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## Section 6

# Geography and Environment

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This section presents a variety of information on the physical environment of the United States, starting with basic area measurement data and ending with climatic data for selected weather stations around the country. The subjects covered between those points are mostly concerned with environmental trends but include such related subjects as land use, water consumption, air pollutant emissions, toxic releases, oil spills, hazardous waste sites, municipal waste and recycling, threatened and endangered wildlife, and the environmental industry.

The information in this section is selected from a wide range of Federal agencies that compile the data for various administrative or regulatory purposes, such as the Environmental Protection Agency, U.S. Geological Survey, National Oceanic and Atmospheric Administration, Natural Resources Conservation Service, and General Services Administration.

**Area**—For the 1990 census, area measurements were calculated by computer based on the information contained in a single, consistent geographic database, the TIGER™ file (described below), rather than relying on historical, local, and manually calculated information. This especially affects water area figures reported in 1990; these had only included those bodies of water of least 40 acres and those streams with a width of at least one-eighth of a statute mile from 1940 to 1980. Water area figures for 1990 increased because the data reflected all water recorded in the Census Bureau's geographic database including coastal, Great Lakes, and territorial waters.

**Geography**—The U.S. Geological Survey conducts investigations, surveys, and research in the fields of geography, geology,

topography, geographic information systems, mineralogy, hydrology, and geothermal energy resources as well as natural hazards. The U.S. Geological Survey provides United States cartographic data through the Earth Sciences Information Center, water resources data through the National Water Data Exchange (NAWDEX), and a variety of research and Open-File reports which are announced monthly in *New Publications of the U.S. Geological Survey*.

In a joint project with the Census Bureau, the U.S. Geological Survey provided the basic information on geographic features for input into a national geographic and cartographic database prepared by the Census Bureau, called the TIGER™ (Topologically Integrated Geographic Encoding and Referencing) System. Maps prepared by the Census Bureau show the names and boundaries of various types of legal and statistical entities, such as places, county subdivisions, and larger areas and are available as of the specific decennial census. An inventory is available for the 1990 census, both on computer tape and CD-ROM as the *1990 TIGER/GICS (Geographic Identification Code Scheme)* and for the 1997 economic censuses in the *Geographic Reference Manual (EC97-R-1)*. The Census Bureau maintains a current inventory of governmental units and their legal boundaries through its Boundary and Annexation Survey. The TIGER™ System contains information on the legal and statistical entities used by the Census Bureau, as well as on both manmade and natural features, such as streets, roads, railroads, rivers, and lakes; information is available to the public in the form of machine-readable TIGER extract files.

An inventory of the Nation's land resources by type of use/cover was conducted by the National Resource Recovery Conservation

Service (formerly the Soil Conservation Service) every 5 years beginning in 1982. The most recent survey results, which were published in the 1997 National Resources Inventory, cover all non-Federal land in Puerto Rico, the Virgin Islands, and the United States except Alaska. Tables 382 and 383 provide some preliminary results from the survey.

**Environment**—The principal Federal agency responsible for pollution abatement and control activities is the Environmental Protection Agency (EPA). It is responsible for establishing and monitoring national air quality standards, water quality activities, solid and hazardous waste disposal, and control of toxic substances. Many of these series now appear on the EPA Web site at the Center for Environmental Information and Statistics and can be accessed at <http://www.epa.gov/ceis/>.

National Ambient Air Quality Standards (NAAQS) for suspended particulate matter, sulfur dioxide, photochemical oxidants, carbon monoxide, and nitrogen dioxide were originally set by the EPA in April 1971. Every 5 years, each of the NAAQS is reviewed and revised if new health or welfare data indicates that a change is necessary. The standard for photochemical oxidants, now called ozone, was revised in February 1979. Also, a new NAAQS for lead was promulgated in October 1978 and for suspended particulate matter in 1987. Table 392 gives some of the health-related standards for the six air pollutants having NAAQS. Data gathered from state networks are periodically submitted to EPA's National Aerometric Information Retrieval System (AIRS) for summarization in annual reports on the nationwide status and trends in air quality; for details, see *National Air Quality and Emissions Trends Report, 1998*.

The Toxics Release Inventory (TRI), published by the U.S. EPA, is a valuable source of information regarding toxic chemicals that are being used, manufactured, treated, transported, or released into the environment. Two rules, Section 313 of the Emergency Planning and Community

Right-To-Know Act (EPCRA) and Section 6607 of the Pollution Prevention Act (PPA), mandate that a publicly accessible toxic chemical database be developed and maintained by U.S. EPA. This database, known as the Toxics Release Inventory (TRI), contains information concerning waste management activities and the release of toxic chemicals by facilities that manufacture, process, or otherwise use said materials.

Data on the release of these chemicals are collected from manufacturing facilities and facilities added in 1998 that have the equivalent of 10 or more full-time employees and meet the established thresholds for manufacture, processing, or "otherwise use" of listed chemicals. Facilities must report their releases and other waste management quantities. Federal facilities have been required to report since 1994, regardless of industry classification. In May 1997, EPA added seven new industry sectors that reported to the TRI for the first time in July 1999 for the 1998 reporting year.

**Climate**—NOAA, through the National Weather Service and the National Environmental Satellite, Data, and Information Service, is responsible for data on climate. NOAA maintains about 11,600 weather stations, of which over 3,000 produce autographic precipitation records, about 600 take hourly readings of a series of weather elements, and the remainder record data once a day. These data are reported monthly in the *Climatological Data* and *Storm Data*, published monthly, and annually in the *Local Climatological Data* (published by location for major cities).

The normal climatological temperatures, precipitation, and degree days listed in this publication are derived for comparative purposes and are averages for the 30-year period, 1961-90. For stations that did not have continuous records for the entire 30 years from the same instrument site, the normals have been adjusted to provide representative values for the current location. The information in all other tables is based on data from the beginning of the record at that location through 1998, except as noted.

## No. 380. Land and Water Area of State and Other Area: 1990

[One square mile=2.59 square kilometers. Excludes territorial water, which was included in the 1993 edition of the *Statistical Abstract*]

State and other area	Total area		Land area		Water area				
	Sq. mi.	Sq. km.	Sq. mi.	Sq. km.	Total		Inland sq. mi.	Coastal sq. mi.	Great Lakes sq. mi.
					Sq. mi.	Sq. km.			
<b>United States . . . . .</b>	<b>3,717,796</b>	<b>9,629,091</b>	<b>3,536,278</b>	<b>9,158,960</b>	<b>181,518</b>	<b>470,131</b>	<b>78,937</b>	<b>42,528</b>	<b>60,052</b>
Alabama . . . . .	52,237	135,293	50,750	131,443	1,486	3,850	968	519	-
Alaska . . . . .	615,230	1,593,444	570,374	1,477,268	44,856	116,177	17,501	27,355	-
Arizona . . . . .	114,006	295,276	113,642	294,333	364	943	364	-	-
Arkansas . . . . .	53,182	137,742	52,075	134,875	1,107	2,867	1,107	-	-
California . . . . .	158,869	411,470	155,973	403,971	2,895	7,499	2,674	222	-
Colorado . . . . .	104,100	269,618	103,729	268,658	371	960	371	-	-
Connecticut . . . . .	5,544	14,358	4,845	12,550	698	1,808	161	538	-
Delaware . . . . .	2,396	6,206	1,955	5,062	442	1,144	71	371	-
District of Columbia . . . . .	68	177	61	159	7	18	-	-	-
Florida . . . . .	59,928	155,214	53,937	139,697	5,991	15,517	4,683	1,308	-
Georgia . . . . .	58,977	152,750	57,919	150,010	1,058	2,740	1,011	47	-
Hawaii . . . . .	6,459	16,729	6,423	16,636	36	93	36	-	-
Idaho . . . . .	83,574	216,456	82,751	214,325	823	2,131	823	-	-
Illinois . . . . .	57,918	150,007	55,593	143,967	2,325	6,021	750	-	1,575
Indiana . . . . .	36,420	94,328	35,870	92,904	550	1,424	315	-	235
Iowa . . . . .	56,276	145,574	55,875	144,716	401	1,038	401	-	-
Kansas . . . . .	82,282	213,110	81,823	211,922	459	1,189	459	-	-
Kentucky . . . . .	40,411	104,665	39,732	102,907	679	1,759	679	-	-
Louisiana . . . . .	49,651	128,595	43,566	112,836	6,085	15,759	4,153	1,931	-
Maine . . . . .	33,741	87,388	30,865	79,939	2,876	7,449	2,263	613	-
Maryland . . . . .	12,297	31,849	9,775	25,316	2,522	6,533	680	1,842	-
Massachusetts . . . . .	9,241	23,934	7,838	20,300	1,403	3,634	424	979	-
Michigan . . . . .	96,705	250,465	56,809	147,136	39,895	103,329	1,704	-	38,192
Minnesota . . . . .	86,943	225,182	79,617	206,207	7,326	18,975	4,780	-	2,546
Mississippi . . . . .	48,286	125,060	46,914	121,506	1,372	3,553	781	591	-
Missouri . . . . .	69,709	180,546	68,898	178,446	811	2,100	811	-	-
Montana . . . . .	147,046	380,849	145,556	376,991	1,490	3,859	1,490	-	-
Nebraska . . . . .	77,358	200,358	76,878	199,113	481	1,245	481	-	-
Nevada . . . . .	110,567	286,367	109,806	284,396	761	1,971	761	-	-
New Hampshire . . . . .	9,283	24,044	8,969	23,231	314	813	314	-	-
New Jersey . . . . .	8,215	21,277	7,419	19,215	796	2,062	371	425	-
New Mexico . . . . .	121,598	314,939	121,364	314,334	234	605	234	-	-
New York . . . . .	53,989	139,833	47,224	122,310	6,766	17,523	1,888	976	3,901
North Carolina . . . . .	52,672	136,421	48,718	126,180	3,954	10,241	3,954	-	-
North Dakota . . . . .	70,704	183,123	68,994	178,695	1,710	4,428	1,710	-	-
Ohio . . . . .	44,828	116,103	40,953	106,067	3,875	10,036	376	-	3,499
Oklahoma . . . . .	69,903	181,048	68,679	177,877	1,224	3,171	1,224	-	-
Oregon . . . . .	97,132	251,571	96,002	248,646	1,129	2,925	1,050	80	-
Pennsylvania . . . . .	46,058	119,291	44,820	116,083	1,239	3,208	490	-	749
Rhode Island . . . . .	1,231	3,189	1,045	2,707	186	482	168	18	-
South Carolina . . . . .	31,189	80,779	30,111	77,988	1,078	2,791	1,006	72	-
South Dakota . . . . .	77,121	199,744	75,896	196,571	1,225	3,174	1,225	-	-
Tennessee . . . . .	42,146	109,158	41,219	106,758	926	2,400	926	-	-
Texas . . . . .	267,277	692,248	261,914	678,358	5,363	13,890	4,959	404	-
Utah . . . . .	84,904	219,902	82,168	212,815	2,736	7,086	2,736	-	-
Vermont . . . . .	9,615	24,903	9,249	23,956	366	947	366	-	-
Virginia . . . . .	42,326	109,625	39,598	102,558	2,729	7,067	1,000	1,728	-
Washington . . . . .	70,637	182,949	66,581	172,445	4,055	10,503	1,545	2,511	-
West Virginia . . . . .	24,231	62,759	24,087	62,384	145	375	145	-	-
Wisconsin . . . . .	65,499	169,643	54,314	140,672	11,186	28,971	1,831	-	9,355
Wyoming . . . . .	97,818	253,349	97,105	251,501	714	1,848	714	-	-
Other area:									
Puerto Rico . . . . .	3,508	9,085	3,427	8,875	81	210	65	16	-
American Samoa . . . . .	90	233	77	200	13	33	7	6	-
Guam . . . . .	217	561	210	543	7	18	7	-	-
No. Mariana Islands . . . . .	189	490	179	464	10	26	2	8	-
Palau . . . . .	241	624	177	458	64	165	40	24	-
Virgin Islands . . . . .									
of the U.S . . . . .	171	443	134	346	37	96	17	20	-

- Represents or rounds to zero.

Source: U.S. Census Bureau, *1990 Census of Population and Housing*, Series CPH-2; and unpublished data from the TIGER/Geographic Information Control System (TIGER/GICS) computer file. Corrections have been made subsequent to the 1990 Census reports.

## No. 381. Total and Federally Owned Land by State: 1997

[As of end of fiscal year; see text, Section 9. Total land area figures are not comparable with those in Table 393]

State	Total (1,000 acres)	Not owned by Federal Government		Owned by Federal Government <sup>1</sup>		State	Total (1,000 acres)	Not owned by Federal Government		Owned by Federal Government <sup>1</sup>	
		Total (1,000 acres)	Acres (1,000)	Per- cent	Total (1,000 acres)			Acres (1,000)	Per- cent		
<b>United States . . . . .</b>	<b>2,271,343</b>	<b>1,616,458</b>	<b>654,885</b>	<b>28.8</b>		Missouri . . . . .	44,248	42,111	2,137	4.8	
Alabama . . . . .	32,678	31,569	1,110	3.4	Montana . . . . .	93,271	67,135	26,136	28.0		
Alaska . . . . .	365,482	117,195	248,287	67.9	Nebraska . . . . .	49,032	48,293	738	1.5		
Arizona . . . . .	72,688	39,558	33,130	45.6	Nevada . . . . .	70,264	11,889	58,375	83.1		
Arkansas . . . . .	33,599	30,174	3,260	10.2	New Hampshire . . . . .	5,769	5,010	759	13.2		
California . . . . .	100,207	55,179	45,027	44.9	New Jersey . . . . .	4,813	4,648	166	3.4		
Colorado . . . . .	66,486	42,262	24,224	36.4	New Mexico . . . . .	77,766	51,172	26,594	34.2		
Connecticut . . . . .	3,135	3,120	15	0.5	New York . . . . .	30,681	30,559	122	0.4		
Delaware . . . . .	1,266	1,239	27	2.1	North Carolina . . . . .	31,403	28,894	2,508	8.0		
District of Columbia . . . . .	39	30	9	23.4	North Dakota . . . . .	44,452	42,603	1,850	4.2		
Florida . . . . .	34,721	31,832	2,889	8.3	Ohio . . . . .	26,222	25,825	397	1.5		
Georgia . . . . .	37,295	35,215	2,080	5.6	Oklahoma . . . . .	44,088	42,807	1,281	2.9		
Hawaii . . . . .	4,106	3,500	605	14.7	Oregon . . . . .	61,599	29,167	32,431	52.6		
Idaho . . . . .	52,933	19,860	33,073	62.5	Pennsylvania . . . . .	28,804	28,127	678	2.4		
Illinois . . . . .	35,795	35,167	628	1.8	Rhode Island . . . . .	677	673	4	0.6		
Indiana . . . . .	23,158	22,648	510	2.2	South Carolina . . . . .	19,374	18,186	1,188	6.1		
Iowa . . . . .	35,860	35,626	234	0.7	South Dakota . . . . .	48,882	46,128	2,754	5.6		
Kansas . . . . .	52,511	51,846	665	1.3	Tennessee . . . . .	26,728	25,084	1,643	6.1		
Kentucky . . . . .	25,512	24,277	1,236	4.8	Texas . . . . .	168,218	165,413	2,804	1.7		
Louisiana . . . . .	28,868	27,583	1,285	4.5	Utah . . . . .	52,697	18,691	34,006	64.5		
Maine . . . . .	19,848	19,656	192	1.0	Vermont . . . . .	5,937	5,560	376	6.3		
Maryland . . . . .	6,319	6,120	199	3.2	Virginia . . . . .	25,496	23,197	2,299	9.0		
Massachusetts . . . . .	5,035	4,957	78	1.6	Washington . . . . .	42,694	30,507	12,186	28.5		
Michigan . . . . .	36,492	32,405	4,087	11.2	West Virginia . . . . .	15,411	14,233	1,178	7.6		
Minnesota . . . . .	51,206	46,768	4,437	8.7	Wisconsin . . . . .	35,011	33,054	1,957	5.6		
Mississippi . . . . .	30,223	28,449	1,774	5.9	Wyoming . . . . .	62,343	31,255	31,088	49.9		

<sup>1</sup> Excludes trust properties.

Source: U.S. General Services Administration, *Summary Report on Real Property Owned by the United States Throughout the World*, annual.

## No. 382. Urban and Built-Up Land Use by State and Other Area: 1997

State and other area	Urban land				State and other area	Urban land			
	Total land	Total	Percent of total	Change, 1992-97		Total land	Total	Percent of total	Change, 1992-97
<b>Total . . . . .</b>	<b>1,944,135</b>	<b>80,781</b>	<b>4.2</b>	<b>15,428</b>	Montana . . . . .	94,110	409	0.4	116
<b>United States . . . . .</b>	<b>1,941,827</b>	<b>80,276</b>	<b>4.1</b>	<b>15,286</b>	Nebraska . . . . .	49,510	557	1.1	67
Alabama . . . . .	33,424	1,823	5.5	424	Nevada . . . . .	70,763	325	0.5	37
Arizona . . . . .	72,964	1,246	1.7	181	New Hampshire . . . . .	5,941	549	9.2	104
Arkansas . . . . .	34,037	996	2.9	226	New Jersey . . . . .	5,216	1,803	34.6	282
California . . . . .	101,510	4,952	4.9	685	New Mexico . . . . .	77,823	793	1.0	337
Colorado . . . . .	66,625	1,182	1.8	115	New York . . . . .	31,361	2,919	9.3	485
Connecticut . . . . .	3,195	823	25.8	61	North Carolina . . . . .	33,709	3,556	10.5	755
Delaware . . . . .	1,534	213	13.9	34	North Dakota . . . . .	45,251	271	0.6	37
Florida . . . . .	37,534	4,867	13.0	925	Ohio . . . . .	26,445	3,431	13.0	519
Georgia . . . . .	37,741	3,534	9.4	1,051	Oklahoma . . . . .	44,738	1,290	2.9	214
Hawaii . . . . .	4,163	159	3.8	9	Oregon . . . . .	62,161	886	1.4	142
Idaho . . . . .	53,488	445	0.8	109	Pennsylvania . . . . .	28,995	3,901	13.5	1,103
Illinois . . . . .	36,059	2,544	7.1	288	Rhode Island . . . . .	813	187	22.9	10
Indiana . . . . .	23,158	1,846	8.0	269	South Carolina . . . . .	19,939	1,880	9.4	533
Iowa . . . . .	36,017	839	2.3	91	South Dakota . . . . .	49,358	366	0.7	71
Kansas . . . . .	52,661	1,070	2.0	167	Tennessee . . . . .	26,974	2,182	8.1	597
Kentucky . . . . .	25,863	1,418	5.5	341	Texas . . . . .	171,052	7,126	4.2	1,146
Louisiana . . . . .	31,377	1,339	4.3	155	Utah . . . . .	54,339	505	0.9	99
Maine . . . . .	20,966	582	2.8	164	Vermont . . . . .	6,154	241	3.9	25
Maryland . . . . .	7,870	1,189	15.1	219	Virginia . . . . .	27,087	2,302	8.5	464
Massachusetts . . . . .	5,339	1,463	27.4	281	Washington . . . . .	44,035	1,686	3.8	328
Michigan . . . . .	37,349	3,360	9.0	549	West Virginia . . . . .	15,508	745	4.8	266
Minnesota . . . . .	54,010	1,535	2.8	300	Wisconsin . . . . .	35,920	1,844	5.1	271
Mississippi . . . . .	30,527	1,094	3.6	298	Wyoming . . . . .	62,603	261	0.4	42
Missouri . . . . .	44,614	1,743	3.9	297	Caribbean . . . . .	2,307	505	21.9	142

Source: U.S. Department of Agriculture, National Resource and Conservation Service, and Iowa State University, *Statistical Laboratory, 1997 National Resources Inventory*, issued December 1999.

## No. 383. Land Cover/Use by State: 1997

[Preliminary. In thousands of acres. Excludes Alaska and District of Columbia]

State	Non-Federal land								
	Total surface area <sup>1</sup>	Rural							Other rural land
		Total	Developed <sup>2</sup>	Total <sup>3</sup>	Crop-land	Pasture land	Range-land	Forest land	
<b>Total . . . . .</b>	<b>1,944,135</b>	<b>1,491,080</b>	<b>105,369</b>	<b>1,385,711</b>	<b>375,044</b>	<b>119,573</b>	<b>403,114</b>	<b>399,031</b>	<b>56,253</b>
United States . . . . .	1,941,827	1,488,914	104,812	1,384,102	374,690	119,144	402,976	398,409	56,188
Alabama . . . . .	33,424	31,184	2,410	28,775	2,919	3,527	68	21,073	666
Arizona . . . . .	72,964	42,330	1,675	40,654	1,204	67	32,114	4,262	3,007
Arkansas . . . . .	34,037	30,040	1,501	28,539	7,582	5,453	73	14,765	436
California . . . . .	101,510	52,926	5,687	47,238	9,561	1,065	17,457	14,295	4,687
Colorado . . . . .	66,625	42,480	1,706	40,775	8,860	1,269	23,855	3,729	1,172
Connecticut . . . . .	3,195	3,052	897	2,155	199	107	-	1,729	120
Delaware . . . . .	1,534	1,213	238	975	472	23	-	347	134
Florida . . . . .	37,534	30,596	5,449	25,147	2,719	4,177	3,193	12,255	2,684
Georgia . . . . .	37,741	34,564	4,238	30,326	4,661	2,853	-	21,216	999
Hawaii . . . . .	4,163	3,717	186	3,531	244	89	946	1,514	738
Idaho . . . . .	53,488	19,368	811	18,557	5,500	1,253	6,478	3,942	600
Illinois . . . . .	36,059	34,807	3,262	31,546	23,954	2,525	-	3,631	710
Indiana . . . . .	23,158	22,300	2,356	19,944	13,358	1,818	-	3,638	753
Iowa . . . . .	36,017	35,354	1,803	33,551	25,262	3,554	-	2,084	912
Kansas . . . . .	52,661	51,597	2,882	48,715	26,460	2,213	15,179	1,290	724
Kentucky . . . . .	25,863	24,048	1,955	22,092	5,151	5,613	-	10,440	557
Louisiana . . . . .	31,377	26,314	1,693	24,622	5,568	2,376	280	13,114	3,143
Maine . . . . .	20,966	19,509	747	18,762	419	82	-	17,633	599
Maryland . . . . .	7,870	6,038	1,291	4,747	1,598	454	-	2,331	346
Massachusetts . . . . .	5,339	4,862	1,549	3,313	271	114	-	2,657	271
Michigan . . . . .	37,349	32,964	3,764	29,200	8,439	2,004	-	16,238	2,198
Minnesota . . . . .	54,010	47,526	2,361	45,165	21,328	3,423	-	14,830	4,042
Mississippi . . . . .	30,527	27,895	1,656	26,239	5,296	3,699	-	16,019	428
Missouri . . . . .	44,614	41,848	2,653	39,195	13,710	10,947	98	12,118	716
Montana . . . . .	94,110	65,960	881	65,078	15,086	3,495	37,016	5,279	1,481
Nebraska . . . . .	49,510	48,371	1,268	47,103	19,421	1,976	22,864	799	799
Nevada . . . . .	70,763	10,448	416	10,032	711	271	8,300	297	452
New Hampshire . . . . .	5,941	4,941	642	4,300	132	92	-	3,875	202
New Jersey . . . . .	5,216	4,537	1,849	2,688	574	109	-	1,625	381
New Mexico . . . . .	77,823	51,220	1,325	49,896	1,842	207	40,276	4,915	2,189
New York . . . . .	31,361	29,866	3,373	26,493	5,375	2,627	-	17,533	904
North Carolina . . . . .	33,709	28,425	4,181	24,244	5,539	1,980	-	15,678	917
North Dakota . . . . .	45,251	42,417	1,152	41,264	24,991	1,105	10,551	443	1,373
Ohio . . . . .	26,445	25,664	3,797	21,867	11,504	1,980	-	6,984	1,077
Oklahoma . . . . .	44,738	42,508	1,997	40,511	9,709	7,933	13,974	7,254	504
Oregon . . . . .	62,161	30,073	1,296	28,777	3,800	1,905	9,556	12,295	739
Pennsylvania . . . . .	28,995	27,791	4,336	23,456	5,245	1,812	-	15,306	1,003
Rhode Island . . . . .	813	659	205	454	20	24	-	381	29
South Carolina . . . . .	19,939	18,082	2,325	15,757	2,542	1,182	-	10,958	813
South Dakota . . . . .	49,358	45,367	1,035	44,332	16,738	2,078	21,764	532	1,535
Tennessee . . . . .	26,974	24,954	2,618	22,336	4,566	4,985	-	11,736	674
Texas . . . . .	171,052	163,990	8,984	155,006	26,762	15,807	95,323	10,627	2,581
Utah . . . . .	54,339	18,260	760	17,499	1,676	695	10,720	1,830	2,362
Vermont . . . . .	6,154	5,495	346	5,149	601	342	-	4,118	87
Virginia . . . . .	27,087	22,483	2,805	19,678	2,879	3,071	-	13,030	628
Washington . . . . .	44,035	30,557	2,214	28,344	6,689	1,200	5,744	12,666	1,028
West Virginia . . . . .	15,508	14,123	986	13,137	848	1,503	-	10,472	314
Wisconsin . . . . .	35,920	32,778	2,543	30,234	10,537	2,882	-	13,634	2,519
Wyoming . . . . .	62,603	33,419	716	32,704	2,171	1,181	27,150	995	960
Caribbean . . . . .	2,307	2,166	557	1,609	355	429	138	622	65

- Represents or rounds to zero. <sup>1</sup> Includes water area not shown separately. <sup>2</sup> Includes urban and built-up areas in units of 10 acres or greater and rural transportation. <sup>3</sup> Includes Conservation Reserve Program land and minor cover/use categories, not shown separately.

Source: U.S. Dept. of Agriculture, National Resource and Conservation Service, and Iowa State University, Statistical Laboratory; *Summary Report, 1997 National Resources Inventory*, issued December 1999.

## No. 384. Extreme and Mean Elevations by State and Other Area

[One foot=.305 meter]

State and other area	Highest point			Lowest point			Approximate mean elevation	
	Name	Elevation		Name	Elevation		Feet	Meters
		Feet	Meters		Feet	Meters		
<b>U.S. . . . .</b>	<b>Mt. McKinley (AK) . . . . .</b>	<b>20,320</b>	<b>6,198</b>	<b>Death Valley (CA). . . . .</b>	<b>-282</b>	<b>-86</b>	<b>2,500</b>	<b>763</b>
AL . . . . .	Cheaha Mountain . . . . .	2,405	733	Gulf of Mexico . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	500	153
AK . . . . .	Mount McKinley . . . . .	20,320	6,198	Pacific Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	1,900	580
AZ . . . . .	Humphreys Peak . . . . .	12,633	3,853	Colorado River . . . . .	70	21	4,100	1,251
AR . . . . .	Magazine Mountain . . . . .	2,753	840	Quachita River . . . . .	55	17	650	198
CA . . . . .	Mount Whitney . . . . .	14,494	4,419	Death Valley . . . . .	-282	-86	2,900	885
CO . . . . .	Mt. Elbert . . . . .	14,433	4,402	Arkansas River . . . . .	3,350	1,022	6,800	2,074
CT . . . . .	Mt. Frissell on South slope	2,380	726	Long Island Sound . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	500	153
DE . . . . .	Ebright Road, <sup>2</sup> New Castle County . . . . .	448	137	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	60	18
DC . . . . .	Tenleytown at Reno Reservoir . . . . .	410	125	Potomac River . . . . .	1	(Z)	150	46
FL . . . . .	Sec. 30, T6N, R20W, Walton County . . . . .	345	105	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	100	31
GA . . . . .	Brasstown Bald . . . . .	4,784	1,459	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	600	183
HI . . . . .	Puu Wekiu . . . . .	13,796	4,208	Pacific Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	3,030	924
ID . . . . .	Borah Peak . . . . .	12,662	3,862	Snake River . . . . .	710	217	5,000	1,525
IL . . . . .	Charles Mound . . . . .	1,235	377	Mississippi River . . . . .	279	85	600	183
IN . . . . .	Franklin Twp., Wayne Co Sec. 29, T100N, R41W, Osceola County <sup>3</sup> . . . . .	1,257	383	Ohio River . . . . .	320	98	700	214
IA . . . . .	Osceola County <sup>3</sup> . . . . .	1,670	509	Mississippi River . . . . .	480	146	1,100	336
KS . . . . .	Mount Sunflower . . . . .	4,039	1,232	Verdigris River . . . . .	679	207	2,000	610
KY . . . . .	Black Mountain . . . . .	4,139	2,162	Mississippi River . . . . .	257	78	750	229
LA . . . . .	Driskill Mountain . . . . .	535	163	New Orleans . . . . .	-8	-2	100	31
ME . . . . .	Mount Katahdin . . . . .	5,267	1,606	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	600	183
MD . . . . .	Backbone Mountain . . . . .	3,360	1,025	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	350	107
MA . . . . .	Mount Greylock . . . . .	3,487	1,064	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	500	153
MI . . . . .	Mount Arvon . . . . .	1,979	604	Lake Erie . . . . .	571	174	900	275
MN . . . . .	Eagle Mountain, Cook Co Woodall Mountain . . . . .	2,301	702	Lake Superior . . . . .	600	183	1,200	366
MS . . . . .	Woodall Mountain . . . . .	806	246	Gulf of Mexico . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	300	92
MO . . . . .	Taum Sauk Mountain . . . . .	1,772	540	St. Francis River . . . . .	230	70	800	244
MT . . . . .	Granite Peak . . . . .	12,799	3,904	Kootenai River . . . . .	1,800	549	3,400	1,037
NE . . . . .	Johnson Twp., Kimball Co Boundary Peak . . . . .	5,424	1,654	Missouri River . . . . .	840	256	2,600	793
NV . . . . .	Boundary Peak . . . . .	13,140	4,007	Colorado River . . . . .	479	146	5,500	1,678
NH . . . . .	Mount Washington . . . . .	6,288	1,918	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	1,000	305
NJ . . . . .	High Point . . . . .	1,803	550	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	250	76
NM . . . . .	Wheeler Peak . . . . .	13,161	4,014	Red Bluff Reservoir . . . . .	2,842	867	5,700	1,739
NY . . . . .	Mount Marcy . . . . .	5,344	1,630	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	1,000	305
NC . . . . .	Mount Mitchell . . . . .	6,684	2,039	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	700	214
ND . . . . .	White Butte, Slope Co Campbell Hill . . . . .	3,506	1,069	Red River . . . . .	750	229	1,900	580
OH . . . . .	Campbell Hill . . . . .	1,549	472	Ohio River . . . . .	455	139	850	259
OK . . . . .	Black Mesa . . . . .	4,973	1,517	Little River . . . . .	289	88	1,300	397
OR . . . . .	Mount Hood . . . . .	11,239	3,428	Pacific Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	3,300	1,007
PA . . . . .	Mount Davis . . . . .	3,213	980	Delaware River . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	1,100	336
RI . . . . .	Jerimoth Hill . . . . .	812	248	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	200	61
SC . . . . .	Sassafras Mountain . . . . .	3,560	1,086	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	350	107
SD . . . . .	Harney Peak . . . . .	7,242	2,209	Big Stone Lake . . . . .	966	295	2,200	671
TN . . . . .	Clingmans Dome . . . . .	6,643	2,026	Mississippi River . . . . .	178	54	900	275
TX . . . . .	Guadalupe Peak . . . . .	8,749	2,668	Gulf of Mexico . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	1,700	519
UT . . . . .	Kings Peak . . . . .	13,528	4,126	Beaverdam Wash . . . . .	2,000	610	6,100	1,861
VT . . . . .	Mount Mansfield . . . . .	4,393	1,340	Lake Champlain . . . . .	95	29	1,000	305
VA . . . . .	Mount Rogers . . . . .	5,729	1,747	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	950	290
WA . . . . .	Mount Rainier . . . . .	14,410	4,395	Pacific Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	1,700	519
WV . . . . .	Spruce Knob . . . . .	4,861	1,483	Potomac River . . . . .	240	73	1,500	458
WI . . . . .	Timms Hill . . . . .	1,951	595	Lake Michigan . . . . .	579	177	1,050	320
WY . . . . .	Gannett Peak . . . . .	13,804	4,210	Belle Fourche River . . . . .	3,099	945	6,700	2,044
Other areas:								
Puerto Rico . . . . .	Cerro de Punta . . . . .	4,390	1,339	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	1,800	549
American Samoa . . . . .	Lata Mountain . . . . .	3,160	964	Pacific Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	1,300	397
Guam . . . . .	Mount Lamlam . . . . .	1,332	406	Pacific Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	330	101
Virgin Is. . . . .	Crown Mountain . . . . .	1,556	475	Atlantic Ocean . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	750	229

Z Less than 0.5 meter. <sup>1</sup> Sea level. <sup>2</sup> At DE-PA state line. <sup>3</sup> "Sec." denotes section; "T," township; "R," range; "N," north; and "W," west.

Source: U.S. Geological Survey, for highest and lowest points, *Elevations and Distances in the United States, 1990*; for mean elevations, 1983 edition.

## No. 385. Water Areas for Selected Major Bodies of Water: 1990

[Includes only that portion of body of water under the jurisdiction of the United States, excluding Hawaii. One square mile=2.59 square kilometers]

Body of water and state	Area		Body of water and state	Area	
	Sq. mi.	Sq. km.		Sq. mi.	Sq. km.
<b>Atlantic Coast water bodies:</b>					
Chesapeake Bay (MD-VA)	2,747	7,115	Leech Lake (MN)	162	419
Pamlico Sound (NC)	1,622	4,200	Lake St. Clair (MI) <sup>1</sup>	161	416
Long Island Sound (CT-NY)	914	2,368	Eufaula Lake (OK)	157	407
Delaware Bay (DE-NJ)	614	1,591	Sam Rayburn Reservoir (TX)	150	389
Cape Cod Bay (MA)	598	1,548	Goose Lake (CA-OR)	147	381
Albermarle Sound (NC)	492	1,274	Utah Lake (UT)	139	361
Biscayne Bay (FL)	218	565	Lake Marion (SC)	139	360
Buzzards Bay (MA)	215	558	Lake Francis Case (SD)	134	346
Tangier Sound (MD-VA)	172	445	Lake Pend Oreille (ID)	133	343
Currituck Sound (NC)	116	301	Lake Texoma (OK-TX)	132	342
Pocomoke Sound (MD-VA)	111	286	Yellowstone Lake (WY)	131	339
Chincoteague Bay (MD-VA)	105	272	Livingston Reservoir (TX)	127	330
Great South Bay (NY)	94	243	Franklin D. Roosevelt Lake (WA)	124	322
Core Sound (NC)	88	229	Mooshead Lake (ME)	116	301
<b>Gulf Coast water bodies:</b>					
Mississippi Sound (AL-LA-MS)	813	2,105	Clark Hill Lake (GA-SC)	105	272
Laguna Madre (TX)	733	1,897	Lake Mauricepas (LA)	91	235
Lake Pontchartrain (LA)	631	1,635	Lake Moultrie (SC)	89	230
Florida Bay (FL)	616	1,596	Lake Winnibigoshish (MN)	87	225
Breton Sound (LA)	511	1,323	Hartwell Lake (GA-SC)	86	224
Mobile Bay (AL)	310	802	Upper Klamath Lake (OR)	85	221
Lake Borgne (LA-MS)	271	702	Harry S. Truman Reservoir (MO)	84	217
Matagorda Bay (TX)	253	656	Oneida Lake (NY)	80	207
Atchafalaya Bay (LA)	245	635	Malheur Lake (OR)	75	195
Galveston Bay (TX)	236	611	<b>Alaska water bodies:</b>		
Tampa Bay (FL)	212	549	Chatham Strait	1,559	4,039
Vermilion Bay (LA)	189	489	Prince William Sound	1,382	3,579
Corpus Christi Bay (TX)	151	392	Clarence Strait	1,199	3,107
West Cote Blanche Bay (LA)	146	378	Iliamna Lake	1,022	2,646
Trinity Bay (TX)	129	335	Frederick Sound	792	2,051
Choctawhatchee Bay (FL)	122	315	Sumner Strait	791	2,048
San Antonio Bay (TX)	118	306	Stephens Passage	702	1,819
Timbalier Bay (LA)	112	291	Kvichak Bay	640	1,659
Charlotte Harbor (FL)	112	291	Montague Strait	463	1,198
Aransas Bay (TX)	104	268	Becharof Lake	447	1,158
Apalachicola Bay (FL)	101	262	Icy Strait	436	1,130
Terrebonne Bay (LA)	99	256	Hotham Inlet	433	1,120
East Cote Blanche Bay (LA)	94	243	Selawik Lake	403	1,044
St. George Sound (FL)	93	240	Nushagak Bay	393	1,018
Sabine Lake (LA-TX)	89	229	Baird Inlet	348	902
White Lake (LA)	85	221	Yakutat Bay	345	894
Old Tampa Bay (FL)	83	214	Teshkeput Lake	324	839
Bon Secour Bay (AL)	79	204	Behm Canal	324	839
Pine Island Sound (FL)	75	194	Turnagain Arm	322	834
<b>Pacific Coast water bodies:</b>					
Puget Sound (WA)	808	2,092	Kachemak Bay	310	803
San Francisco Bay (CA)	264	684	Glacier Bay	310	803
Willapa Bay (WA)	125	325	Stefansson Sound	301	780
Hood Canal (WA)	117	303	Revigaligeddo Channel	295	764
<b>Interior water bodies:</b>					
Lake Michigan (IL-IN-MI-WI)	22,342	57,866	Kasegaluk Lagoon	293	759
Lake Superior (MI-MN-WI)	20,557	53,243	Cordova Bay	241	623
Lake Huron (MI) <sup>1</sup>	8,800	22,792	Sitka Sound	229	593
Lake Erie (MI-NY-OH-PA) <sup>1</sup>	5,033	13,036	Naknek Lake	225	582
Lake Ontario (NY) <sup>1</sup>	3,446	8,926	Eschscholtz Bay	210	543
Great Salt Lake (UT)	1,836	4,756	Stepovak Bay	206	534
Green Bay (MI-WI)	1,396	3,617	Keku Strait	206	534
Lake Okeechobee (FL)	663	1,717	Port Clarence	187	486
Lake Sakakawea (ND)	563	1,459	Orca Bay	184	476
Lake Oahe (ND-SD)	538	1,394	Knik Arm	169	437
Lake of the Woods (MN)	462	1,196	Dall Lake	167	433
Lake Champlain (NY-VT) <sup>1</sup>	414	1,072	Knight Island Passage	167	432
Fort Peck Lake (MT)	379	981	Scammon Bay	163	423
Salton Sea (CA)	364	944	Port Moller	159	412
Toledo Bend Reservoir (LA-TX)	268	694	Ernest Sound	158	410
Lower Red Lake (MN)	257	666	Spafarieff Bay	157	405
Lake Powell (AZ-UT)	250	649	Pavlov Bay	153	396
Kentucky Lake (KY-TN)	234	605	Shishmaref Inlet	153	395
Lake Mead (AZ-NV)	233	603	Smith Bay	140	363
Lake Winnebago (WI)	206	535	Seymour Canal	140	361
Mille Lacs Lake (MN)	200	518	Sitkalidak Strait	135	349
Flathead Lake (MT)	191	495	Tlevak Strait	135	349
Lake Tahoe (CA-NV)	187	486	Lake Clark	130	336
Upper Red Lake (MN)	186	483	Lynn Canal	130	336
Pyramid Lake (NV)	170	440	Chignik Bay	119	309
			Elson Lagoon	119	309
			Bucareli Bay	119	307
			Hinchinbrook Entrance	118	306

<sup>1</sup> Area measurements for Lake Champlain, Lake Erie, Lake Huron, Lake Ontario, Lake St. Clair, Lake Superior, and Lake of the Woods include only those portions under the jurisdiction of the United States.

Source: U. S. Census Bureau, unpublished data from the Census TIGER™ database.

## No. 386. Flows of Largest U.S. Rivers—Length, Discharge, and Drainage Area

River	Location of mouth	Source stream (name and location)	Average discharge at mouth (1,000 cubic ft. per second)		Drainage area (1,000 sq. mi.)
			Length <sup>1</sup> (miles)		
Missouri	Missouri	Red Rock Creek, MT.	2,540	76.2	2,529
Mississippi	Louisiana	Mississippi River, MN.	3,340	593	2,511
Yukon	Alaska	McNeil River, Canada	1,980	225	328
St. Lawrence	Canada	North River, MN.	1,900	348	2,396
Rio Grande	Mexico-Texas	Rio Grande, CO.	1,900	-	336
Arkansas	Arkansas	East Fork Arkansas River, CO.	1,460	41	161
Colorado	Mexico	Colorado River, CO.	1,450	-	246
Atchafalaya <sup>6</sup>	Louisiana	Tierra Blanca Creek, NM.	1,420	58	95.1
Ohio	Illinois-Kentucky	Allegheny River, PA.	1,310	281	203
Red	Louisiana	Tierra Blanca Creek, NM.	1,290	56	93.2
Brazos	Texas	Blackwater Draw, NM.	1,280	-	45.6
Columbia	Oregon-Washington	Columbia River, Canada.	1,240	265	2,258
Snake	Washington	Snake River, WY.	1,040	56.9	108
Platte	Nebraska	Snake River, CO.	990	-	84.9
Pecos	Texas	Pecos River, NM.	926	-	44.3
Canadian	Oklahoma	Canadian River, CO.	906	-	46.9
Tennessee	Kentucky	Courthouse Creek, NC.	886	68	40.9
Colorado (of Texas)	Texas	Colorado River, TX.	862	-	42.3
North Canadian	Oklahoma	Corruampa Creek, NM.	800	-	17.6
Mobile	Alabama	Tickenetley Creek, GA.	774	67.2	44.6
Kansas	Kansas	Arikaree River, CO.	743	-	59.5
Kuskokwim	Alaska	South Fork Kuskokwim River, AK.	724	67	48
Yellowstone	North Dakota	North Fork Yellowstone River, WY.	692	-	70
Tanana	Alaska	Nabesna River, AK.	659	41	44.5
Gila	Arizona	Middle Fork Gila River, NM.	649	-	58.2

- Represents zero. <sup>1</sup> From source to mouth. <sup>2</sup> Drainage area includes both the United States and Canada. <sup>3</sup> The length from the source of the Missouri River to the Mississippi River and thence to the Gulf of Mexico is about 3,710 miles. <sup>4</sup> Includes about 167,000 cubic ft. per second diverted from the Mississippi into the Atchafalaya River but excludes the flow of the Red River. <sup>5</sup> Excludes the drainage areas of the Red and Atchafalaya Rivers. <sup>6</sup> In east-central Louisiana, the Red River flows into the Atchafalaya River, a tributary of the Mississippi River. Data on average discharge, length, and drainage area include the Red River, but exclude all water diverted into the Atchafalaya from the Mississippi River.

Source: U.S. Geological Survey, *Largest Rivers in the United States*, Open File Report 87-242, May 1990.

## No. 387. U.S. Water Withdrawals and Consumptive Use Per Day by End Use: 1940 to 1995

[Includes Puerto Rico. Withdrawal signifies water physically withdrawn from a source. Includes fresh and saline water; excludes water used for hydroelectric power]

Year	Public supply <sup>2</sup>			Rural <sup>4</sup> (bil. gal.)	Industrial and misc. <sup>5</sup> (bil. gal.)	Steam electric utilities (bil. gal.)		
	Total (bil. gal.)	Per capita <sup>1</sup> (gal.)	Irrigation (bil. gal.)					
<b>WITHDRAWALS</b>								
1940	140	1,027	71	10	75	3.1	29	23
1950	180	1,185	89	14	145	3.6	37	40
1955	240	1,454	110	17	148	3.6	39	72
1960	270	1,500	110	21	151	3.6	38	100
1965	310	1,602	120	24	155	4.0	46	130
1970	370	1,815	130	27	166	4.5	47	170
1975	420	1,972	140	29	168	4.9	45	200
1980	440	1,953	150	34	183	5.6	45	210
1985	399	1,650	137	38	189	7.8	31	187
1990	408	1,620	137	41	195	7.9	30	195
1995	402	1,500	134	43	192	8.9	26	190
<b>CONSUMPTIVE USE</b>								
1960	61	339	52	3.5	25	2.8	3.0	0.2
1965	77	403	66	5.2	34	3.2	3.4	0.4
1970	87	427	73	5.9	36	3.4	4.1	0.8
1975	96	451	80	6.7	38	3.4	4.2	1.9
1980	100	450	83	7.1	38	3.9	5.0	3.2
1985	92	380	74	(6)	(6)	9.2	6.1	6.2
1990	94	370	76	(6)	(6)	8.9	6.7	4.0
1995	100	374	81	(6)	(6)	9.9	4.8	3.7

<sup>1</sup> Based on U.S. Census Bureau resident population as of July 1. <sup>2</sup> Includes commercial water withdrawals. <sup>3</sup> Based on population served. <sup>4</sup> Rural farm and nonfarm household and garden use, and water for farm stock and dairies. <sup>5</sup> For 1940 to 1960, includes manufacturing and mineral industries, rural commercial industries, air-conditioning, resorts, hotels, motels, military and other state and Federal agencies, and miscellaneous; thereafter, includes manufacturing, mining and mineral processing, ordnance, construction, and miscellaneous. <sup>6</sup> Public supply consumptive use included in end-use categories.

Source: 1940-1960, U.S. Bureau of Domestic Business Development, based principally on committee prints, *Water Resources Activities in the United States*, for the Senate Committee on National Water Resources, U.S. Senate, thereafter, U.S. Geological Survey, *Estimated Use of Water in the United States in 1995*, circular 1200, and previous quinquennial issues.



## No. 388. Water Withdrawals and Consumptive Use—State and Other Area: 1995

[In millions of gallons per day (401,500 represents 401,500,000) except as noted. Figures may not add due to rounding. Withdrawal signifies water physically withdrawn from a source. Includes fresh and saline water]

State or other area	Water withdrawn								Consumptive use, <sup>1</sup> fresh water
	Per capita (gal. per day) fresh	Source		Selected major uses					
		Total	Ground water	Surface water	Irrigation	Public supply <sup>2</sup>	Industrial	Thermoelectric	
<b>U.S.<sup>2</sup></b>	<b>401,500</b>	<b>1,280</b>	<b>77,500</b>	<b>324,000</b>	<b>134,000</b>	<b>43,600</b>	<b>26,200</b>	<b>190,000</b>	<b>100,000</b>
Alabama	7,100	1,670	445	6,650	139	875	753	5,200	532
Alaska	329	350	132	196	0.6	90	197	30	25
Arizona	6,830	1,620	2,840	3,990	5,670	846	197	62	3,830
Arkansas	8,800	3,540	5,460	3,340	5,940	419	187	1,780	4,140
California	45,900	1,130	14,700	31,300	28,900	5,740	802	9,630	25,500
Colorado	13,800	3,690	2,270	11,600	12,700	732	191	115	5,230
Connecticut	4,450	389	166	4,290	28	448	11	3,940	97
Delaware	1,500	1,050	110	1,390	48	101	64	1,270	71
District of Columbia	10	18	0.5	9.7	-	-	0.5	9.7	15
Florida	18,200	509	4,340	13,800	3,470	2,360	649	11,600	2,780
Georgia	5,820	799	1,190	4,630	722	1,250	676	3,070	1,170
Hawaii	1,930	853	531	1,400	652	218	20	970	542
Idaho	15,100	13,000	2,830	12,300	13,000	254	76	4,360	4,360
Illinois	19,900	1,680	953	19,000	180	1,950	527	17,100	857
Indiana	9,140	1,570	709	8,430	116	784	2,410	5,690	505
Iowa	3,030	1,070	528	2,510	39	418	301	2,130	290
Kansas	5,240	2,040	3,510	1,720	3,380	384	77	1,260	3,620
Kentucky	4,420	1,150	226	4,190	12	521	375	3,450	318
Louisiana	9,850	2,270	1,350	8,500	769	677	2,580	5,480	1,930
Maine	326	178	80	246	27	135	16	136	48
Maryland	7,730	289	246	7,480	57	907	331	6,360	150
Massachusetts	5,510	189	351	5,160	82	759	88	4,570	180
Michigan	12,100	1,260	862	11,200	227	1,490	1,910	8,370	667
Minnesota	3,390	736	714	2,680	157	573	438	2,090	417
Mississippi	3,200	1,140	2,590	614	1,740	377	294	375	1,570
Missouri	7,030	1,320	891	6,140	567	757	63	5,550	692
Montana	8,860	10,200	217	8,640	8,550	161	80	22	1,960
Nebraska	10,500	6,440	6,200	4,350	7,550	328	175	2,350	7,020
Nevada	2,300	1,480	896	1,400	1,640	479	95	27	1,340
New Hampshire	1,320	388	81	1,240	6.3	130	50	1,110	35
New Jersey	6,110	269	580	5,530	125	1,120	486	4,360	210
New Mexico	3,510	2,080	1,700	1,800	2,990	337	69	55	1,980
New York	16,800	567	1,010	15,800	30	3,140	321	13,100	469
North Carolina	9,290	1,070	535	8,750	239	939	385	7,420	713
North Dakota	1,120	1,750	122	1,000	117	85	17	819	181
Ohio	10,500	944	905	9,620	27	1,560	650	8,190	791
Oklahoma	2,040	543	1,220	822	864	597	285	124	716
Oregon	7,910	2,520	1,050	6,860	6,170	572	379	9.0	3,210
Pennsylvania	9,680	802	860	8,820	16	1,730	1,930	5,930	565
Rhode Island	411	138	27	383	2.3	121	7.3	275	19
South Carolina	6,200	1,690	322	5,880	53	614	703	4,810	321
South Dakota	460	631	187	273	269	97	32	5.3	249
Tennessee	10,100	1,920	435	9,640	24	831	868	8,300	233
Texas	29,600	1,300	8,780	20,800	9,450	3,420	2,920	13,500	10,500
Utah	4,460	2,200	790	3,670	3,530	506	253	48	2,200
Vermont	565	967	50	515	3.9	66	12	452	24
Virginia	8,260	826	358	7,900	30	911	622	6,620	218
Washington	8,860	1,620	1,760	7,100	6,470	1,300	652	376	3,080
West Virginia	4,620	2,530	146	4,470	-	217	1,330	3,010	352
Wisconsin	7,250	1,420	759	6,490	169	692	453	5,820	443
Wyoming	7,060	14,700	335	6,720	6,590	100	118	220	2,800
Puerto Rico	2,840	154	135	2,680	107	443	15	2,260	187
Virgin Islands	202	113	0.7	201	-	7.8	20	173	1.9

- Represents zero. <sup>1</sup> Water that has been evaporated, transpired, or incorporated into products, plant or animal tissue; and therefore, is not available for immediate reuse. <sup>2</sup> Includes Puerto Rico and Virgin Islands.

Source: U.S. Geological Survey, *Estimated Use of Water in the United States in 1995*, circular 1200.

## No. 389. National Ambient Water Quality in Rivers and Streams— Violation Rate: 1980 to 1995

[In percent. Violation level based on U.S. Environmental Protection Agency water quality criteria. Violation rate represents the proportion of all measurements of a specific water quality pollutant which exceeds the "violation level" for that pollutant. "Violation" does not necessarily imply a legal violation. Data based on U.S. Geological Survey's National Stream Quality Accounting Network (NASQAN) data system; for details, see source. Years refer to water years. A water year begins in Oct. and ends in Sept. µg=micrograms; mg=milligrams. For metric conversion, see page ix]

Pollutant	Violation level	1980	1985	1989	1990	1991	1992	1993	1994	1995
		Fecal coliform bacteria . . . . .	Above 200 cells per 100 ml. . .	31	28	30	26	15	28	31
Dissolved oxygen . . . . .	Below 5 mg per liter. . . . .	5	3	3	2	2	2	(Z)	2	1
Phosphorus, total, as phosphorus . . . . .	Above 1.0 mg per liter . . . . .	4	3	2	3	2	2	2	2	4
Lead, dissolved . . . . .	Above 50 µg per liter . . . . .	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(NA)	(NA)	(NA)
Cadmium, dissolved . . . . .	Above 10 µg per liter . . . . .	1	(Z)	(Z)	(Z)	(Z)	(Z)	(NA)	(NA)	(NA)

NA Not available. Z Less than 1.

Source: U.S. Geological Survey, national-level data, unpublished; state-level data, *Water-Data Report*, annual series prepared in cooperation with the state governments.

## No. 390. Oil Spills in U.S. Waters—Number and Volume: 1995 to 1998

[Based on reported discharges into U.S. navigable waters, including territorial waters (extending 3 to 12 miles from the coastline), tributaries, the contiguous zone, onto shoreline, or into other waters that threaten the marine environment. Data found in Marine Safety Management System]

Spill characteristic	Number of spills				Spill volume (1,000 gal.)			
	1995	1996	1997	1998	1995	1996	1997	1998
<b>Total . . . . .</b>	<b>9,038</b>	<b>9,335</b>	<b>8,624</b>	<b>8,315</b>	<b>2,638,229</b>	<b>3,117,831</b>	<b>942,574</b>	<b>885,303</b>
Size of spill (gallons):								
1-100 . . . . .	8,614	8,904	8,299	7,962	48,936	43,434	39,082	38,093
101-1,000 . . . . .	324	322	243	259	115,140	114,831	81,895	86,606
1,001-3,000 . . . . .	52	57	40	54	91,426	102,008	78,117	96,743
3,001-5,000 . . . . .	19	20	14	15	73,598	86,389	58,016	64,609
5,001-10,000 . . . . .	9	12	15	15	63,853	92,163	109,288	108,148
10,001-50,000 . . . . .	15	15	11	8	354,824	351,106	282,176	216,335
50,001-100,000 . . . . .	2	-	1	-	155,950	-	84,000	-
100,000-1,000,000 . . . . .	3	5	1	2	1,734,502	2,327,900	210,000	274,769
1,000,000 and over . . . . .	-	-	-	-	-	-	-	-
Waterbody:								
Atlantic ocean . . . . .	267	119	87	109	48,313	27,980	40,857	6,674
Pacific ocean . . . . .	648	491	505	644	69,053	29,209	32,841	192,775
Gulf of Mexico . . . . .	1,485	2,403	2,341	2,190	253,040	45,145	105,462	181,372
Great Lakes . . . . .	282	228	156	119	3,103	3,507	4,311	3,006
Lakes . . . . .	26	19	29	25	92	52	210,270	63
Rivers and canals . . . . .	1,849	1,984	1,821	1,944	1,156,002	475,550	182,676	280,651
Bays and sounds . . . . .	1,109	793	811	891	41,004	1,092,207	46,450	24,234
Harbors . . . . .	1,176	992	858	790	148,229	288,252	45,932	49,223
Other . . . . .	2,196	2,306	2,016	1,603	919,393	1,155,929	273,775	97,305
Source:								
Tankship . . . . .	148	122	124	104	125,491	219,311	22,429	56,673
Tankbarge . . . . .	353	313	252	220	1,101,938	1,163,258	165,649	248,089
All other vessels . . . . .	4,977	5,151	4,971	4,848	396,724	298,451	192,801	316,473
Facilities . . . . .	586	509	838	937	868,900	406,384	204,935	166,269
Pipelines . . . . .	30	17	32	45	11,894	978,392	224,122	47,863
All other nonvessels . . . . .	500	552	486	571	77,428	23,527	72,208	32,584
Unknown . . . . .	2,444	2,671	1,921	1,590	55,854	28,508	60,430	17,352

- Represents or rounds to zero.

Source: U.S. Coast Guard, <<http://www.uscg.mil/hq/g-m/nmc/response/stats/summary.htm>> (accessed 09 February 2000).

## No. 391. Wastewater Treatment Facilities: 1988 to 1996

[Covers treatment facilities, which are structures designed to treat wastewater, storm water, or combined sewer overflows prior to discharging to the environment. Treatment is accomplished by subjecting the wastewater to a combination of physical, chemical, and/or biological processes that reduce the concentration of contaminants]

Level of treatment	Number of facilities				1996		
	1988	1992	1996	Present design capacity (mgd <sup>1</sup> )	Number of persons served		
					Total	Percent of U.S.	
<b>Total . . . . .</b>	<b>15,591</b>	<b>15,613</b>	<b>16,024</b>	<b>42,225</b>	<b>189,710,899</b>	<b>71.8</b>	
Nondischarge <sup>2</sup> . . . . .	1,854	1,981	2,032	1,421	7,660,876	2.9	
Less than secondary . . . . .	1,789	868	176	3,054	17,177,492	6.5	
Secondary . . . . .	8,536	9,086	9,388	17,734	81,944,349	31.0	
Greater than secondary . . . . .	3,412	3,678	4,428	20,016	82,928,182	31.4	

<sup>1</sup>Millions of gallons per day. <sup>2</sup>Facilities that do not discharge effluent to surface waters.

Source: U.S. Environmental Protection Agency, Office of Wastewater Management, *1996 Clean Water Needs Survey Report to Congress*.

### No. 392. National Ambient Air Pollutant Concentrations: 1990 to 1998

[Data represent annual composite averages of pollutant based on daily 24-hour averages of monitoring stations, except carbon monoxide is based on the second-highest, nonoverlapping, 8-hour average; ozone, average of the second-highest daily maximum 1-hour value; and lead, quarterly average of ambient lead levels. Based on data from the Aerometric Information Retrieval System.  $\mu\text{g}/\text{m}^3$ =micrograms of pollutant per cubic meter of air; ppm=parts per million]

Pollutant	Unit	Monitoring stations, number	Air quality standard <sup>1</sup>	1990	1993	1994	1995	1996	1997	1998
				Carbon monoxide . . . . .	ppm . . . . .	363	2 <sup>9</sup>	5.8	4.9	5.1
Ozone . . . . .	ppm . . . . .	661	3.12	0.112	0.108	0.107	0.112	0.106	0.105	0.11
Sulfur dioxide . . . . .	ppm . . . . .	482	.03	0.0082	0.0072	0.0069	0.0056	0.0056	0.0054	0.0053
Particulates (PM-10) <sup>4</sup>	$\mu\text{g}/\text{m}^3$ . . . . .	929	50	29.5	26.1	26.1	25	24.1	23.9	23.8
Nitrogen dioxide . . . . .	ppm . . . . .	225	0.53	0.02	0.019	0.02	0.019	0.019	0.018	0.018
Lead . . . . .	$\mu\text{g}/\text{m}^3$ . . . . .	189	1.5	0.09	0.05	0.05	0.04	0.04	0.04	0.04

<sup>1</sup> Refers to the primary National Ambient Air Quality Standard that protects the public health. <sup>2</sup> Based on 8-hour standard of 9 ppm. <sup>3</sup> Based on 1-hour standard of .12 ppm. <sup>4</sup> The particulates (PM-10) standard replaced the previous standard for total suspended particulates in 1987. <sup>5</sup> Based on 3-month standard of 1.5  $\mu\text{g}/\text{m}^3$

Source: U.S. Environmental Protection Agency, *National Air Quality and Emissions Trends Report*, annual.

### No. 393. National Air Pollutant Emissions: 1970 to 1998

[In thousands of tons, except as indicated. PM-10=Particulate matter of less than ten microns. Methodologies to estimate data for 1970 to 1980 period and 1985 to present emissions differ. Beginning with 1985, the estimates are based on a modified National Acid Precipitation Assessment Program inventory]

Year	PM-10	PM-10, fugitive dust <sup>1</sup>	Sulfur dioxide	Nitrogen dioxides	Volatile organic compounds	Carbon monoxide	Lead (tons)
	1970 . . . . .	13,042	(NA)	31,161	20,928	30,982	129,444
1975 . . . . .	7,671	(NA)	28,011	22,632	26,079	116,757	159,659
1980 . . . . .	7,119	(NA)	25,905	24,384	26,336	117,434	74,153
1985 . . . . .	4,831	40,614	23,658	23,198	24,428	117,013	22,890
1986 . . . . .	4,642	46,298	22,886	22,808	23,617	111,688	14,763
1987 . . . . .	4,758	37,711	22,661	23,068	23,470	110,798	7,681
1988 . . . . .	5,598	55,474	23,135	24,124	24,306	118,729	7,053
1989 . . . . .	4,811	48,253	23,293	23,893	22,513	106,439	5,468
1990 . . . . .	5,057	24,905	23,660	24,049	20,936	98,523	4,975
1991 . . . . .	4,725	24,836	23,041	24,249	21,102	100,872	4,169
1992 . . . . .	4,610	24,862	22,806	24,596	20,659	97,630	3,810
1993 . . . . .	4,528	23,478	22,466	24,961	20,868	98,160	3,916
1994 . . . . .	4,751	26,162	21,870	25,372	21,535	102,643	4,047
1995 . . . . .	4,579	22,491	19,181	24,921	20,817	93,353	3,929
1996 . . . . .	4,732	28,309	19,121	24,676	18,736	95,479	3,899
1997 . . . . .	4,743	29,482	19,622	24,824	18,876	94,410	3,952
1998 . . . . .	4,450	30,292	19,647	24,454	17,917	89,454	3,973

NA Not available. <sup>1</sup> Sources such as agricultural tilling, construction, mining and quarrying, paved roads, unpaved roads, and wind erosion.

### No. 394. Air Pollutant Emissions by Pollutant and Source: 1998

[In thousands of tons, except as indicated. See headnote, Table 393]

Source	Particulates <sup>1</sup>	Sulfur dioxide	Nitrogen oxides	Volatile organic compounds	Carbon monoxide	Lead (tons)
<b>Total . . . . .</b>	<b>34,741</b>	<b>19,647</b>	<b>24,454</b>	<b>17,917</b>	<b>89,454</b>	<b>3,973</b>
Fuel combustion, stationary sources . . . . .	1,091	16,721	10,189	893	5,374	503
Electric utilities . . . . .	302	13,217	6,103	54	417	68
Industrial . . . . .	245	2,895	2,969	161	1,114	19
Other fuel combustion . . . . .	544	609	1,117	678	3,843	416
Residential . . . . .	432	127	742	654	3,699	6
Industrial processes . . . . .	607	1,458	786	1,417	3,624	2,327
Chemical and allied product manufacturing . . . . .	65	299	152	396	1,129	175
Metals processing . . . . .	171	444	88	75	1,495	2,098
Petroleum and related industries . . . . .	32	345	138	496	368	(NA)
Other . . . . .	339	370	408	450	632	54
Solvent utilization . . . . .	6	1	2	5,278	2	(NA)
Storage and transport . . . . .	94	3	7	1,324	80	(NA)
Waste disposal and recycling . . . . .	310	42	97	433	1,154	620
Highway vehicles . . . . .	257	326	7,765	5,325	50,386	19
Light-duty gas vehicles and motorcycles . . . . .	56	130	2,849	2,832	27,039	12
Light-duty trucks . . . . .	40	99	1,917	2,015	18,726	7
Heavy-duty gas vehicles . . . . .	8	11	323	257	3,067	-
Diesels . . . . .	152	85.3	2,676	222	1,554	(NA)
Off highway <sup>2</sup> . . . . .	461	1,084	5,280	2,461	19,914	503
Miscellaneous <sup>3</sup> . . . . .	31,916	12	328	786	8,920	(NA)

- Represents or rounds to zero. NA Not available. <sup>1</sup> Represents both PM-10 and PM-10 fugitive dust; see Table 405. <sup>2</sup> Includes emissions from farm tractors and other farm machinery, construction equipment, industrial machinery, recreational marine vessels, and small general utility engines such as lawn mowers. <sup>3</sup> Includes emissions such as from forest fires and other kinds of burning, various agricultural activities, fugitive dust from paved and unpaved roads, and other construction and mining activities, and natural sources.

Source of Tables 393 and 394: U.S. Environmental Protection Agency, *National Air Pollutant Emission Trends, 1900-1998*, EPA-454/R-00-002.

## No. 395. Emissions of Greenhouse Gases by Type and Source: 1990 to 1998

[Emission estimates were mandated by Congress through Section 1605(a) of the Energy Policy Act of 1992 (title XVI). Gases that contain carbon can be measured either in terms of the full molecular weight of the gas or just in terms of their carbon content]

Type and source	Unit	1990	1993	1994	1995	1996	1997	1998
<b>Carbon dioxide:</b>								
Carbon content, total <sup>1</sup>	Mil. metric tons	1,347.0	1,388.6	1,409.9	1,423.8	1,471.5	1,490.4	1,495.5
Energy sources	Mil. metric tons	1,345.2	1,378.2	1,398.3	1,411.7	1,460.5	1,480.0	1,485.4
<b>Methane:</b>								
Gas, total <sup>1</sup>	Mil. metric tons	30.19	29.85	30.05	30.20	29.30	29.27	28.84
Energy sources	Mil. metric tons	10.77	10.10	10.11	10.34	9.87	10.09	10.09
Landfills	Mil. metric tons	11.12	11.01	10.90	10.85	10.70	10.36	9.87
Agricultural sources	Mil. metric tons	8.18	8.62	8.91	8.87	8.60	8.69	8.74
<b>Nitrous oxide, total <sup>1</sup></b>								
	1,000 metric tons	1,167	1,218	1,312	1,257	1,245	1,225	1,220
Agriculture	1,000 metric tons	844	860	929	860	847	865	872
Energy sources	1,000 metric tons	210	240	255	268	265	269	271
Industrial sources	1,000 metric tons	96	100	110	111	115	73	58
<b>Nitrogen oxide, total <sup>1</sup></b>								
	Mil. metric tons	21.23	21.78	22.05	21.53	21.26	21.36	(NA)
Energy related	Mil. metric tons	20.08	20.80	20.91	20.53	20.15	20.22	(NA)
Stationary source fuel combustion	Mil. metric tons	9.85	10.05	9.96	9.79	9.52	9.70	(NA)
Transportation	Mil. metric tons	10.23	10.75	10.95	10.73	10.64	10.52	(NA)
<b>Nonmethane volatile organic compounds (VOCs), total <sup>1</sup></b>								
	Mil. metric tons	18.89	18.79	19.39	18.56	17.42	17.34	(NA)
Energy related	Mil. metric tons	8.86	8.71	9.00	8.32	8.13	7.72	(NA)
Transportation	Mil. metric tons	7.95	7.82	8.11	7.35	7.16	6.95	(NA)
Industrial processes	Mil. metric tons	8.18	8.65	8.79	8.81	8.21	8.52	(NA)
Solid waste disposal	Mil. metric tons	0.89	0.95	0.95	0.97	0.39	0.41	(NA)
<b>Carbon monoxide, total</b>								
	Mil. metric tons	86.77	85.62	89.54	80.74	82.34	79.18	(NA)
Energy related	Mil. metric tons	71.29	73.91	75.53	69.10	68.48	65.01	(NA)
Transportation	Mil. metric tons	66.43	68.97	70.65	63.85	63.20	60.79	(NA)
Stationary source fuel combustion	Mil. metric tons	4.86	4.94	4.87	5.25	5.28	4.22	(NA)
Industrial processes	Mil. metric tons	4.33	4.22	4.19	4.18	4.19	4.36	(NA)
<b>Chlorofluorocarbons (CFCs) gases <sup>2</sup></b>								
	1,000 metric tons	202	148	109	102	67	51	32
Hydrofluorocarbons	1,000 metric tons	6	8	13	21	28	34	37
<b>Hydrochlorofluorocarbons (HCFCs) gases <sup>3</sup></b>								
	1,000 metric tons	80	82	93	107	119	120	129
<b>Other chemicals:</b>								
Carbon tetrachloride	1,000 metric tons	32	19	16	5	(Z)	(Z)	(Z)
Methyl Chloroform	1,000 metric tons	158	93	77	46	-	(Z)	(Z)
Sulfur hexafluoride	1,000 metric tons	1	1	1	2	2	2	2

<sup>1</sup> Represents zero. NA Not available. (Z) Less than 0.5. <sup>1</sup> Includes minor sources not shown separately. <sup>2</sup> Covers principally CFC-11, CFC-12, and CFC-113. <sup>3</sup> Covers principally HCFC-22.

Source: U.S. Energy Information Administration, *Emissions of Greenhouse Gases in the United States, annual*.

## No. 396. Municipal Solid Waste Generation, Recovery, and Disposal: 1980 to 1998

[In millions of tons (151.5 represents 151,500,000), except as indicated. Covers post-consumer residential and commercial solid wastes which comprise the major portion of typical municipal collections. Excludes mining, agricultural and industrial processing, demolition and construction wastes, sewage sludge, and junked autos and obsolete equipment wastes. Based on material-flows estimating procedure and wet weight as generated]

Item and material	1980	1990	1992	1993	1994	1995	1996	1997	1998
<b>Waste generated</b>	151.5	205.2	208.9	211.8	214.2	211.4	209.2	216.4	220.2
Per person per day (lb.)	3.7	4.5	4.5	4.5	4.5	4.4	4.3	4.4	4.5
<b>Materials recovered</b>	14.5	33.6	40.6	43.8	50.8	54.9	57.3	59.4	62.2
Per person per day (lb.)	0.35	0.7	0.9	0.9	1.1	1.1	1.2	1.2	1.3
<b>Combustion for energy recovery</b>	2.7	29.7	30.5	30.9	31.2	34.5	36.1	36.7	37.0
Per person per day (lb.)	0.06	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8
<b>Combustion without energy recovery</b>	11.0	2.2	2.2	1.6	1.3	1.0	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Per person per day (lb.)	0.27	0.05	0.05	0.03	0.03	0.02	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
<b>Landfill, other disposal</b>	123.3	139.7	135.7	135.5	130.9	120.9	115.8	120.4	121.1
Per person per day (lb.)	3.0	3.1	2.9	2.9	2.8	2.5	2.4	2.5	2.5
<b>Percent distribution of generation:</b>									
Paper and paperboard	36.1	35.4	35.5	36.6	37.7	38.6	38.1	38.5	38.2
Glass	9.9	6.4	6.3	6.4	6.2	6.1	5.9	5.5	5.7
Metals	9.6	8.1	7.7	7.5	7.6	7.5	7.7	7.7	7.6
Plastics	5.2	8.3	8.8	9.0	9.0	8.9	9.4	9.9	10.2
Rubber and leather	2.8	2.8	2.8	2.7	2.9	2.9	3.0	3.0	3.1
Textiles	1.7	2.8	3.2	3.2	3.4	3.5	3.7	3.8	3.9
Wood	4.4	6.0	5.9	5.8	5.3	4.9	5.2	5.3	5.4
Food wastes	8.7	10.1	10.1	10.0	10.0	10.3	10.4	10.1	10.0
Yard wastes	18.2	17.1	16.8	15.7	14.7	14.0	13.3	12.8	12.6
Other wastes	3.4	3.0	2.9	3.0	3.2	3.3	3.3	3.4	3.3

<sup>1</sup> Combustion without energy recovery is no longer available separately.

Source: Franklin Associates, Ltd., Prairie Village, KS. *Characterization of Municipal Solid Waste in the United States: 1998*. Prepared for the U.S. Environmental Protection Agency.

## No. 397. Generation and Recovery of Selected Materials in Municipal Solid Waste: 1980 to 1998

[In millions of tons (151.5 represents 151,500,000), except as indicated. Covers post-consumer residential and commercial solid wastes which comprise the major portion of typical municipal collections. Excludes mining, agricultural and industrial processing, demolition and construction wastes, sewage sludge, and junked autos and obsolete equipment wastes. Based on material-flows estimating procedure and wet weight as generated]

Item and material	1980	1990	1992	1993	1994	1995	1996	1997	1998
<b>Waste generated, total</b>	<b>151.5</b>	<b>205.2</b>	<b>208.9</b>	<b>211.8</b>	<b>214.2</b>	<b>211.4</b>	<b>209.2</b>	<b>216.4</b>	<b>220.2</b>
Paper and paperboard	54.7	72.7	74.3	77.4	80.8	81.7	79.7	83.3	84.1
Ferrous metals	11.6	12.6	12.1	11.9	11.8	11.6	11.8	12.3	12.4
Aluminum	1.8	2.8	2.9	2.9	3.0	3.0	3.0	3.0	3.1
Other nonferrous metals	1.1	1.1	1.1	1.1	1.4	1.3	1.3	1.3	1.4
Glass	15.0	13.1	13.1	13.6	13.4	12.8	12.3	12.0	12.5
Plastics	7.9	17.1	18.4	19.0	19.3	18.9	19.8	21.5	22.4
Yard waste	27.5	35.0	35.0	33.3	31.5	29.7	27.9	27.7	27.7
Other wastes	31.9	50.7	52.1	52.5	53.1	52.4	53.5	55.3	56.7
<b>Materials recovered, total</b>	<b>14.5</b>	<b>33.6</b>	<b>40.6</b>	<b>43.8</b>	<b>50.8</b>	<b>54.9</b>	<b>57.3</b>	<b>59.4</b>	<b>62.2</b>
Paper and paperboard	11.9	20.2	24.5	25.5	29.5	32.7	33.2	33.6	35.0
Ferrous metals	0.4	2.6	3.4	3.9	4.0	4.1	4.4	4.7	4.3
Aluminum	0.3	1.0	1.1	1.0	1.2	0.9	0.9	1.0	0.9
Other nonferrous metals	0.5	0.7	0.7	0.7	1.0	0.8	0.8	0.8	0.9
Glass	0.8	2.6	2.9	3.0	3.1	3.1	3.2	2.9	3.2
Plastics	-	0.4	0.6	0.7	0.9	1.0	1.1	1.1	1.2
Yard waste	-	4.2	5.4	6.9	8.0	9.0	10.4	11.5	12.6
Other wastes	0.6	1.8	2.0	2.1	3.1	3.2	3.3	3.8	4.1
<b>Percent of generation recovered, total</b>	<b>9.6</b>	<b>16.4</b>	<b>19.4</b>	<b>20.7</b>	<b>23.7</b>	<b>26.0</b>	<b>27.4</b>	<b>27.4</b>	<b>28.2</b>
Paper and paperboard	21.8	27.8	33.0	32.9	36.5	40.0	41.6	40.3	41.6
Ferrous metals	3.4	20.4	27.7	32.8	33.9	35.5	37.2	38.4	35.1
Aluminum	16.7	35.9	38.7	35.7	37.8	31.4	31.5	31.6	27.9
Other nonferrous metals	45.5	66.4	63.4	63.1	73.3	64.3	66.7	65.4	67.4
Glass	5.3	20.0	22.0	22.1	23.3	24.5	25.8	24.3	25.5
Plastics	-	2.2	3.3	3.5	4.9	5.2	5.4	5.2	5.4
Yard waste	-	12.0	15.4	20.8	25.4	30.3	37.2	41.4	45.3
Other wastes	1.9	3.6	3.9	4.0	5.9	6.1	6.2	6.8	7.3

- Represents zero.

Source: Franklin Associates, Ltd., Prairie Village, KS, *Characterization of Municipal Solid Waste in the United States: 1998*. Prepared for the U.S. Environmental Protection Agency.

## No. 398. Curbside Recycling Programs—Number and Population Served by Region: 1995 to 1997

[For composition of regions, see map, inside front cover]

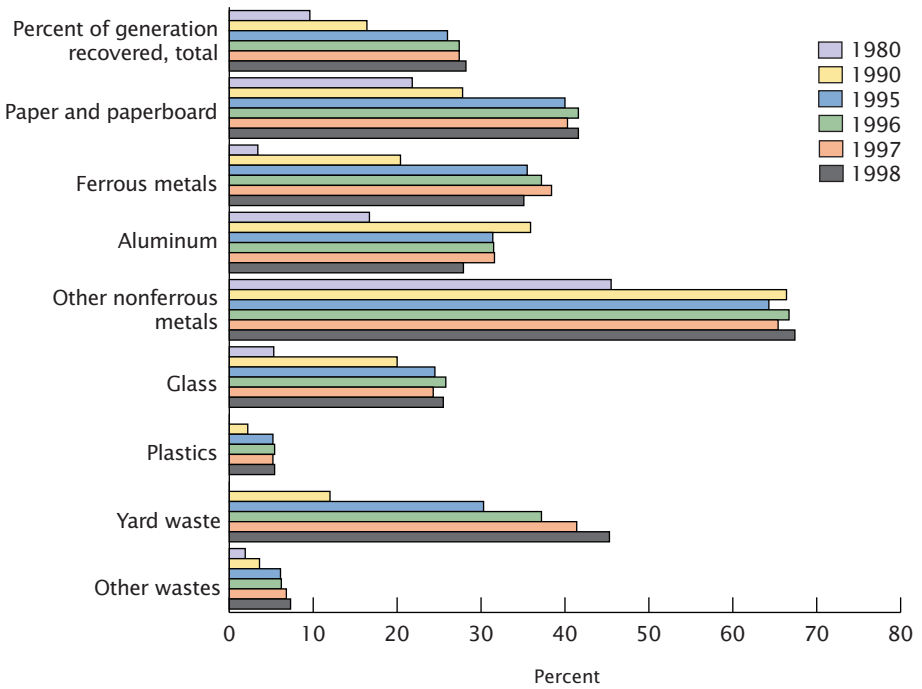
Region	Number of programs			Population served <sup>1</sup>					
				Total (1,000)			Percent		
	1995	1996	1997	1995	1996	1997	1995	1996	1997
<b>Total</b>	<b>7,375</b>	<b>8,817</b>	<b>8,969</b>	<b>121,335</b>	<b>134,630</b>	<b>136,229</b>	<b>46</b>	<b>51</b>	<b>51</b>
Northeast	2,210	3,427	3,406	37,256	43,052	43,200	72	83	83
South	1,281	1,318	1,344	31,521	32,798	36,952	34	35	39
Midwest	2,985	3,198	3,357	25,487	27,454	26,970	41	44	43
West	899	874	862	27,071	31,326	29,107	49	55	50

<sup>1</sup> Calculated using population of states reporting data.

Source: Franklin Associates, Ltd., Prairie Village, KS, *Characterization of Municipal Solid Waste in the United States: 1998*. Prepared for the U.S. Environmental Protection Agency. Also in *Biocycle Magazine*.

Figure 6.1

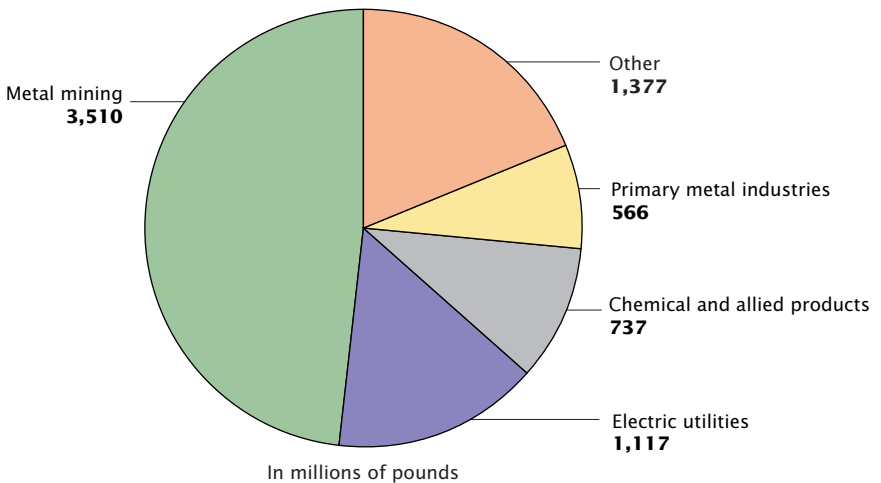
**Waste Recovery of Selected Materials in Municipal Solid Wastes: 1998**



Source: Chart prepared by U.S. Census Bureau. For data, see Table 397.

Figure 6.2

**Toxic Chemical Releases, by Industry: 1998**



Source: Chart prepared by U.S. Census Bureau. For data, see Table 400.

## No. 399. Toxic Chemical Releases and Transfers by Media: 1988 to 1998

[In millions of pounds (3,396.4 represents 3,396,400,000), except as indicated. Based on reports filed as required by Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA, or Title III of the Superfund Amendments and Reauthorization Act of 1986), Public Law 99-499. Owners and operators of facilities that are classified within Standard Classification Code groups 20 through 39, have 10 or more full-time employees, and that manufacture, process, or otherwise uses any listed toxic chemical in quantities greater than the established threshold in the course of a calendar year are covered and required to report]

Media	Core chemicals <sup>1</sup>				Expanded chemical list <sup>2</sup>		
	1988	1996	1997	1998	1996	1997	1998
Total facilities reporting . . . . .	20,470	20,380	19,999	19,610	22,340	21,927	21,517
<b>Total releases . . . . .</b>	<b>3,396.4</b>	<b>1,918.5</b>	<b>1,954.0</b>	<b>1,856.9</b>	<b>2,545.3</b>	<b>2,587.0</b>	<b>2,496.8</b>
On-site releases . . . . .	2,968.4	1,597.6	1,521.2	1,427.0	2,198.0	2,131.2	2,046.6
Air emissions . . . . .	2,182.6	1,104.9	986.1	920.7	1,470.2	1,336.6	1,257.0
Surface water . . . . .	164.6	44.6	61.6	44.7	184.7	222.3	223.4
Underground injection . . . . .	162.0	122.8	131.5	114.6	209.3	221.7	210.6
Releases to land . . . . .	459.3	325.3	342.0	347.0	333.7	350.6	355.7
Off-site releases . . . . .	428.0	320.9	432.8	430.0	347.3	455.8	450.1
Total transfers off-site for further waste management . . . . .	(NA)	2,927.2	2,989.4	2,739.5	3,151.3	3,231.8	2,987.8
Transfers to recycling . . . . .	(NA)	2,154.4	2,144.3	1,945.9	2,200.6	2,189.3	1,989.5
Transfers to energy recovery . . . . .	(NA)	447.3	469.6	435.7	478.3	507.7	478.8
Transfers to treatment . . . . .	335.0	185.7	218.6	210.8	226.8	262.4	251.8
Transfers to POTWs . . . . .	245.4	139.0	156.9	146.1	244.5	272.3	266.7
Other off-site transfers . . . . .	43.5	0.8	0.0	0.9	1.0	0.0	0.9
Other on-site waste management:							
Recycled on-site . . . . .	(NA)	6,439.8	6,776.0	7,808.1	7,533.6	8,233.0	9,646.8
Energy recovery on-site . . . . .	(NA)	2,550.2	2,553.3	2,618.1	2,727.6	2,794.3	2,851.5
Treated on-site . . . . .	(NA)	4,222.7	4,345.9	4,457.5	5,943.6	6,020.5	6,013.0
Other off-site waste management:							
Recycled off-site . . . . .	(NA)	2,196.6	2,155.8	2,016.9	2,243.3	2,202.7	2,059.4
Energy recovery off-site . . . . .	(NA)	486.0	484.0	443.0	512.7	521.8	485.4
Treated off-site . . . . .	(NA)	364.2	377.3	387.8	511.5	530.9	547.4

NA Not available. <sup>1</sup> Excludes chemicals removed from the list, those added in 1990, 1991, 1994, and 1995, and aluminum oxide, ammonia, hydrochloric acid, and sulfuric acid. Chemicals covered for all reporting years. <sup>2</sup> The Environmental Protection Agency added 286 chemicals and chemical categories to the EPCRA Section 313 list of toxic chemicals. <sup>3</sup> POTW (Publicly Owned Treatment Work) is a wastewater treatment facility that is owned by a state or municipality.

## No. 400. Toxic Chemical Releases by Industry: 1998

[In millions of pounds (7,307.3 represents 7,307,300,000), except as indicated. "Original Industries" include owners and operators of facilities that are classified within Standard Classification Code groups 20 through 39, have 10 or more full-time employees, and that manufacture, process, or otherwise uses any listed toxic chemical in quantities greater than the established threshold in the course of a calendar year are covered and required to report. Beginning in 1998, additional industries (listed below as "New Industries") were required to report]

Industry	1987 SIC code	Total facilities (number)	Total on- and off-site releases	Total air emissions	Surface water discharges	On-site land releases		Off-site releases/transfers to disposal	
						Surface impoundments	Total on-site releases		
<b>Total . . . . .</b>	<b>(X)</b>	<b>23,487</b>	<b>7,307.3</b>	<b>2,053.5</b>	<b>231.4</b>	<b>4,310.8</b>	<b>1,379.8</b>	<b>6,863.1</b>	<b>444.3</b>
<b>ORIGINAL INDUSTRIES</b>									
<b>Total <sup>3</sup> . . . . .</b>	<b>(X)</b>	<b>21,517</b>	<b>2,378.8</b>	<b>1,257.0</b>	<b>223.4</b>	<b>355.7</b>	<b>90.2</b>	<b>2,046.6</b>	<b>332.2</b>
Food and kindred products . . . . .	20	1,995	89.3	63.6	17.1	6.2	0.2	87.0	2.3
Tobacco products . . . . .	21	21	3.6	3.1	0.2	-	-	3.3	0.3
Textile mill products . . . . .	22	274	12.0	10.8	0.3	0.2	0.1	11.3	0.7
Apparel and other textile products . . . . .	23	19	0.5	0.5	-	-	-	0.5	-
Lumber and wood products . . . . .	24	825	34.3	32.5	0.1	0.4	0.1	33.0	1.3
Furniture and fixtures . . . . .	25	377	17.3	17.2	-	-	-	17.2	0.1
Paper and allied products . . . . .	26	473	229.9	186.0	21.9	17.1	3.1	225.0	4.9
Printing and publishing . . . . .	27	225	22.5	22.3	-	-	-	22.3	0.2
Chemical and allied products . . . . .	28	3,806	737.1	321.7	95.4	73.3	40.7	697.1	39.9
Petroleum and coal products . . . . .	29	391	63.3	49.0	8.1	0.6	0.3	60.6	2.7
Rubber and misc. plastic products . . . . .	30	1,824	109.7	98.6	-	-	-	99.6	10.1
Leather and leather products . . . . .	31	80	4.8	2.6	0.1	-	-	2.6	2.2
Stone, clay, glass products . . . . .	32	657	40.4	30.9	0.2	3.2	0.1	34.3	6.1
Primary metal industries . . . . .	33	1,920	566.4	120.6	53.9	198.0	44.2	373.6	192.8
Fabricated metals products . . . . .	34	2,897	85.9	61.9	1.3	0.8	-	64.0	21.9
Industrial machinery and equipment . . . . .	35	1,117	19.4	14.6	0.1	0.3	-	14.9	4.6
Electronic, electric equipment . . . . .	36	1,234	29.1	16.6	2.2	0.4	-	19.2	10.0
Transportation equipment . . . . .	37	1,296	102.5	90.5	0.2	0.4	-	91.1	11.4
Instruments and related products . . . . .	38	253	12.2	9.6	1.2	0.1	-	10.9	1.3
Miscellaneous . . . . .	39	316	10.6	9.6	-	0.2	-	9.8	0.7
<b>NEW INDUSTRIES</b>									
<b>Total . . . . .</b>	<b>(X)</b>	<b>1,970</b>	<b>4,928.5</b>	<b>796.6</b>	<b>8.1</b>	<b>3,955.1</b>	<b>1,289.6</b>	<b>4,816.4</b>	<b>112.0</b>
Metal mining . . . . .	10	114	3,509.9	4.6	0.5	3,470.5	1,153.8	3,508.6	1.3
Coal mining . . . . .	12	55	13.3	1.5	0.3	11.5	2.5	13.3	-
Electric utilities . . . . .	49	612	1,117.1	783.7	6.5	264.2	130.4	1,054.6	62.5
Chemical wholesalers . . . . .	5169	438	1.6	1.3	-	0.1	-	1.4	0.2
Petroleum bulk terminals . . . . .	5171	546	4.7	4.3	0.1	0.1	-	4.5	0.2
RCRA/solvent recovery . . . . .	4953/7369	205	281.8	1.3	0.6	208.8	2.9	234.1	47.8

- Represents or rounds to zero. X Not applicable. <sup>1</sup> Standard Industrial Classification, see text, Section 13, Labor Force. <sup>2</sup> Includes items not shown separately. <sup>3</sup> Includes industries with no specific industry identified, not shown separately. Source of Tables 399 and 400: U.S. Environmental Protection Agency, 1998 Toxics Release Inventory, EPA report 745-R-98-005.

## No. 401. Toxic Releases by State: 1988 to 1998

[In thousands of pounds (3,396.4 represents 3,396,400,000). Excludes delisted chemicals, chemicals added in 1990, 1991, 1994, and 1995, and aluminum oxide, ammonia, hydrochloric acid, and sulfuric acid. See headnote, Table 399]

State and outlying area	Core chemicals					State and outlying area	Core chemicals				
	1988	1995	1996	1997	1998		1988	1995	1996	1997	1998
<b>Total . . . . .</b>	<b>3,396.4</b>	<b>1,977.2</b>	<b>1,918.5</b>	<b>1,954.0</b>	<b>1,856.9</b>	MT . . . . .	35.6	42.6	47.2	42.6	50.5
<b>U.S. total . . . . .</b>	<b>3,380.9</b>	<b>1,967.1</b>	<b>1,909.3</b>	<b>1,945.6</b>	<b>1,849.4</b>	NE . . . . .	17.1	11.4	8.8	13.9	10.2
AL . . . . .	111.0	100.9	89.9	80.1	75.9	NV . . . . .	2.4	3.4	3.3	4.0	3.7
AK . . . . .	3.7	2.2	1.7	0.8	0.3	NH . . . . .	14.0	2.3	2.2	2.4	2.3
AZ . . . . .	66.3	38.3	45.8	30.6	53.5	NJ . . . . .	48.5	14.1	12.3	13.6	11.5
AR . . . . .	41.2	25.8	30.4	49.1	39.5	NM . . . . .	30.4	43.4	42.7	40.1	23.8
CA . . . . .	110.8	38.2	35.4	28.3	28.2	NY . . . . .	101.4	31.4	27.8	28.7	22.0
CO . . . . .	15.7	3.5	3.2	3.1	3.6	NC . . . . .	132.1	73.3	72.7	63.7	56.6
CT . . . . .	38.7	9.3	7.3	8.5	6.0	ND . . . . .	1.2	1.2	0.8	0.8	1.0
DE . . . . .	8.8	3.0	2.1	2.0	2.3	OH . . . . .	206.0	126.5	123.2	127.0	124.0
DC . . . . .	(Z)	0.1	(Z)	(Z)	(Z)	OK . . . . .	30.6	16.1	15.3	15.2	13.9
FL . . . . .	61.7	52.8	53.9	57.3	41.7	OR . . . . .	21.6	22.3	23.5	24.2	28.0
GA . . . . .	86.7	41.3	41.8	51.9	45.2	PA . . . . .	136.5	97.8	86.2	96.9	89.9
HI . . . . .	0.8	0.6	0.4	0.3	0.3	RI . . . . .	7.8	3.2	2.3	2.0	1.6
ID . . . . .	7.4	12.1	13.9	12.9	13.3	SC . . . . .	66.2	49.1	48.6	47.8	50.0
IL . . . . .	141.2	85.8	82.3	92.0	83.6	SD . . . . .	2.4	1.9	1.4	1.3	1.3
IN . . . . .	185.2	94.0	94.2	105.3	105.5	TN . . . . .	127.0	94.0	90.6	89.9	78.2
IA . . . . .	43.1	22.1	19.1	19.9	24.8	TX . . . . .	322.6	209.0	186.2	179.3	170.0
KS . . . . .	30.6	17.8	17.5	18.9	20.8	UT . . . . .	123.8	69.4	77.7	96.5	99.5
KY . . . . .	66.9	34.1	33.3	35.3	31.1	VT . . . . .	1.8	0.6	0.3	0.3	0.2
LA . . . . .	250.9	125.9	135.4	131.5	120.5	VA . . . . .	112.9	41.0	40.2	40.9	39.5
ME . . . . .	15.6	7.0	5.6	6.4	6.6	WA . . . . .	30.7	22.7	22.3	24.6	24.2
MD . . . . .	20.3	12.0	9.6	9.9	8.8	WV . . . . .	39.7	20.0	17.7	15.3	16.3
MA . . . . .	32.3	8.8	7.0	6.3	6.5	WI . . . . .	62.5	34.8	33.1	33.8	33.8
MI . . . . .	143.5	89.9	81.7	74.6	73.9	WY . . . . .	16.7	1.3	1.4	1.3	1.0
MN . . . . .	56.1	18.4	17.1	15.7	15.0	Guam . . . . .	-	(Z)	(Z)	0.0	0.0
MS . . . . .	59.7	40.2	40.6	45.7	40.8	Puerto Rico . . . . .	12.9	8.9	7.9	7.2	6.7
MO . . . . .	91.2	50.6	50.1	53.0	48.6	Virgin Island . . . . .	2.6	1.2	1.2	1.2	0.9

- Represents zero. Z Less than 50,000.

Source: U.S. Environmental Protection Agency, 1998 Toxics Release Inventory.

## No. 402. Hazardous Waste Sites on the National Priority List by State: 1999

[As of December 31. Includes both proposed and final sites listed on the National Priorities List for the Superfund program as authorized by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and the Superfund Amendments and Reauthorization Act of 1986]

State and outlying area	Total sites	Rank	Percent distribution	Federal	Non-Federal	State and outlying area	Total sites	Rank	Percent distribution	Federal	Non-Federal
<b>United States . . . . .</b>	<b>1,260</b>	<b>(X)</b>	<b>100.0</b>	<b>163</b>	<b>1,097</b>	Nebraska . . . . .	10	38	0.8	1	9
Alabama . . . . .	13	30	1.0	3	10	Nevada . . . . .	1	48	0.1	-	1
Alaska . . . . .	7	43	0.6	6	1	New Hampshire . . . . .	18	21	1.4	1	17
Arizona . . . . .	10	38	0.8	3	7	New Jersey . . . . .	114	1	9.0	8	106
Arkansas . . . . .	12	34	1.0	-	12	New Mexico . . . . .	11	35	0.9	1	10
California . . . . .	97	3	7.7	24	73	New York . . . . .	86	4	6.8	4	82
Colorado . . . . .	17	22	1.3	3	14	North Carolina . . . . .	26	15	2.1	2	24
Connecticut . . . . .	14	29	1.1	1	13	North Dakota . . . . .	-	50	0.0	-	-
Delaware . . . . .	17	22	1.3	1	16	Ohio . . . . .	36	10	2.9	5	31
District of Columbia . . . . .	1	(X)	0.1	1	-	Oklahoma . . . . .	13	30	1.0	1	12
Florida . . . . .	51	6	4.0	6	45	Oregon . . . . .	10	38	0.8	2	8
Georgia . . . . .	15	27	1.2	2	13	Pennsylvania . . . . .	98	2	7.8	6	92
Hawaii . . . . .	4	45	0.3	3	1	Rhode Island . . . . .	12	32	1.0	2	10
Idaho . . . . .	8	41	0.6	2	6	South Carolina . . . . .	26	15	2.1	2	24
Illinois . . . . .	43	8	3.4	4	39	South Dakota . . . . .	1	48	0.1	1	1
Indiana . . . . .	29	13	2.3	-	29	Tennessee . . . . .	15	27	1.2	4	11
Iowa . . . . .	17	22	1.3	1	16	Texas . . . . .	36	10	2.9	4	32
Kansas . . . . .	11	35	0.9	2	9	Utah . . . . .	19	19	1.5	4	15
Kentucky . . . . .	16	26	1.3	1	15	Vermont . . . . .	7	43	0.3	-	7
Louisiana . . . . .	17	22	1.3	1	16	Virginia . . . . .	29	13	2.3	9	20
Maine . . . . .	12	32	1.0	3	9	Washington . . . . .	46	7	3.7	14	32
Maryland . . . . .	19	19	1.5	8	11	West Virginia . . . . .	8	41	0.6	2	6
Massachusetts . . . . .	31	12	2.5	8	23	Wisconsin . . . . .	40	9	3.2	-	40
Michigan . . . . .	70	5	5.6	1	69	Wyoming . . . . .	2	47	0.2	1	1
Minnesota . . . . .	26	15	2.1	2	24	Guam . . . . .	2	(X)	(X)	1	1
Mississippi . . . . .	3	46	0.2	-	3	Puerto Rico . . . . .	10	(X)	(X)	-	10
Missouri . . . . .	25	18	2.0	3	22	Virgin Islands . . . . .	2	(X)	(X)	2	-

- Represents zero. X Not applicable.

Source: U.S. Environmental Protection Agency, *Supplementary Materials: National Priorities List, Proposed Rule*, December 1999.



## No. 403. Environmental Industry—Revenues and Employment by Industry Segment: 1990 to 1999

[59.0 represents \$59,000,000.00. 1999 is a projection. Covers approximately 59,000 private and public companies engaged in environmental activities]

Industry segment	Revenue (bil. dol.)					Employment (1,000)				
	1990	1995	1997	1998	1999	1990	1995	1997	1998	1999
<b>Industry total</b> . . . . .	<b>150.3</b>	<b>179.5</b>	<b>186.1</b>	<b>189.8</b>	<b>197.7</b>	<b>1,174.3</b>	<b>1,327.0</b>	<b>1,351.5</b>	<b>1,357.6</b>	<b>(NA)</b>
Analytical services <sup>1</sup> . . . . .	1.5	1.2	1.1	1.1	1.1	20.2	14.1	13.0	13.6	(NA)
Wastewater treatment works <sup>2</sup> . . . . .	20.4	23.4	24.4	25.6	26.3	95.0	101.5	105.7	107.5	(NA)
Solid waste management <sup>3</sup> . . . . .	26.1	32.5	34.9	36.1	36.9	209.5	243.4	249.3	250.7	(NA)
Hazardous waste management <sup>4</sup> . . . . .	6.3	6.2	5.8	5.7	5.5	56.9	52.5	50.9	46.1	(NA)
Remediation/industrial services . . . . .	11.1	11.1	11.2	11.0	11.6	107.2	98.1	119.8	113.5	(NA)
Consulting & engineering . . . . .	12.5	15.5	15.3	15.8	15.9	144.2	180.2	170.1	171.5	(NA)
Water equipment & chemicals . . . . .	13.5	16.5	18.2	19.1	20.0	97.9	110.2	124.7	128.3	(NA)
Instrument manufacturing <sup>5</sup> . . . . .	2.0	3.0	3.3	3.3	3.5	18.8	26.2	28.3	27.7	(NA)
Air pollution control equipment <sup>6</sup> . . . . .	13.1	14.8	15.7	16.5	17.1	82.7	107.2	106.7	113.2	(NA)
Waste management equipment <sup>6</sup> . . . . .	8.7	9.9	9.8	9.5	9.7	88.8	93.8	73.2	75.7	(NA)
Process & prevention technology . . . . .	0.4	0.8	0.9	1.0	1.1	8.9	19.5	22.5	26.7	(NA)
Water utilities <sup>7</sup> . . . . .	19.8	25.3	27.6	28.8	29.4	104.7	118.2	125.7	126.4	(NA)
Resource recovery <sup>8</sup> . . . . .	13.1	16.9	15.3	13.3	16.4	118.4	136.0	132.8	125.0	(NA)
Environmental energy sources <sup>9</sup> . . . . .	1.8	2.4	2.7	3.0	3.1	21.1	26.1	28.8	31.7	(NA)

NA Not available. <sup>1</sup> Covers environmental laboratory testing and services. <sup>2</sup> Mostly revenues collected by municipal entities. <sup>3</sup> Covers such activities as collection, transportation, transfer stations, disposal, landfill ownership and management for solid waste. <sup>4</sup> Transportation and disposal of hazardous, medical and nuclear waste. <sup>5</sup> Includes stationery and mobile sources. <sup>6</sup> Includes vehicles, containers, liners, processing and remediation equipment. <sup>7</sup> Revenues generated from the sale of water. <sup>8</sup> Revenues generated from the sale of recovered metals, paper, plastic, etc. <sup>9</sup> Includes solar, wind, geothermal and conservation devices.

Source: Environmental Business International, Inc., San Diego, CA, *Environmental Business Journal*, monthly (copyright).

## No. 404. Threatened and Endangered Wildlife and Plant Species—Number: 2000

[As of April. Endangered species: One in danger of becoming extinct throughout all or a significant part of its natural range. Threatened species: One likely to become endangered in the foreseeable future]

Item	Mam- mals	Birds	Rep- tiles	Amphib- ians	Fishes	Snails	Clams	Crusta- ceans	Insects	Arach- nids	Plants
Total listings . . . . .	339	274	115	27	123	32	71	21	42	6	705
<b>Endangered species,</b> <b>total</b> . . . . .	<b>314</b>	<b>253</b>	<b>79</b>	<b>18</b>	<b>79</b>	<b>21</b>	<b>63</b>	<b>18</b>	<b>34</b>	<b>6</b>	<b>566</b>
United States . . . . .	63	77	14	10	68	20	61	18	30	6	565
Foreign . . . . .	251	176	65	8	11	1	2	-	4	-	1
<b>Threatened species,</b> <b>total</b> . . . . .	<b>25</b>	<b>21</b>	<b>36</b>	<b>9</b>	<b>44</b>	<b>11</b>	<b>8</b>	<b>3</b>	<b>8</b>	<b>-</b>	<b>139</b>
United States . . . . .	9	15	22	8	44	11	8	3	8	-	139
Foreign . . . . .	16	6	14	1	-	-	-	-	-	-	-

- Represents zero.

Source: U.S. Fish and Wildlife Service, *Endangered Species Technical Bulletin*, quarterly.

## No. 405. Tornadoes, Floods, Tropical Storms, and Lightning: 1988 to 1998

Weather type	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Tornadoes, number <sup>1</sup> . . . . .	702	856	1,133	1,132	1,298	1,176	1,082	1,235	1,170	1,148	(NA)
Tornado days . . . . .	156	160	181	179	195	186	199	178	196	196	(NA)
Lives lost, total . . . . .	32	50	53	39	39	33	69	30	25	67	(NA)
Most in a single tornado . . . . .	5	21	29	17	12	7	22	6	5	27	(NA)
Floods and flash floods: Lives lost . . . . .	31	85	142	61	62	103	91	80	131	117	(NA)
North Atlantic tropical storms and hurricanes <sup>2</sup> . . . . .	12	11	14	8	7	8	7	19	13	7	14
Number of hurricanes reaching U.S. mainland . . . . .	1	3	-	1	1	1	-	2	2	1	3
Total direct deaths from tropical storms and hurricanes . . . . .	550	84	123	17	28	273	1,175	121	138	4	(NA)
Direct deaths on U.S. mainland . . . . .	6	56	10	17	26	9	38	29	33	4	23
Property loss in U.S. (mil. dol.) . . . . .	59	7,670	57	1,500	26,500	57	973	3,729	3,600	100	7,299
Lightning: Deaths . . . . .	69	67	74	73	41	43	74	85	52	42	(NA)
Injuries . . . . .	311	322	252	432	292	295	577	510	309	306	(NA)

- Represents zero. NA Not available. <sup>1</sup> A violent, rotating column of air descending from a cumulonimbus cloud in the form of a tubular- or funnel-shaped cloud, usually characterized by movements along a narrow path and wind speeds from 100 to over 300 miles per hour. Also known as a "twister" or "waterspout." <sup>2</sup> Source: National Hurricane Center, Coral Gables, FL, unpublished data. Tropical storms have maximum winds of 39 to 73 miles per hour; hurricanes have maximum winds of 74 miles per hour or higher.

Source: Except as noted, U.S. National Oceanic and Atmospheric Administration, *Storm Data*, monthly.

## No. 406. Major U.S. Weather Disasters: 1980 to 1999

[1.3 represents \$1,300,000,000. Covers only weather related disasters costing \$1 billion or more]

Event	Description	Estimated cost		
		Time period	(bil. dol.)	Deaths
Hurricane Floyd . . . . .	Category 2 hurricane in NC, causing severe flooding in NC and some flooding in SC, VA, MD, PA, NY, NJ, DE, RI, CT, MA, and VT. . . . .	Sept. 1999	6.0	75
Drought/heat wave . . . . .	Drought/heatwave over eastern U.S. . . . .	Summer 1999	1.0	256
Oklahoma-Kansas tornadoes . . . . .	Category F4-F5 tornados hit OK, KS, TX, and TN . . . . .	May 1999	1.0	55
Arkansas-Tennessee tornadoes . . . . .	Two outbreaks of tornadoes in 6-day period . . . . .	January 1999	1.3	31
Texas flooding . . . . .	Severe flooding in southeast Texas from 2 heavy rain events with 10-20 in. totals. . . . .	Oct.-Nov. 1998	1.0	31
Hurricane Georges . . . . .	Category 2 hurricane in Puerto Rico, Florida Keys, and Gulf coasts of LA, MS, AL, and FL . . . . .	Sept. 1998	3-4	16
Hurricane Bonnie . . . . .	Category 3 hurricane in eastern NC and VA . . . . .	August 1998	1.0	2
Southern drought/heat wave . . . . .	Severe drought and heat wave from TX/OK eastward to the Carolinas . . . . .	Summer 1998	6.0	200
Minnesota severe storms/hail. . . . .	Very damaging severe thunderstorms with large hail over wide areas of Minnesota . . . . .	May 1998	1.5	1
Southeast severe weather . . . . .	Tornadoes and flooding related to strong El Nino in the southeast . . . . .	Winter/spring 1998	1.0	Over 130
Northeast ice storm . . . . .	Intense ice storm hits ME, NH, VT, and NY . . . . .	January 1998	1.4	16
Northern plains flooding. . . . .	Severe flooding in Dakotas and Minnesota due to heavy spring snowmelt . . . . .	April-May 1997	2.0	11
MS and OH valleys flooding and tornadoes . . . . .	Tornadoes and severe flooding hit the states of AR, MO, MS, TN, IL, IN, KY, OH, and WV . . . . .	March 1997	1.0	67
West Coast flooding . . . . .	Flooding from rains and snowmelt in CA, WA, OR, ID, NV, & MT . . . . .	Dec. 1996-Jan. 1999	2-3	36
Hurricane Fran. . . . .	Category 3 hurricane in NC and VA. . . . .	Sept. 1996	5.0	37
Southern Plains severe drought . . . . .	Drought in agricultural areas of TX & OK . . . . .	Fall 1995-summer 1996	Over 4	(NA)
Pacific Northwest severe flooding . . . . .	Flooding from heavy rain & snowmelt in OR, WA, ID, and MT . . . . .	Feb. 1996	1.0	9
Blizzard of '96 followed by flooding . . . . .	Heavy snowstorm followed by severe flooding in Appalachians, Mid-Atlantic, and Northeast . . . . .	Jan. 1996	3.0	187
Hurricane Opal . . . . .	Category 3 hurricane in FL, AL, parts of GA, TN, & Carolinas . . . . .	Oct. 1995	Over 3	27
Hurricane Marilyn . . . . .	Category 2 hurricane in Virgin Islands . . . . .	Sept. 1995	2.1	13
TX/OK/LA/MS severe weather and flooding. . . . .	Flooding, hail, & tornadoes across TX, OK, parts of LA, MS, Dallas & New Orleans hardest hit . . . . .	May 1995	5-6	32
California flooding. . . . .	Flooding from frequent winter storms across much of CA . . . . .	Jan.-Mar. 1995	3.0	27
Western Fire Season . . . . .	Severe fire season in western states due to dry weather . . . . .	Summer-fall 1994	1.0	(NA)
Texas flooding . . . . .	Flooding from torrential rain & thunderstorms across southeast TX . . . . .	Oct. 1994	1.0	19
Tropical Storm Alberto . . . . .	Flooding due to 10 to 25 inch rain across GA, AL, part of FL . . . . .	July 1994	1.0	32
Southeast ice storm . . . . .	Intense ice storm in pts of TX, OK, AR, LA, MS, AL, TN, GA, SC, NC, & VA . . . . .	Feb. 1994	3.0	9
California wildfires . . . . .	Out-of-control wildfires over southern CA . . . . .	Fall 1993	1.0	4
Midwest wildfires . . . . .	Extreme flooding across central U.S. . . . .	Summer 1993	15-20	48
Drought/heat wave . . . . .	Extreme drought/heatwave across southeastern U.S. . . . .	Summer 1993	1.0	(NA)
Storm/blizzard . . . . .	"Storm of the Century" hits entire eastern seaboard . . . . .	Mar. 1993	3-6	270
Nor'easter of 1992 . . . . .	Slow-moving storm batters northeast U.S. coast, New England hardest hit . . . . .	Dec. 1992	1-2	19
Hurricane Iniki . . . . .	Category 4 hurricane hit Hawaiian island of Kauai . . . . .	Sept. 1992	1.8	7
Hurricane Andrew. . . . .	Category 4 hurricane hit FL & LA . . . . .	Aug. 1992	27.0	58
Oakland Firestorm . . . . .	Oakland, CA firestorm due to low humidity & high winds . . . . .	Oct. 1991	1.5	25
Hurricane Bob . . . . .	Category 2 hurricane—mainly coastal NC, Long Island, & New England . . . . .	Aug. 1991	1.5	18
TX/OK/LA/AR Flooding . . . . .	Torrential rains cause flooding along Trinity, Red, and Arkansas rivers . . . . .	May 1990	1.0	13
Hurricane Hugo . . . . .	Category 4 hurricane hit Puerto Rico & Virgin Islands, devastated NC & SC . . . . .	Sept. 1989	Over 9	86
Drought/Heat Wave . . . . .	Drought/heatwave over central & eastern U.S. . . . .	Summer 1988	40.0	5,000-10,000
Hurricane Juan . . . . .	Category 1 hurricane, flooding most severe problem, hit AL and southeast U.S. . . . .	Oct.-Nov. 1985	1.5	63
Hurricane Elena . . . . .	Category 3 hurricane across FL to LA . . . . .	Aug.-Sept. 1985	1.3	4
Florida Freeze . . . . .	Severe freeze central/northern FL, damage to citrus industry . . . . .	Jan. 1985	1.2	-
Florida Freeze . . . . .	Severe freeze central/northern FL, damage to citrus industry . . . . .	Dec. 1983	2.0	-
Hurricane Alicia . . . . .	Category 3 hurricane across TX . . . . .	Aug. 1983	3.0	21
Drought/heat wave . . . . .	Drought/heatwave over central & eastern U.S. . . . .	June-Sept. 1980	20.0	10,000

- Represents zero. NA Not available or not reported.

Source: U.S. National Oceanic and Atmospheric Administration, National Climatic Data Center. "Billion Dollar U.S. Weather Disasters," (release date April 10, 2000) <<http://www.ncdc.noaa.gov/ol/reports/billionz.html>>.

**No. 407. Highest and Lowest Temperatures by State Through 1998**

State	Highest temperatures			Lowest temperatures		
	Station	Temperature (F)	Date	Station	Temperature (F)	Date
<b>U.S. . . . .</b>	<b>Greenland Ranch, CA. . . . .</b>	<b>134</b>	<b>Jul. 10, 1913</b>	<b>Prospect Creek, AK . . . . .</b>	<b>-80</b>	<b>Jan. 23, 1971</b>
AL . . . . .	Centerville . . . . .	112	Sep. 5, 1925	New Market . . . . .	-27	Jan. 30, 1966
AK . . . . .	Fort Yukon . . . . .	100	<sup>1</sup> Jun. 27, 1915	Prospect Creek Camp . . . . .	-80	Jan. 23, 1971
AZ . . . . .	Lake Havasu City . . . . .	128	Jun. 29, 1994	Hawley Lake . . . . .	-40	Jan. 7, 1971
AR . . . . .	Ozark . . . . .	120	Aug. 10, 1936	Pond . . . . .	-29	Feb. 13, 1905
CA . . . . .	Greenland Ranch . . . . .	134	Jul. 10, 1913	Boca . . . . .	-45	Jan. 20, 1937
CO . . . . .	Bennett . . . . .	118	Jul. 11, 1888	Maybell . . . . .	-61	Feb. 1, 1985
CT . . . . .	Danbury . . . . .	106	Jul. 15, 1995	Falls Village . . . . .	-32	Feb. 16, 1943
DE . . . . .	Millsboro . . . . .	110	Jul. 21, 1930	Millsboro . . . . .	-17	Jan. 17, 1893
FL . . . . .	Monticello . . . . .	109	Jun. 29, 1931	Tallahassee . . . . .	-2	Feb. 13, 1899
GA . . . . .	Greenville . . . . .	112	Aug. 20, 1983	CCC Camp F-16 . . . . .	-17	<sup>1</sup> Jan. 27, 1940
HI . . . . .	Pahala . . . . .	100	Apr. 27, 1931	Mauna Kea Obs. 111.2 . . . . .	12	May 17, 1979
ID . . . . .	Orofino . . . . .	118	Jul. 28, 1934	Island Park Dam . . . . .	-60	Jan. 18, 1943
IL . . . . .	East St. Louis . . . . .	117	Jul. 14, 1954	Elizabeth . . . . .	-35	<sup>2</sup> Feb. 3, 1996
IN . . . . .	Collegeville . . . . .	116	Jul. 14, 1936	New Whiteland . . . . .	-36	Jan. 19, 1994
IA . . . . .	Keokuk . . . . .	118	Jul. 20, 1934	Elkader . . . . .	-47	<sup>2</sup> Feb. 3, 1996
KS . . . . .	Alton (near) . . . . .	121	<sup>2</sup> Jul. 24, 1936	Lebanon . . . . .	-40	Feb. 13, 1905
KY . . . . .	Greensburg . . . . .	114	Jul. 28, 1930	Shelbyville . . . . .	-37	Jan. 19, 1994
LA . . . . .	Plain Dealing . . . . .	114	Aug. 10, 1936	Minden . . . . .	-16	Feb. 13, 1899
ME . . . . .	North Bridgton . . . . .	105	<sup>2</sup> Jul. 10, 1911	Van Buren . . . . .	-48	Jan. 19, 1925
MD . . . . .	Cumberland & Frederick . . . . .	109	<sup>2</sup> Jul. 10, 1936	Oakland . . . . .	-40	Jan. 13, 1912
MA . . . . .	New Bedford & Chester . . . . .	107	Aug. 2, 1975	Chester . . . . .	-35	Jan. 12, 1981
MI . . . . .	Mio . . . . .	112	Jul. 13, 1936	Vanderbilt . . . . .	-51	Feb. 9, 1934
MN . . . . .	Moorhead . . . . .	114	<sup>2</sup> Jul. 6, 1936	Tower . . . . .	-60	Feb. 2, 1996
MS . . . . .	Holly Springs . . . . .	115	Jul. 29, 1930	Corinth . . . . .	-19	Jan. 30, 1966
MO . . . . .	Warsaw & Union . . . . .	118	<sup>2</sup> Jul. 14, 1954	Warsaw . . . . .	-40	Feb. 13, 1905
MT . . . . .	Medicine Lake . . . . .	117	Jul. 5, 1937	Rogers Pass . . . . .	-70	Jan. 20, 1954
NE . . . . .	Minden . . . . .	118	<sup>2</sup> Jul. 24, 1936	Camp Clarke . . . . .	-47	Feb. 12, 1899
NV . . . . .	Laughlin . . . . .	125	Jun. 29, 1994	San Jacinto . . . . .	-50	Jan. 8, 1937
NH . . . . .	Nashua . . . . .	106	Jul. 4, 1911	Mt. Washington . . . . .	-47	Jan. 29, 1934
NJ . . . . .	Runyon . . . . .	110	Jul. 10, 1936	River Vale . . . . .	-34	Jan. 5, 1904
NM . . . . .	Waste Isolat Pilot Plt . . . . .	122	Jun. 27, 1994	Gavilan . . . . .	-50	Feb. 1, 1951
NY . . . . .	Troy . . . . .	108	Jul. 22, 1926	Old Forge . . . . .	-52	<sup>2</sup> Feb. 18, 1979
NC . . . . .	Fayetteville . . . . .	110	Aug. 21, 1983	Mt. Mitchell . . . . .	-34	Jan. 21, 1985
ND . . . . .	Steele . . . . .	121	Jul. 6, 1936	Parshall . . . . .	-60	Feb. 15, 1936
OH . . . . .	Gallipolis (near) . . . . .	113	<sup>2</sup> Jul. 21, 1934	Milligan . . . . .	-39	Feb. 10, 1899
OK . . . . .	Tipton . . . . .	120	<sup>2</sup> Jun. 27, 1994	Watts . . . . .	-27	Jan. 18, 1930
OR . . . . .	Pendleton . . . . .	119	Aug. 10, 1898	Seneca . . . . .	-54	<sup>2</sup> Feb. 10, 1933
PA . . . . .	Phoenixville . . . . .	111	<sup>2</sup> Jul. 10, 1936	Smethport . . . . .	-42	<sup>1</sup> Jan. 5, 1904
RI . . . . .	Providence . . . . .	104	Aug. 2, 1975	Kingston . . . . .	-23	Jan. 11, 1942
SC . . . . .	Camden . . . . .	111	<sup>2</sup> Jun. 28, 1954	Caesars Head . . . . .	-19	Jan. 21, 1985
SD . . . . .	Gannvalley . . . . .	120	Jul. 5, 1936	McIntosh . . . . .	-58	Feb. 17, 1936
TN . . . . .	Perryville . . . . .	113	<sup>2</sup> Aug. 9, 1930	Mountain City . . . . .	-32	Dec. 30, 1917
TX . . . . .	Seymour . . . . .	120	Aug. 12, 1936	Seminole . . . . .	-23	<sup>2</sup> Feb. 8, 1933
UT . . . . .	Saint George . . . . .	117	Jul. 5, 1985	Peter's Sink . . . . .	-69	Feb. 1, 1985
VT . . . . .	Vernon . . . . .	105	Jul. 4, 1911	Bloomfield . . . . .	-50	Dec. 30, 1933
VA . . . . .	Balcony Falls . . . . .	110	Jul. 15, 1954	Mtn. Lake Bio. Stn. . . . .	-30	Jan. 22, 1985
WA . . . . .	Ice Harbor Dam . . . . .	118	<sup>2</sup> Aug. 5, 1961	Mazama & Winthrop . . . . .	-48	Dec. 30, 1968
WV . . . . .	Martinsburg . . . . .	112	<sup>2</sup> Jul. 10, 1936	Lewisburg . . . . .	-37	Dec. 30, 1917
WI . . . . .	Wisconsin Dells . . . . .	114	Jul. 13, 1936	Couderay . . . . .	-55	Feb. 4, 1996
WY . . . . .	Basin . . . . .	114	Jul. 12, 1900	Riverside R.S. . . . . .	-66	Feb. 9, 1933

<sup>1</sup> Estimated. <sup>2</sup> Also on earlier dates at the same or other places.

Source: U.S. National Oceanic and Atmospheric Administration, <<http://www.ncdc.noaa.gov/ol/climate/severeweather/temperatures.html>> (released 03 March 2000).

## No. 408. Normal Daily Mean, Maximum, and Minimum Temperatures— Selected Cities

[In Fahrenheit degrees. Airport data except as noted. Based on standard 30-year period, 1961 through 1990]

State	Station	Daily mean temperature			Daily maximum temperature			Daily minimum temperature		
		Jan.	July	Annual average	Jan.	July	Annual average	Jan.	July	Annual average
AL	Mobile . . . . .	49.9	82.3	67.5	59.7	91.3	77.4	40.0	73.2	57.4
AZ	Juneau . . . . .	24.2	56.0	40.6	29.4	63.9	46.9	19.0	48.1	34.1
AK	Phoenix . . . . .	53.6	93.5	72.6	65.9	105.9	85.9	41.2	81.0	59.3
AR	Little Rock . . . . .	39.1	81.9	61.8	49.0	92.4	72.5	29.1	71.5	51.0
CA	Los Angeles . . . . .	56.8	69.1	63.0	65.7	75.3	70.4	47.8	62.8	55.5
	Sacramento . . . . .	45.2	75.7	60.8	52.7	93.2	73.5	37.7	58.1	48.1
	San Diego . . . . .	57.4	71.0	64.2	65.9	76.2	70.8	48.9	65.7	57.6
	San Francisco . . . . .	48.7	62.7	57.1	55.6	71.6	65.2	41.8	53.9	49.0
CO	Denver . . . . .	29.7	73.5	50.3	43.2	88.2	64.2	16.1	58.6	36.2
CT	Hartford . . . . .	24.6	73.7	49.9	33.2	85.0	60.2	15.8	62.2	39.5
DE	Wilmington . . . . .	30.6	76.4	54.2	38.7	85.6	63.6	22.4	67.1	44.8
DC	Washington . . . . .	34.6	80.0	58.0	42.3	88.5	66.9	26.8	71.4	49.2
FL	Jacksonville . . . . .	52.4	81.6	68.0	64.2	91.4	78.9	40.5	71.9	57.1
	Miami . . . . .	67.2	82.6	75.9	75.2	89.0	82.8	59.2	76.2	69.0
GA	Atlanta . . . . .	41.0	78.8	61.3	50.4	88.0	71.2	31.5	69.5	51.3
HI	Honolulu . . . . .	72.9	80.5	77.2	80.1	87.5	84.4	65.6	73.5	70.0
ID	Boise . . . . .	29.0	74.0	50.9	36.4	90.2	62.8	21.6	67.7	39.1
IL	Chicago . . . . .	21.0	73.2	49.0	29.0	83.7	58.6	12.9	62.6	39.5
	Peoria . . . . .	21.6	75.5	50.7	29.9	85.7	60.4	13.2	65.4	41.0
IN	Indianapolis . . . . .	25.5	75.4	52.3	33.7	85.5	62.1	17.2	65.2	42.4
IA	Des Moines . . . . .	19.4	76.6	49.9	28.1	86.7	59.8	10.7	66.5	40.0
KS	Wichita . . . . .	29.5	81.4	56.2	39.8	92.8	67.4	19.2	69.9	45.0
KY	Louisville . . . . .	31.7	77.2	56.1	40.3	87.0	66.0	23.2	67.3	46.0
LA	New Orleans . . . . .	51.3	81.9	68.1	60.8	90.6	77.6	41.8	73.1	58.5
ME	Portland . . . . .	20.8	68.6	45.4	30.3	78.8	54.9	11.4	58.3	35.8
MA	Baltimore . . . . .	31.8	77.0	55.1	40.2	87.2	65.0	23.4	66.8	45.2
MD	Boston . . . . .	28.6	73.5	51.3	35.7	81.8	59.0	21.6	65.1	43.6
MI	Detroit . . . . .	22.9	72.3	48.6	30.3	83.3	58.1	15.6	61.3	39.0
	Sault Ste. Marie . . . . .	12.9	63.8	39.7	21.1	76.3	49.6	4.6	51.3	29.8
MN	Duluth . . . . .	7.0	66.1	38.5	16.2	77.1	47.9	-2.2	55.1	29.0
	Minneapolis-St. Paul . . . . .	11.8	73.6	44.9	20.7	84.0	54.3	2.8	63.1	35.3
MS	Jackson . . . . .	44.1	81.5	64.2	55.6	92.4	76.4	32.7	70.5	52.0
MO	Kansas City . . . . .	25.7	78.5	53.6	34.7	88.7	63.6	16.7	68.2	43.7
	St. Louis . . . . .	29.3	79.8	56.1	37.7	89.3	65.4	20.8	70.4	46.7
MT	Great Falls . . . . .	21.2	68.2	44.8	30.6	83.3	56.4	11.6	53.2	33.1
NE	Omaha . . . . .	21.1	76.9	50.6	31.3	87.9	61.5	10.9	65.9	39.5
NE	Reno . . . . .	32.9	71.6	50.8	45.1	91.9	66.8	20.7	51.3	34.7
NH	Concord . . . . .	18.6	69.5	45.1	29.8	82.4	57.0	7.4	56.5	33.1
NJ	Atlantic City . . . . .	30.9	74.7	53.0	40.4	84.5	63.2	21.4	64.8	42.8
NM	Albuquerque . . . . .	34.2	78.5	56.2	46.8	92.5	70.1	21.7	64.4	42.2
NY	Albany . . . . .	20.6	71.8	47.4	30.2	84.0	58.1	11.0	59.6	36.6
	Buffalo . . . . .	23.6	71.1	47.7	30.2	80.2	55.8	17.0	61.9	39.5
	New York . . . . .	31.5	76.8	54.7	37.6	85.2	62.3	25.3	68.4	47.1
NC	Charlotte . . . . .	39.3	79.3	60.1	49.0	88.9	70.4	29.6	69.6	49.7
	Raleigh . . . . .	38.9	78.1	59.3	48.9	88.0	70.1	28.8	68.1	48.4
ND	Bismarck . . . . .	9.2	70.4	41.6	20.2	84.4	53.8	-1.7	56.4	29.4
OH	Cincinnati . . . . .	28.1	75.1	53.2	36.6	85.5	63.2	19.5	64.8	43.2
	Cleveland . . . . .	24.8	71.9	49.6	31.9	82.4	58.7	17.6	61.4	40.5
	Columbus . . . . .	26.4	73.2	51.4	34.1	83.7	61.2	18.5	62.7	41.6
OK	Oklahoma City . . . . .	35.9	82.0	60.0	46.7	93.4	71.1	25.2	70.6	48.8
OR	Portland . . . . .	39.6	68.2	53.6	45.4	79.9	62.6	33.7	56.5	44.5
PA	Philadelphia . . . . .	30.4	76.7	54.3	37.9	86.1	63.4	22.8	67.2	45.1
	Pittsburgh . . . . .	26.1	72.1	50.3	33.7	82.6	59.9	18.5	61.6	40.7
	Providence . . . . .	27.9	72.7	50.4	36.6	82.1	59.8	19.1	63.2	41.0
RI	Columbia . . . . .	43.8	80.8	63.1	55.3	91.6	75.1	32.1	70.0	50.9
SC	Sioux Falls . . . . .	13.8	74.3	45.5	24.3	86.3	56.8	3.3	62.3	34.2
SD	Memphis . . . . .	39.7	82.6	62.3	48.5	92.3	72.1	30.9	72.9	52.4
	Nashville . . . . .	36.2	79.3	59.1	45.9	89.5	69.8	26.5	68.9	48.4
TX	Dallas-Fort Worth . . . . .	43.4	85.3	65.4	54.1	96.5	76.3	32.7	74.1	54.6
	El Paso . . . . .	42.8	82.3	63.2	56.1	96.1	77.5	29.4	68.4	49.0
	Houston . . . . .	50.4	82.6	67.9	61.0	92.7	78.6	39.7	72.4	57.3
UT	Salt Lake City . . . . .	27.9	77.9	52.0	36.4	92.2	63.6	19.3	63.7	40.3
VT	Burlington . . . . .	16.3	70.5	44.6	25.1	81.2	54.0	7.5	59.7	35.2
VA	Norfolk . . . . .	39.1	78.2	59.2	47.3	86.4	67.8	30.9	70.0	50.6
	Richmond . . . . .	35.7	78.0	57.7	45.7	88.4	68.8	25.7	67.5	46.6
WA	Seattle-Tacoma . . . . .	40.1	65.2	52.0	45.0	75.2	59.4	35.2	55.2	44.6
	Spokane . . . . .	27.1	68.8	47.3	33.2	83.1	57.5	20.8	54.4	36.9
WV	Charleston . . . . .	32.1	75.1	55.0	41.2	85.7	65.8	23.0	64.4	44.2
WI	Milwaukee . . . . .	18.9	70.9	46.1	26.1	79.9	54.3	11.6	62.0	37.9
WY	Cheyenne . . . . .	26.5	68.4	45.6	37.7	82.2	58.0	15.2	54.6	33.2
PR	San Juan . . . . .	77.0	82.6	80.2	83.2	88.5	86.4	70.8	76.8	74.0

<sup>1</sup> City office data.

Source: U.S. National Oceanic and Atmospheric Administration, *Climatology of the United States*, No. 81.

## No. 409. Highest Temperature of Record—Selected Cities

[In Fahrenheit degrees. Airport data, except as noted. For period of record through 1998]

State	Station	Length of record (yr.)	Month												Annual
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
AL	Mobile	57	84	82	90	94	100	102	104	102	99	93	87	81	104
AK	Juneau	54	57	57	61	72	82	86	90	83	73	61	56	54	90
AZ	Phoenix	61	88	92	100	105	113	122	121	116	118	107	93	88	122
AR	Little Rock	57	83	85	91	95	98	105	112	108	106	97	86	80	112
CA	Los Angeles	63	88	92	95	102	97	104	97	98	110	106	101	94	110
	Sacramento	48	70	76	88	95	105	115	114	110	108	101	87	72	115
	San Diego	58	88	90	93	98	96	101	95	98	111	107	97	88	111
	San Francisco	71	72	78	85	92	97	106	105	100	103	99	85	75	106
CO	Denver	61	73	76	84	90	96	104	104	101	97	89	79	75	104
CT	Hartford	44	65	73	89	96	99	100	102	101	99	91	81	76	102
DE	Wilmington	51	75	78	86	94	96	100	102	101	100	91	85	75	102
DC	Washington	57	79	82	89	95	99	101	104	105	101	94	86	79	105
FL	Jacksonville	57	85	88	91	95	100	103	105	102	100	96	88	84	105
	Miami	56	88	89	92	96	96	98	98	98	97	95	89	87	98
GA	Atlanta	50	79	80	89	93	95	101	105	102	98	95	84	79	105
HI	Honolulu	29	88	88	88	91	93	92	94	93	95	94	93	89	95
ID	Boise	59	63	71	81	92	98	109	111	110	102	94	74	65	111
IL	Chicago	40	65	71	88	91	93	104	104	101	99	91	78	71	104
	Peoria	59	70	72	86	92	93	105	103	103	100	90	81	71	105
IN	Indianapolis	59	71	74	85	89	93	102	104	102	100	90	81	74	104
IA	Des Moines	59	65	73	91	93	98	103	105	108	101	95	76	69	108
KS	Wichita	46	75	87	89	96	100	110	113	110	107	95	85	83	113
KY	Louisville	51	77	77	86	91	95	102	105	101	104	92	84	76	105
LA	New Orleans	52	83	85	89	92	96	100	101	102	101	94	87	84	102
MA	Portland	58	64	64	88	85	94	98	99	103	95	88	74	71	103
MD	Baltimore	48	75	79	89	94	98	101	104	105	100	92	83	77	105
MA	Boston	47	66	70	89	94	95	100	102	102	100	90	79	76	102
MI	Detroit	40	62	65	81	89	93	104	102	100	98	91	77	69	104
	Sault Ste. Marie	58	45	47	75	85	89	93	97	98	95	80	67	60	98
MN	Duluth	57	52	55	78	88	90	94	97	97	95	86	70	55	97
	Minneapolis-St. Paul	60	58	60	83	95	96	102	105	102	98	90	75	68	105
MS	Jackson	35	82	85	89	94	99	105	106	102	104	95	88	84	106
MO	Kansas City	26	69	77	86	93	95	105	107	109	102	92	82	70	109
	St. Louis	41	76	85	89	93	94	102	107	107	104	94	85	76	107
MT	Great Falls	61	67	70	78	89	93	101	105	106	98	91	76	69	106
NE	Omaha	62	69	78	89	97	99	105	114	110	104	96	80	72	114
NH	Reno	57	70	75	83	89	96	103	104	105	101	91	77	70	105
NH	Concord	57	68	67	89	95	97	98	102	101	98	90	80	73	102
NJ	Atlantic City	55	78	75	87	94	99	106	104	102	99	90	84	77	106
NY	Albuquerque	59	69	76	85	89	98	107	105	101	100	91	77	72	107
	Albany	52	65	68	89	92	94	99	100	99	100	89	82	71	100
	Buffalo	55	72	70	81	94	90	96	97	99	98	87	80	74	99
	New York <sup>1</sup>	130	72	75	86	96	99	101	106	104	102	94	84	75	106
NC	Charlotte	59	78	81	90	93	100	103	103	103	104	98	85	78	104
	Raleigh	54	79	84	92	95	97	104	105	105	104	98	88	80	105
ND	Bismarck	59	62	69	81	93	98	107	109	109	105	95	75	65	109
OH	Cincinnati	37	69	73	84	89	93	102	103	102	98	88	81	75	103
	Cleveland	57	73	70	83	88	92	104	103	102	101	90	82	77	104
	Columbus	59	74	73	85	89	94	102	100	101	100	90	80	76	102
OK	Oklahoma City	45	80	92	93	100	104	105	110	110	107	96	87	86	110
OR	Portland	58	63	71	80	90	100	100	107	107	105	92	73	65	107
PA	Philadelphia	57	74	74	87	94	97	100	104	101	100	96	81	73	104
	Pittsburgh	46	69	73	82	89	91	98	103	100	97	87	82	74	103
RI	Providence	45	69	72	85	98	95	97	102	104	100	86	78	77	104
SC	Columbia	51	84	84	91	94	101	107	107	107	101	101	90	83	107
SD	Sioux Falls	53	66	70	87	94	100	110	108	108	104	94	76	63	110
TN	Memphis	57	78	81	85	94	99	104	108	105	103	95	85	81	108
	Nashville	59	78	84	86	91	97	106	107	104	105	94	84	79	107
TX	Dallas-Fort Worth	45	88	95	96	95	103	113	110	108	108	102	89	88	113
	El Paso	59	80	83	89	98	104	114	112	108	104	96	87	80	114
	Houston	29	84	91	91	95	99	103	104	107	102	96	89	85	107
UT	Salt Lake City	70	62	69	78	86	95	104	107	106	100	89	75	69	107
VT	Burlington	55	66	62	84	91	93	100	100	101	94	85	75	67	101
VA	Norfolk	50	78	82	88	97	100	101	103	104	99	95	86	80	104
	Richmond	69	80	83	93	96	100	104	105	102	103	99	86	81	105
WA	Seattle-Tacoma	54	64	70	75	85	93	96	100	99	98	89	74	64	100
	Spokane	51	59	63	71	90	96	101	103	108	98	86	67	56	108
WV	Charleston	51	79	78	89	94	93	98	104	101	102	92	85	80	104
WI	Milwaukee	58	62	65	82	91	93	101	103	103	98	89	77	64	103
WY	Cheyenne	63	66	71	74	83	90	100	100	96	95	83	73	69	100
PR	San Juan	44	92	96	96	97	96	97	95	97	97	98	96	94	98

<sup>1</sup> City office data.

Source: U.S. National Oceanic and Atmospheric Administration, *Comparative Climatic Data*, annual.





## No. 412. Average Number of Days With Precipitation of .01 Inch or More— Selected Cities

[Airport data, except as noted. For period of record through 1998]

State	Station	Length of record (yr.)	Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.												Annual
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
AL	Mobile . . . . .	57	11	10	10	8	8	11	16	14	10	6	8	10	122
AK	Juneau . . . . .	54	18	17	18	17	17	15	17	18	20	23	20	21	222
AZ	Phoenix . . . . .	59	4	4	4	2	1	1	4	5	3	3	3	4	36
AR	Little Rock . . . . .	56	10	9	10	10	10	8	8	7	7	7	8	9	105
CA	Los Angeles . . . . .	63	6	6	6	3	1	1	1	(Z)	1	2	3	5	35
	Sacramento . . . . .	59	10	9	9	5	3	1	(Z)	(Z)	1	3	7	9	58
	San Diego . . . . .	58	7	6	7	4	2	1	(Z)	(Z)	-	1	2	4	42
	San Francisco . . . . .	71	11	10	10	6	3	1	(Z)	(Z)	1	4	7	10	63
CO	Denver . . . . .	61	6	6	9	9	11	9	9	9	6	5	6	5	89
CT	Hartford . . . . .	44	11	10	12	11	12	11	10	10	10	9	11	12	128
DE	Wilmington . . . . .	51	11	9	11	11	11	10	9	9	8	8	9	10	117
DC	Washington . . . . .	57	10	9	11	10	11	10	10	9	8	7	9	9	113
FL	Jacksonville . . . . .	57	8	8	8	6	8	12	15	15	13	9	7	8	116
	Miami . . . . .	56	7	6	6	6	10	15	16	17	17	14	8	7	131
GA	Atlanta . . . . .	64	12	10	11	9	9	10	12	10	8	7	9	10	116
HI	Honolulu . . . . .	49	9	9	9	9	7	6	7	6	7	9	9	10	97
ID	Boise . . . . .	59	12	10	10	8	8	6	3	2	4	6	10	11	90
IL	Chicago . . . . .	40	11	9	12	13	11	10	10	9	9	9	11	11	125
	Peoria . . . . .	59	9	8	11	12	12	10	9	8	9	8	9	10	114
IN	Indianapolis . . . . .	59	12	10	13	12	12	10	10	9	8	8	10	12	126
IA	Des Moines . . . . .	59	8	7	10	11	11	11	9	9	9	8	7	8	108
KS	Wichita . . . . .	45	5	5	8	8	11	9	8	8	8	6	5	6	86
KY	Louisville . . . . .	51	11	11	13	12	12	10	10	8	8	7	10	11	125
LA	New Orleans . . . . .	50	10	9	9	7	8	11	14	13	10	6	7	10	115
ME	Portland . . . . .	58	11	10	11	12	13	11	10	9	9	9	11	12	129
MD	Baltimore . . . . .	48	11	9	11	11	11	9	9	9	8	8	9	10	114
MA	Boston . . . . .	47	12	10	12	11	12	11	9	10	9	9	11	12	127
MI	Detroit . . . . .	40	13	11	13	13	11	10	10	10	10	10	12	13	135
	Sault Ste. Marie . . . . .	57	19	14	13	11	11	11	10	11	13	14	18	19	166
MN	Duluth . . . . .	57	12	9	11	10	12	13	12	11	12	10	11	11	134
	Minneapolis-St. Paul . . . . .	60	9	7	10	10	11	12	10	10	10	8	8	9	116
MS	Jackson . . . . .	35	11	9	10	9	9	8	11	10	8	6	8	10	109
MO	Kansas City . . . . .	26	7	7	10	11	12	10	9	9	8	7	8	7	105
	St. Louis . . . . .	41	9	8	11	11	11	9	9	8	8	8	10	9	111
MT	Great Falls . . . . .	61	9	8	9	9	12	12	8	8	7	6	7	8	101
NE	Omaha . . . . .	62	6	7	9	10	12	11	9	9	8	6	6	6	100
NV	Reno . . . . .	56	6	6	6	4	5	3	2	2	3	3	5	6	51
NH	Concord . . . . .	57	11	10	11	12	12	11	10	10	9	9	11	11	126
NJ	Atlantic City . . . . .	55	11	10	11	11	10	9	9	9	8	7	9	10	113
NM	Albuquerque . . . . .	59	4	4	5	3	4	4	9	10	6	5	4	4	61
NY	Albany . . . . .	52	13	11	12	12	13	11	10	10	10	9	12	12	135
	Buffalo . . . . .	55	20	17	16	14	13	11	10	10	11	12	16	19	169
	New York <sup>1</sup> . . . . .	129	11	10	11	11	11	10	11	10	8	8	9	10	121
NC	Charlotte . . . . .	59	10	10	11	9	10	10	11	10	7	7	8	10	112
	Raleigh . . . . .	54	10	10	10	9	10	10	11	10	8	7	8	9	113
ND	Bismarck . . . . .	59	8	7	8	8	10	11	9	8	7	6	7	8	96
OH	Cincinnati . . . . .	51	12	11	13	13	12	11	10	9	8	8	11	12	131
	Cleveland . . . . .	57	16	14	15	15	13	11	10	10	10	11	14	16	155
	Columbus . . . . .	59	13	11	14	13	13	11	11	9	8	9	11	13	137
OK	Oklahoma City . . . . .	59	5	6	7	8	10	8	6	7	7	7	5	6	83
OR	Portland . . . . .	58	18	16	17	14	12	9	4	5	8	12	18	19	152
PA	Philadelphia . . . . .	58	11	9	11	11	11	10	9	9	8	8	9	10	117
	Pittsburgh . . . . .	46	16	14	16	14	13	12	11	10	10	10	13	16	153
RI	Providence . . . . .	45	11	10	12	11	12	11	9	9	9	9	11	12	125
SC	Columbia . . . . .	51	10	10	10	8	9	10	12	11	8	6	7	9	110
SD	Sioux Falls . . . . .	53	6	7	9	9	11	11	10	9	8	6	6	6	99
TN	Memphis . . . . .	48	10	9	11	10	9	9	9	7	7	7	9	10	107
	Nashville . . . . .	57	11	11	12	11	11	10	10	9	8	7	10	11	119
TX	Dallas-Fort Worth . . . . .	45	7	7	7	8	9	7	5	5	7	6	6	7	79
	El Paso . . . . .	59	4	3	2	2	2	3	8	8	6	4	3	4	49
	Houston . . . . .	29	11	9	9	7	8	9	9	9	9	8	8	9	106
UT	Salt Lake City . . . . .	70	10	9	10	10	8	5	5	6	5	6	8	9	91
VT	Burlington . . . . .	55	15	12	13	12	14	12	12	13	12	12	14	15	155
VA	Norfolk . . . . .	50	11	10	11	10	10	9	11	10	8	8	8	9	116
	Richmond . . . . .	61	10	9	11	9	11	9	11	9	8	7	8	9	114
WA	Seattle-Tacoma . . . . .	54	19	16	17	14	10	9	5	6	9	13	18	19	155
	Spokane . . . . .	51	14	11	11	9	10	8	5	5	6	8	13	15	113
WV	Charleston . . . . .	51	15	14	15	14	13	12	13	11	9	9	12	14	152
WI	Milwaukee . . . . .	58	11	10	12	12	12	11	10	9	9	9	10	11	125
WY	Cheyenne . . . . .	63	6	6	9	10	12	11	11	10	8	6	6	6	101
PR	San Juan . . . . .	43	17	13	13	13	16	15	19	18	18	17	19	19	196

- Represents zero. Z Less than 1/2 day. <sup>1</sup> City office data.

Source: U.S. National Oceanic and Atmospheric Administration, *Comparative Climatic Data*, annual.



## No. 413. Snow and Ice Pellets—Selected Cities

[In inches. Airport data, except as noted. For period of record through 1998. T denotes trace]

State	Station	Length of record (yr)	Length of record (yr)												Annual
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
AL	Mobile	56	0.1	0.1	0.1	T	T	-	T	-	-	-	-	0.1	0.4
AK	Juneau	54	25.7	19	15.2	3.3	-	-	T	-	-	T	12.5	22.3	99
AZ	Phoenix	61	T	-	T	T	T	-	-	-	-	T	-	T	5.2
AR	Little Rock	56	2.4	1.5	0.5	T	T	T	-	-	-	-	0.2	0.6	5.2
CA	Los Angeles	62	T	T	T	-	-	-	-	-	-	-	-	T	T
	Sacramento	50	T	T	T	-	T	-	-	-	-	-	-	T	T
	San Diego	58	-	T	T	-	-	-	-	-	-	-	-	T	T
	San Francisco	69	T	T	T	-	-	-	-	-	-	-	-	T	T
CO	Denver	61	8.1	7.5	12.5	8.9	1.6	-	T	T	1.6	3.7	9.1	7.3	60.3
CT	Hartford	42	13	12	10	1.5	-	T	-	-	-	0.1	2.1	10.3	49
DE	Wilmington	49	6.8	6.1	3.3	0.2	T	T	T	-	-	0.1	0.9	3.3	20.7
DC	Washington	55	5.5	5.4	2.2	T	T	T	T	-	-	-	0.8	2.8	16.7
FL	Jacksonville	57	T	-	-	T	-	T	-	-	-	-	-	-	T
	Miami	56	-	-	-	-	T	-	-	-	-	-	-	-	T
GA	Atlanta	62	0.9	0.5	0.4	T	-	-	-	-	-	T	-	0.2	2
HI	Honolulu	52	-	-	-	-	-	-	-	-	-	-	-	-	-
ID	Boise	59	6.5	3.7	1.6	0.6	0.1	T	T	T	T	0.1	2.3	5.9	20.8
IL	Chicago	39	10.7	8.2	6.6	1.6	0.1	T	T	T	T	0.4	1.9	8.1	37.6
	Peoria	55	6.6	5.4	4	0.8	-	-	T	-	-	T	0.1	2	5.9
IN	Indianapolis	67	6.6	5.6	3.4	0.5	-	T	-	T	-	0.2	1.9	5.1	23.3
IA	Des Moines	57	8.3	7.2	6	1.8	-	-	-	T	-	T	0.3	3.1	6.7
KS	Wichita	45	4.3	4.1	2.7	0.2	T	T	T	T	-	-	1.3	3.1	15.7
KY	Louisville	51	5.4	4.6	3.3	0.1	T	T	T	-	-	0.1	1	2.1	16.6
LA	New Orleans	50	-	0.1	T	T	T	-	-	-	-	-	T	0.1	0.2
ME	Portland	58	19.6	16.9	12.9	3	0.2	T	-	-	-	T	0.2	3.3	14.6
MD	Baltimore	48	6.2	6.8	3.8	0.1	T	-	T	-	-	-	-	1	3.2
MA	Boston	61	12.8	11.8	8	0.9	-	-	-	T	-	-	-	1.3	7.6
MI	Detroit	40	10.3	9.2	6.8	1.7	T	-	-	-	-	0.2	2.8	9.7	40.7
	Sault Ste. Marie	55	29	18.4	14.7	5.8	0.5	T	T	T	T	0.1	2.4	15.8	31.1
MN	Duluth	55	17.9	11.5	13.6	6.6	0.7	T	T	T	T	0.1	1.5	13	15.6
	Minneapolis-St. Paul	60	10.2	8.2	10.6	2.8	0.1	T	T	T	T	0.5	7.9	9.4	49.7
MS	Jackson	35	0.5	0.2	0.2	-	-	-	-	-	-	-	-	-	0.1
MO	Kansas City	64	5.7	4.4	3.4	0.8	T	T	-	-	T	0.1	1.2	4.4	20
	St. Louis	62	5.4	4.4	4	0.5	-	T	T	-	-	T	1.4	3.8	19.5
MT	Great Falls	61	9.6	8.3	10.6	7.2	1.7	0.3	T	0.1	1.5	3.4	7.5	8.2	58.4
NE	Omaha	63	7.3	6.6	6.3	1	0.1	T	T	-	-	T	0.3	2.6	5.6
NV	Reno	54	5.8	5.2	4.2	1.2	0.8	-	-	-	-	T	0.3	2.4	4.3
NH	Concord	57	18	14.4	11.2	2.5	0.1	T	-	-	-	T	0.1	4	13.7
NJ	Atlantic City	51	8	5	2.5	0.8	-	-	-	T	-	-	-	-	6.4
NM	Albuquerque	59	2.5	2.1	1.8	0.8	-	T	T	T	T	0.1	1.2	2.6	10.9
NY	Albany	52	16.4	14.1	11.4	2.8	0.1	T	T	T	T	0.2	4.3	14.6	63.6
	Buffalo	55	23.7	18	11.9	3.2	0.2	T	T	T	T	0.3	11.2	22.8	91.3
	New York	130	7.5	8.6	5.1	0.9	T	-	-	-	-	-	0.9	5.4	28.4
NC	Charlotte	59	2	1.6	1.2	T	T	T	-	-	-	-	0.1	0.5	5.4
	Raleigh	54	2.3	2.5	1.3	-	T	T	T	-	-	-	0.1	0.8	7
	Bismarck	59	7.6	7	8.6	4	0.9	T	T	T	T	0.2	1.8	7	44.1
OH	Cincinnati	51	7.2	5.7	4.5	0.5	-	T	T	-	-	0.3	2	3.7	23.9
	Cleveland	57	13.1	12	10.5	2.4	0.1	T	T	-	-	T	0.6	5.3	11.8
	Columbus	51	8.7	6.1	4.6	0.9	-	T	T	-	-	T	0.1	2.2	5.3
OK	Oklahoma City	59	3.1	2.4	1.5	T	T	T	T	T	T	-	0.5	1.8	9.3
OR	Portland	55	3.2	1.1	0.4	T	-	T	-	-	-	-	-	0.4	1.4
PA	Philadelphia	56	6	6.6	3.6	0.3	T	T	-	-	-	-	-	0.7	3.2
	Pittsburgh	46	11.7	9.2	8.7	1.7	0.1	T	T	T	T	0.4	3.5	8.2	43.5
RI	Providence	45	9.9	9.8	7.3	0.7	0.2	-	-	-	-	0.1	1.1	1.8	35.9
SC	Columbia	51	0.4	0.8	0.2	T	-	-	-	-	T	-	-	T	0.3
SD	Sioux Falls	53	6.8	8.2	9.4	2.8	T	T	T	-	-	-	0.8	5.8	7.2
TN	Memphis	48	2.2	1.4	0.8	T	T	T	-	-	-	-	T	0.1	0.6
	Nashville	56	3.7	3	1.5	-	-	T	-	-	-	-	-	0.4	1.4
TX	Dallas-Fort Worth	43	1.1	0.9	0.2	T	T	-	-	-	-	T	0.1	0.2	2.5
	El Paso	57	1.3	0.8	0.4	0.3	T	T	T	-	-	T	-	0.9	1.6
	Houston	64	0.2	0.2	-	-	-	T	-	-	-	-	-	-	0.4
UT	Salt Lake City	70	13.8	10	9.4	4.9	0.6	T	T	T	0.1	1.3	6.8	11.7	58.6
VT	Burlington	55	19.2	16.6	13.2	4.1	0.2	-	-	-	-	-	0.2	6.8	18
VA	Norfolk	48	2.8	3	1	-	T	-	-	-	-	-	-	0.9	7.7
WA	Richmond	60	4.8	4	2.4	0.1	T	-	-	-	-	-	T	0.4	2
	Seattle-Tacoma	52	4.9	1.6	1.3	0.1	T	-	-	-	-	-	-	1.1	2.4
	Spokane	51	15.6	7.5	3.9	0.6	0.1	T	-	-	-	T	0.4	6.3	14.6
WV	Charleston	49	11.1	8.7	5.4	0.9	-	T	T	T	T	0.2	2.4	5.3	34
WI	Milwaukee	58	13.7	9.6	8.3	1.8	0.1	T	T	T	T	0.2	3.2	10.2	47.1
WY	Cheyenne	63	6.6	6.3	11.9	9.2	3.2	0.2	T	T	T	0.9	3.7	7.1	6.3
PR	San Juan	43	-	-	-	-	-	-	-	-	-	-	-	-	-

- Represents zero or rounds to zero. <sup>1</sup> City office data.

Source: U.S. National Oceanic and Atmospheric Administration, *Comparative Climatic Data*, annual.

## No. 414. Sunshine, Average Wind Speed, Heating and Cooling Degree Days, and Average Relative Humidity—Selected Cities

[Airport data, except as noted. For period of record through 1998, except as noted. M=morning. A=afternoon]

State	Station	Average percentage of possible sunshine		Average wind speed (m.p.h.)					Average relative humidity (percent)							
		Length of record (yr.)	Annual	Length of record (yr.)	Annual	Jan.	July	Heating degree days	Cooling degree days	Length of record (yr.)	Annual		Jan.		July	
											M	A	M	A	M	A
AL	Mobile	47	60	50	8.8	10.1	6.9	1,702	2,627	36	87	59	82	63	90	62
AK	Juneau	47	23	53	8.3	8.0	7.5	8,897	-	32	79	69	76	73	78	66
AZ	Phoenix	57	81	53	6.2	5.3	7.1	1,350	4,162	38	50	23	65	32	43	20
AR	Little Rock	35	60	56	7.8	8.4	6.7	3,155	2,005	34	83	57	80	62	86	55
CA	Los Angeles	60	72	50	7.5	6.7	7.9	1,458	727	39	79	65	71	61	86	68
	Sacramento	49	73	48	7.9	7.2	8.9	2,749	1,237	12	82	46	90	70	76	29
	San Diego	55	72	58	7.0	6.0	7.5	1,256	984	38	77	63	72	58	82	67
	San Francisco	68	71	71	10.6	7.2	13.6	3,016	145	39	84	62	86	67	86	30
CO	Denver	61	67	47	8.6	8.6	8.3	6,020	679	35	67	40	63	49	68	64
CT	Hartford	41	52	44	8.4	9.0	7.3	6,151	677	39	77	52	72	56	79	51
DE	Wilmington	47	55	50	9.0	9.8	7.8	4,937	1,046	51	78	55	75	60	79	54
DC	Washington	48	55	50	9.4	10.0	8.3	4,047	1,549	38	75	53	70	56	76	53
FL	Jacksonville	47	61	49	7.9	9.1	7.0	1,434	2,551	62	89	56	87	58	89	59
	Miami	46	68	49	9.2	8.5	7.9	200	4,198	34	83	61	84	59	83	63
GA	Atlanta	61	59	60	9.1	10.4	7.7	2,991	1,667	38	82	56	79	60	88	59
HI	Honolulu	47	74	49	11.3	9.4	13.1	-	4,474	29	72	56	81	61	68	51
ID	Boise	56	58	59	8.7	8.0	8.4	5,861	754	59	69	43	80	70	54	22
IL	Chicago	37	52	40	10.4	11.7	8.4	6,536	752	40	80	61	78	69	82	57
	Peoria	52	53	55	9.9	11.0	7.8	6,148	982	39	83	63	80	70	87	61
IN	Indianapolis	64	51	50	9.6	10.9	7.5	5,615	1,014	39	84	62	81	71	87	60
IA	Des Moines	46	55	49	10.7	11.4	8.9	6,497	1,036	37	80	61	77	68	83	59
KS	Wichita	39	62	45	12.2	12.0	11.3	4,791	1,628	45	80	56	79	64	79	50
KY	Louisville	47	53	51	8.3	9.5	6.8	4,514	1,288	38	81	59	77	65	85	58
LA	New Orleans	47	60	50	8.2	9.3	6.1	1,513	2,655	50	88	64	85	67	91	66
ME	Portland	54	55	58	8.7	9.1	7.6	7,378	268	58	79	59	76	61	80	59
MD	Baltimore	45	58	48	8.9	9.6	7.7	4,707	1,137	45	77	54	72	57	80	53
MA	Boston	60	55	41	12.4	13.8	11.0	5,641	678	34	72	58	68	58	74	56
MI	Detroit	37	49	40	10.3	12.0	8.5	6,569	626	40	81	60	80	70	82	54
	Sault Ste. Marie	54	43	57	9.2	9.6	7.8	9,316	131	57	85	67	81	74	89	62
MN	Duluth	47	49	49	11.0	11.6	9.4	9,818	180	37	81	64	77	70	85	60
	Minneapolis-St. Paul	57	54	60	10.5	10.5	9.4	7,981	682	39	79	61	75	68	81	56
MS	Jackson	30	59	35	7.1	8.3	5.5	2,427	2,215	35	91	59	86	65	94	61
MO	Kansas City	23	59	26	10.6	11.2	9.2	5,393	1,288	26	81	61	77	65	85	60
	St. Louis	47	55	49	9.7	10.6	8.0	4,758	1,534	38	82	60	81	67	84	57
MT	Great Falls	57	51	57	12.6	14.9	10.0	7,741	388	37	68	46	67	61	68	31
NE	Omaha	49	59	62	10.5	10.9	8.8	6,300	1,072	34	81	60	79	66	85	60
NV	Reno	53	69	56	6.6	5.6	7.2	5,674	508	35	69	32	79	61	81	19
NH	Concord	54	55	56	6.7	7.3	5.7	7,554	328	33	81	54	76	59	84	51
NJ	Atlantic City	37	56	40	9.9	10.9	8.3	5,169	826	34	82	56	78	59	83	57
NM	Albuquerque	56	76	59	8.9	8.0	8.9	4,425	1,244	38	59	29	68	40	59	27
NY	Albany	57	49	60	8.9	9.8	7.5	6,894	507	33	80	58	78	63	81	55
	Buffalo	52	43	59	11.9	14.0	10.3	6,747	477	38	80	62	79	73	79	55
	New York <sup>2</sup>	42	64	61	9.3	10.7	7.6	4,805	1,096	64	72	56	68	60	75	55
NC	Charlotte	49	59	49	7.4	7.8	6.6	3,341	1,582	38	82	53	78	56	86	56
	Raleigh	47	59	49	7.6	8.4	6.7	3,457	1,417	34	85	54	79	55	89	58
ND	Bismarck	56	55	59	10.2	10.0	9.2	8,968	488	39	81	58	75	70	85	49
OH	Cincinnati	44	49	51	9.0	10.5	7.2	5,248	996	36	82	60	80	69	86	57
	Cleveland	54	45	57	10.5	12.2	8.6	6,201	621	38	80	62	78	70	82	57
	Columbus	46	48	49	8.3	9.8	6.5	5,708	797	39	80	59	77	68	84	56
OK	Oklahoma City	44	64	50	12.3	12.6	10.9	3,659	1,859	33	80	56	78	60	80	51
OR	Portland	47	39	50	7.9	10.0	7.6	4,522	371	58	85	59	85	75	82	45
PA	Philadelphia	55	56	58	9.5	10.3	8.2	4,954	1,101	39	76	55	73	59	79	54
	Pittsburgh	43	44	46	9.0	10.5	7.3	5,968	654	38	79	57	76	66	83	54
RI	Providence	42	55	45	10.4	11.1	9.4	5,884	606	35	75	55	71	57	77	56
SC	Columbia	48	60	50	6.8	7.2	6.3	2,649	1,966	32	87	51	83	55	89	54
SD	Sioux Falls	50	57	50	11.1	10.9	9.8	7,809	744	35	82	62	78	70	84	56
TN	Memphis	43	59	50	8.8	10.0	7.5	3,082	2,118	59	81	58	79	64	84	58
	Nashville	54	57	57	8.0	9.1	6.5	3,729	1,616	33	84	58	80	64	89	58
TX	Dallas-Fort Worth	42	64	45	10.7	11.0	9.8	2,407	2,603	35	82	57	80	61	81	50
	El Paso	53	80	56	8.8	8.3	8.3	2,708	2,094	38	56	27	65	35	61	29
	Houston	26	56	29	7.8	8.2	6.9	1,599	2,700	29	90	61	86	66	93	58
UT	Salt Lake City	69	62	69	8.8	7.5	9.5	5,765	1,047	39	67	43	79	69	52	22
VT	Burlington	52	44	55	9.0	9.8	8.0	7,771	388	33	77	59	73	64	79	53
VA	Norfolk	47	58	50	10.6	11.5	8.9	3,495	1,422	50	78	57	75	59	81	59
	Richmond	50	56	50	7.7	8.1	6.9	3,963	1,348	64	83	53	80	57	85	56
WA	Seattle-Tacoma <sup>3</sup>	51	38	50	8.9	9.6	8.2	4,908	190	39	83	62	81	74	81	49
	Spokane	48	48	51	8.9	8.8	8.6	6,842	398	39	78	52	85	79	65	28
WV	Charleston	47	48	51	5.9	7.1	4.8	4,646	1,031	51	83	56	78	63	90	59
WI	Milwaukee	55	52	58	11.5	12.6	9.7	7,324	479	38	80	65	76	69	82	62
WY	Cheyenne	60	64	41	12.9	15.3	10.4	7,326	285	39	65	45	57	50	70	38
PR	San Juan	40	76	43	8.4	8.4	9.7	-	5,558	43	79	65	82	64	79	67

- Represents zero. <sup>1</sup> Percent of days that are either clear or partly cloudy. Period of record through 1997. <sup>2</sup> Airport data for sunshine. <sup>3</sup> Does not represent airport data.

Source: U.S. National Oceanic and Atmospheric Administration, *Comparative Climatic Data*, annual.