June |
| Dublin Airport | 653.3 | n/a | 47.2 | 22 October |
| Casement Aerodrome | 634.8 | 89 | 51.6 | 22 October |
| Valentia Observatory | 1,508.0 | 105 | 63.7 | 09 June |
| Kilkenny | 742.7 | 90 | 23.6 | 30 June |
| Belmullet | 1,075.3 | 94 | 33.4 | 11 November |
| Connacht Airport | 1,092.4 | n/a | 25.4 | 19 July |
| Clones | 841.5 | 91 | 42.3 | 17 July |
| Birr | 595.9 | 74 | 22.5 | 30 June |
| Mullingar | 737.7 | 79 | 21.7 | 30 June |
| Rosslare | 889.6 | 101 | 41.7 | 02 May |

¹ 30 year average 1961-1990
Source: Met Éireann

Percentage of normal rainfall, 2003

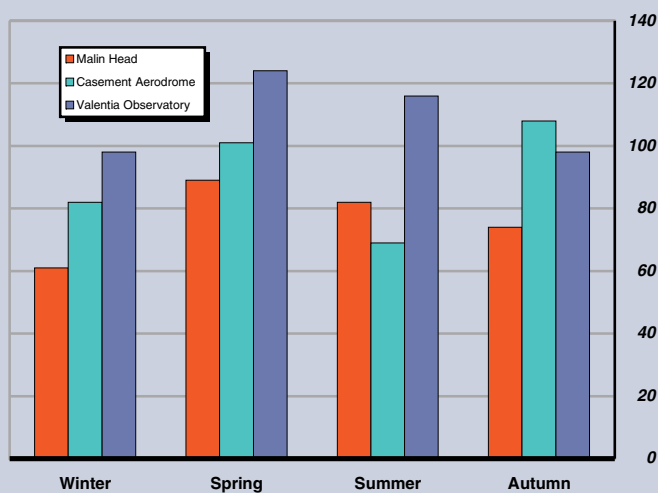


Table 18.14 Temperature, 2003

°C

| Station | Daily Mean | Difference from average ¹ | Extremes | |
|----------------------|------------|--------------------------------------|----------|--------|
| | | | Highest | Lowest |
| Shannon Airport | 11.5 | 1.3 | 29.0 | -4.5 |
| Cork Airport | 10.2 | 0.7 | 25.2 | -1.9 |
| Malin Head | 10.5 | 1.1 | 25.4 | -2.9 |
| Dublin Airport | 10.1 | n/a | 25.7 | -5.2 |
| Casement Aerodrome | 10.4 | 1.1 | 27.4 | -4.9 |
| Valentia Observatory | 11.4 | 0.9 | 26.0 | -3.5 |
| Kilkenny | 10.3 | 0.9 | 29.0 | -4.7 |
| Belmullet | 10.9 | 1.2 | 27.7 | -2.5 |
| Connacht Airport | 9.1 | n/a | 27.9 | -3.3 |
| Clones | 9.9 | 1.0 | 28.3 | -6.0 |
| Birr | 10.3 | 0.9 | 28.5 | -5.3 |
| Mullingar | 9.8 | 0.9 | 29.1 | -5.7 |
| Rosslare | 11.3 | 1.2 | 24.9 | -0.5 |

¹ 30 year average 1961-1990
Source: Met Eireann

TABLE 18.14

Difference from normal mean temperature, 2003

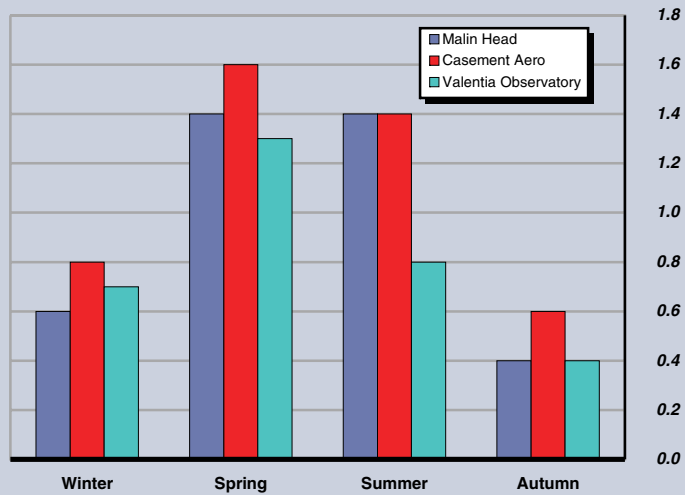


Table 18.15 Sunshine, 2003

| Station | Daily Mean | % of average ¹ | Most in a day | |
|----------------------|--------------|---------------------------|---------------|-----------|
| | | | Amount | Date |
| | <i>hours</i> | | <i>hours</i> | |
| Shannon Airport | 4.04 | 111 | 14.0 | 14 August |
| Cork Airport | 4.30 | 114 | 13.8 | 14 August |
| Malin Head | 3.93 | 111 | 16.0 | 29 June |
| Dublin Airport | 4.42 | 113 | 13.6 | 14 June |
| Casement Aerodrome | 4.31 | 117 | 14.4 | 14 June |
| Valentia Observatory | 3.94 | 117 | 14.8 | 25 June |
| Kilkenny | 4.42 | 126 | 13.8 | 14 June |
| Belmullet | 3.94 | 113 | 15.1 | 25 June |
| Connacht Airport | 4.93 | n/a | 14.2 | 07 August |
| Clones | 3.90 | 123 | 12.2 | 17 April |
| Birr | 3.90 | 118 | 14.1 | 14 June |
| Mullingar | 4.35 | 125 | 13.4 | 08 August |
| Rosslare | 5.18 | 120 | 15.5 | 24 June |

¹ 30 year average 1961-1990
Source: Met Éireann

Percentage of normal sunshine, 2003

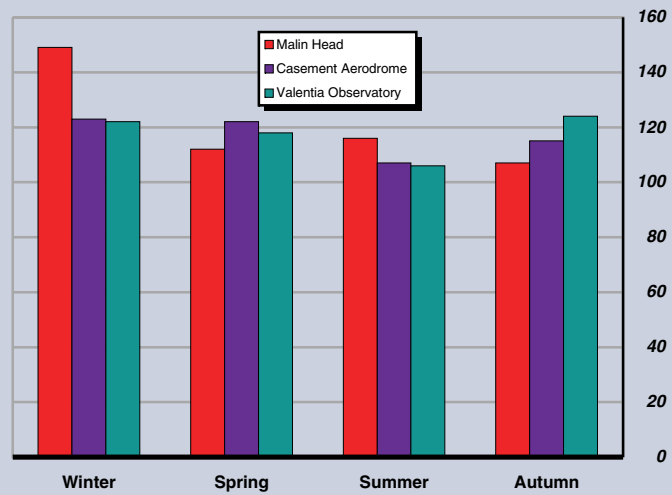


TABLE 18.15

Table 18.16 Number of days in 2003 with various weather conditions

| Station | Number of days | | | | | | |
|----------------------|----------------|------|-----------|------|---------|-----|------------|
| | Rain | Snow | Air frost | Hail | Thunder | Fog | Gale gusts |
| Shannon Airport | 187 | 3 | 15 | 9 | 1 | 30 | 42 |
| Cork Airport | 200 | 4 | 9 | 5 | 2 | 97 | 63 |
| Malin Head | 226 | 5 | 3 | 36 | 7 | 9 | 170 |
| Dublin Airport | 173 | 6 | 35 | 8 | 8 | 40 | 66 |
| Casement Aerodrome | 163 | 8 | 42 | 10 | 9 | 26 | 59 |
| Valentia Observatory | 241 | 0 | 9 | 14 | 3 | 5 | 71 |
| Kilkenny | 182 | n/a | 58 | n/a | n/a | n/a | 25 |
| Belmullet | 238 | 5 | 14 | 41 | 8 | 8 | 137 |
| Connacht Airport | 248 | 13 | 29 | 8 | 2 | 133 | 64 |
| Clones | 201 | n/a | 43 | n/a | n/a | n/a | 33 |
| Birr | 190 | n/a | 41 | n/a | n/a | n/a | 26 |
| Mullingar | 198 | n/a | 47 | n/a | n/a | n/a | 14 |
| Rosslare | 162 | 1 | 3 | 9 | 6 | 33 | 104 |

Averages¹

| Station | Number of days | | | | | | |
|----------------------|----------------|------|-----------|------|---------|------|------------|
| | Rain | Snow | Air frost | Hail | Thunder | Fog | Gale gusts |
| Shannon Airport | 214 | 2.0 | 25.4 | 21.7 | 6.3 | 31.8 | 90 |
| Cork Airport | 204 | 5.6 | 24.0 | 8.8 | 3.7 | 99.5 | 101 |
| Malin Head | 237 | 3.3 | 11.0 | 48.4 | 5.9 | 11.8 | 187 |
| Dublin Airport | 185 | 4.5 | 24.3 | 9.5 | 4.1 | 50.5 | 89 |
| Casement Aerodrome | 185 | 5.3 | 41.3 | 10.7 | 4.8 | 25.9 | 92 |
| Valentia Observatory | 239 | 0.8 | 13.9 | 25.5 | 7.1 | 8.9 | 135 |
| Kilkenny | 192 | 4.1 | 53.0 | 10.4 | 5.0 | 44.4 | 61 |
| Belmullet | 249 | 2.3 | 16.7 | 45.1 | 5.5 | 16.6 | 132 |
| Connacht Airport | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Clones | 218 | 10.8 | 46.1 | 15.5 | 5.7 | 46.8 | 88 |
| Birr | 204 | 6.6 | 45.7 | 8.7 | 5.2 | 29.9 | 71 |
| Mullingar | 214 | 8.4 | 50.0 | 12.1 | 5.3 | 52.6 | 76 |
| Rosslare | 176 | 1.8 | 8.0 | 11.8 | 6.7 | 38.5 | 122 |

¹ 30 year average 1961-1990
Source: Met Eireann

TABLE 18.16

Ireland's annual Temperature deviation from the 1961-90 average (9.65 °C) with 15 year smoothed average superimposed

