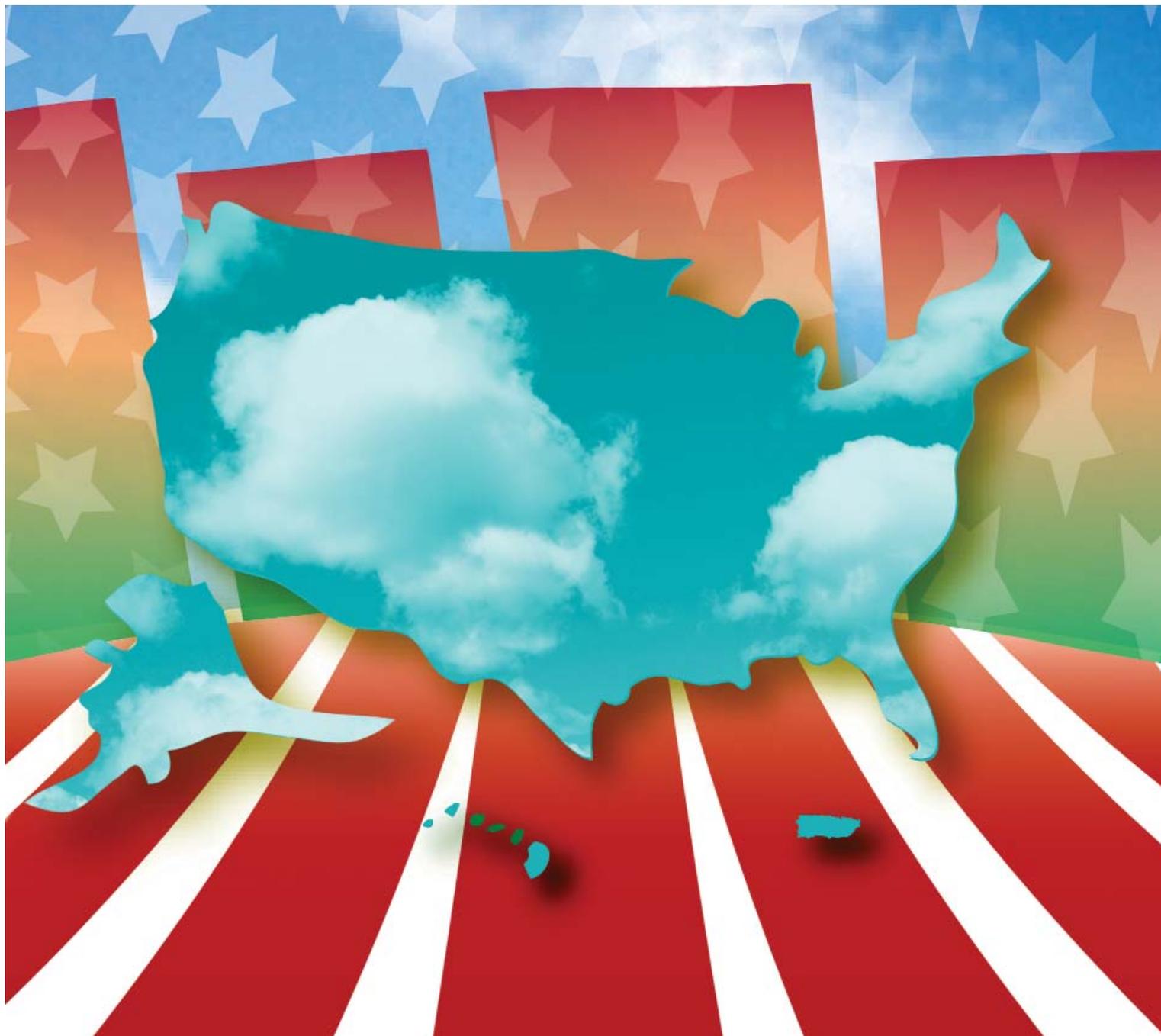


 **AMERICAN LUNG ASSOCIATION®**
State of the Air: 2003



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State of the Air: 2003



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The American Lung Association assumes sole responsibility for the content of the American Lung Association State of the Air 2003.

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137 million Americans,
nearly **half the nation**,
are living in counties with an
unhealthy amount of ozone.

EXECUTIVE SUMMARY

The American Lung Association State of the Air: 2003 includes data from 1999-2001. This represents the most recent available complete ozone monitoring data that has been fully reviewed by the EPA for quality assurance at the time this report was prepared.

At levels commonly found in the air in many American cities during summer months, ozone can damage the lungs and airways, causing them to become inflamed, reddened and swollen. This response can cause coughing, burning sensations and shortness of breath. Ozone increases the risk of asthma attacks in people with asthma.

The American Lung Association State of the Air: 2003 finds that many millions of Americans continue to breathe unhealthy amounts of ozone:

- **Nearly half of the US population**—137,206,767 (49%)—lives in areas with unhealthy levels of ozone despite modest improvements in air quality monitored between 1999-2001.
- **Over five million fewer Americans**—5,462,079 lived in counties that received an F grade compared with last year's report, despite the inclusion of data from 14 additional counties.
- **Over half of all monitored counties** (55.5 percent) received an F rating.
- **Over 7.4 million adults with asthma and 2 million children suffering from asthma attacks** live in counties that received an F grade in ozone air pollution. Those totals represent 70 percent of the 10.6 million American adults with asthma and 69 percent of the 2.8 million children suffering from asthma attacks who live in counties with an ozone monitor.
- **Over 1.5 million Americans with emphysema** live in counties that received an F rating in ozone air pollution out of the 2.3 million Americans with emphysema who live in those monitored counties. Nearly 4.7 million Americans with chronic bronchitis live in those counties receiving an F, out of the nearly 6.8 million Americans with chronic bronchitis living in counties with monitors.
- Of the nation's **over-65 population** who live in these monitored counties, 68 percent live in counties that received an F rating in ozone air pollution, while 70 percent of children under 14 who live in monitored counties reside in counties with a failing grade.

VOC

NO_x

heat

+ sunlight

OZONE

Each year, the American Lung Association assesses the toll that ozone air pollution places on our nation's ability to breathe. This year, the *American Lung Association State of the Air: 2003* finds that many Americans breathed in less ozone air pollution between 1999 and 2001, compared with the previous two three-year periods (1998-2000 and 1997-1999). This is good news—but not nearly good enough. *The American Lung Association State of the Air: 2003* finds that, between 1999 and 2001, there were still 137 million Americans—nearly half the nation—who were living in counties with an unhealthy amount of ozone.

The main ingredient in smog, ozone is a potent respiratory irritant which poses an especially large danger during the summer months in urban areas. Children, the elderly, and those with chronic lung disease are at greatest risk of suffering serious breathing problems caused by ozone.

The improvement in ozone levels seen in 1999-2001 is likely due to favorable weather conditions rather than significant new measures to reduce pollution. Clear signs of that are the early reports of extremely high ozone levels in 2002, a period not covered by this report¹. In fact, much air pollution cleanup has been stalled during the past five years because the U.S. Environmental Protection Agency (EPA) has failed to take steps to enforce the more protective ozone standard adopted in 1997. This tighter standard would prevent tens of thousands of asthma attacks and hospitalizations and other illnesses for asthma and other respiratory diseases and millions of days of missed work and school. Not only has this more protective standard not been enforced, but the Clean Air Act is itself in danger of being weakened by the current Administration, despite the law's record of effectiveness which has led to a significant reduction of almost all major air pollutants since 1970.

As an indication of how far we still need to go to protect our citizens from dirty air, over half (55.8%) of counties monitored for ozone had an unacceptably high number of high ozone days.

In 2000, the American Lung Association initiated its *State of the Air* annual assessment to provide citizens with easy-to-understand reports on the quality of the

air in their communities that are based on concrete data and sound science. Counties are assigned grades ranging from A through F based on how often their air quality crosses into the unhealthy categories of EPA's Air Quality Index for ground-level ozone (smog) pollution. The Air Quality Index is, in turn, based on the national air quality standards. The air quality standard for ozone used as the basis for this report, 0.08 parts per million averaged over an eight-hour period, was adopted by the EPA in 1997 based on the most recent health effects information. The grades in this report are assigned based on the quality of the air in areas, and do not reflect an assessment of efforts to implement controls that improve air quality. The grades should not be interpreted as an evaluation of the work of any state or local air pollution control program.

Ozone is not the only air pollutant that endangers the lungs. Of the long list of lung hazards, the other most pervasive pollutant is particulate matter, or soot. Particulate matter air pollution is especially harmful to people with lung disease such as asthma and chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis and emphysema, as well as people with heart disease. Exposure to particulate air pollution can shorten human life by months or years, as well as trigger asthma attacks and cause wheezing, coughing, and respiratory irritation in individuals with sensitive airways.

A new nationwide monitoring system is tracking the smallest and most dangerous of the fine particles, those with diameter of 2.5 microns or less, which lodge deep inside the lung when inhaled. Data from those monitors are not included in this report because many of the monitors had problems in the first year they were operating. This means that while some areas have three full years of reliable data, others do not. Because of this discrepancy, the American Lung Association will wait until 2004 to incorporate fine particle data into this report, when all areas will have three years of comprehensive data.

It is important to note that many areas have unhealthy levels of both pollutants—ozone and fine particles. However, some areas that have no or few unhealthy ozone days may still have unhealthy air from particulates.

Table 1: Estimated Populations at Risk by Grading Level, 2000, 2001, 2002, 2003

		Chronic Diseases			
	Report Years	Adult Asthma	Pediatric Asthma	Chronic Bronchitis	Emphysema
Grade A (0.0)	2000	(1)	(1)	(1)	(1)
	2001	(2)	116,835	284,546	93,808
	2002	465,195	115,930	280,766	88,531
	2003	691,967	175,124	433,619	142,516
Grade B (0.3-0.9)	2000	(1)	(1)	(1)	(1)
	2001	(2)	131,951	312,045	102,872
	2002	425,752	111,256	254,036	79,264
	2003	533,923	149,639	356,631	123,548
Grade C (1.0-2.0)	2000	(1)	(1)	(1)	(1)
	2001	(2)	134,775	351,792	115,972
	2002	600,264	149,867	393,101	135,050
	2003	913,157	246,868	632,240	218,848
Grade D (2.1-3.2)	2000	(1)	(1)	(1)	(1)
	2001	(2)	132,024	333,759	110,029
	2002	600,649	138,900	353,148	114,780
	2003	596,558	173,687	373,511	120,636
Grade F (3.3+)	2000	(1)	(1)	(1)	(1)
	2001	(2)	1,944,477	4,785,438	1,577,613
	2002	7,661,492	1,936,210	4,684,114	1,474,141
	2003	7,432,080	1,966,552	4,681,710	1,545,411
Population Living in Counties with Monitors	2000	(1)	(1)	(1)	(1)
	2001	(2)	2,567,435	6,337,115	2,089,149
	2002	10,213,597	2,575,376	6,272,713	1,992,034
	2003	10,619,855	2,832,011	6,779,598	2,255,874

(1) Chronic disease estimates for 2000 and 2001 CANNOT BE COMPARED TO EACH OTHER. Between the release dates of these two publications, the National Health Interview Survey completely redesigned its questionnaire and obliterated all trends. Therefore, estimates prior to 1997 cannot be compared with later estimates. The 2000 estimates were obtained from the 1996 NHIS survey while the 2001 estimates were obtained from the revised 1998 NHIS survey.

(2) Adult asthma disease estimates for 2001 and 2002 CANNOT BE COMPARED TO EACH OTHER. The 2001 estimate utilizes the National Health Interview Survey questionnaire while the 2002 estimate utilizes the Behavioral Risk Factor Surveillance System Survey.

GRADING THE RISK

Age Groups

High Ozone Days

	14 and Under	65 and Over	Total Population	Number of Counties	Orange	Red	Purple
Grade A (0.0)	2,296,548	1,251,960	10,477,773	62	0	0	0
	1,824,279	1,015,492	8,453,938	55	0	0	0
	1,823,326	1,027,969	8,542,407	56	0	0	0
	2,629,652	1,466,426	12,575,124	68	0	0	0
Grade B (0.3-0.9)	1,865,757	1,179,695	8,582,029	48	68	0	0
	2,059,705	1,096,632	9,343,164	41	57	1	0
	1,745,726	907,336	7,856,880	39	51	0	0
	2,243,840	1,351,997	10,437,026	53	78	0	0
Grade C (1.0-2.0)	2,692,794	1,824,144	12,856,894	59	256	3	0
	2,112,737	1,514,827	10,269,797	58	254	4	0
	2,347,471	1,683,397	11,588,825	61	266	5	0
	3,710,667	2,401,032	18,019,904	79	352	4	0
Grade D (2.1-3.2)	2,206,390	1,453,631	10,459,616	54	414	12	0
	2,067,946	1,334,036	9,821,670	41	314	12	0
	2,192,859	1,376,837	10,578,028	48	357	10	0
	2,535,980	1,207,485	11,358,912	33	250	10	0
Grade F (3.3+)	29,045,221	15,944,372	132,494,679	333	9,519	1,335	219
	30,680,052	17,120,347	141,793,488	382	12,180	1,488	209
	30,742,058	17,191,083	142,668,846	391	11,952	1,373	182
	29,841,544	16,144,931	137,206,767	384	10,123	1,088	107
Population Living in Counties with Monitors	40,343,997	22,992,964	185,164,054	678	10,257	1,350	219
	40,423,987	23,103,750	187,627,908	660	12,805	1,505	209
	40,779,165	23,362,199	190,463,367	678	12,626	1,388	182
	42,771,423	23,705,025	198,216,448	692	10,803	1,102	107

Table 2: People at Risk in America's 25 Most Ozone-Polluted Cities

**At-Risk Groups
in America's 25 Most Polluted Cities**

Metropolitan Statistical Areas	Rank 2003	Rank 2002	Rank 2001	Rank 2000	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Los Angeles-Riverside-Orange County, CA CMSA	1	1	1	1	16,373,645	3,955,219	1,626,663	258,327	831,760	528,572	162,952
Fresno, CA MSA	2	3	3	3	922,516	244,351	92,805	16,197	44,810	28,598	9,037
Bakersfield, CA MSA	3	2	2	2	661,645	176,910	62,054	11,689	31,998	20,330	6,250
Visalia-Tulare-Porterville, CA MSA	4	4	4	4	368,021	103,425	35,917	6,871	17,349	11,078	3,503
Houston-Galveston-Brazoria, TX CMSA	5	5	5	5	4,669,571	1,136,281	360,308	74,988	202,727	147,772	41,960
Sacramento-Yolo, CA CMSA	6	10	12	11	1,796,857	406,444	203,551	26,911	93,425	60,425	19,841
Merced, CA MSA	7	7	13	10	210,554	60,546	20,004	4,019	9,808	6,248	1,959
Atlanta, GA MSA	8	6	6	9	4,112,198	926,251	310,703	60,592	217,423	133,668	37,034
Knoxville, TN MSA	9	8	9	12	687,249	129,331	92,414	8,586	36,394	24,986	8,687
Charlotte-Gastonia-Rock Hill, NC-SC MSA	10	9	8	8	1,499,293	322,768	152,648	21,069	70,937	50,198	15,683
Washington-Baltimore, DC-MD-VA-WV PMSA	11	11	7	7	7,608,070	1,617,956	772,176	106,339	400,151	260,093	81,465
Dallas-Fort Worth, TX CMSA	12	16	14	14	5,221,801	1,232,855	420,898	80,909	229,901	167,011	47,398
Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD CMSA	13	14	10	13	6,188,463	1,309,282	833,038	86,667	327,894	216,561	75,836
New York-Northern New Jersey-Long Island, CT-NJ-NY-PA CMSA	14	20	15	16	21,199,865	4,427,393	2,684,988	290,182	1,135,343	741,521	251,794
Phoenix-Mesa, AZ MSA	15	12	17	19	3,251,876	739,916	388,150	48,282	198,810	109,068	35,970
Baton Rouge, LA MSA	16	17	24	N/A	602,894	135,277	56,733	9,084	23,189	19,796	5,984
Greensboro-Winston-Salem-High Point, NC MSA	17	21	25	N/A	1,251,509	254,023	156,294	16,629	59,872	43,535	14,854
Memphis, TN-AR-MS MSA	18	19	22	23	1,135,614	270,054	112,994	17,792	53,690	37,117	11,628
Birmingham, AL MSA	18	21	33	24	921,106	192,376	116,600	12,787	43,852	32,162	10,980
San Diego, CA MSA	20	15	17	6	2,813,833	611,119	313,750	40,018	148,788	94,794	30,028
Nashville, TN MSA	21	18	16	18	1,231,311	255,887	123,414	16,897	61,695	42,005	12,913
Raleigh-Durham-Chapel Hill, NC MSA	22	13	10	17	1,187,941	245,007	102,574	15,907	56,696	39,287	11,336
Allentown-Bethlehem-Easton, PA MSA	23	35	28	N/A	637,958	124,212	102,330	8,294	35,728	23,342	8,776
Macon, GA MSA	24	24	26	N/A	322,549	73,081	35,883	4,840	16,920	10,825	3,531
Louisville, KY-IN MSA	25	29	25	N/A	1,025,598	212,220	129,105	14,055	62,944	36,009	12,283

Notes:

- (1) Sensitive populations for all counties within their respective MSAs were included in total estimates.
- (2) Those **14 & under** and **65 & over** are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represents the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
- (7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

Table 3: People at Risk in America's 25 Most Ozone-Polluted Counties

At-Risk Groups												High Ozone Days in Unhealthy Ranges, 1999-01					
County	State	Rank 2003	Rank 2002	Rank 2001	Rank 2000	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Purple	Red	Weighted Avg	Grade
San Bernardino	CA	1	1	1	1	1,709,434	465,138	146,459	30,528	82,110	51,903	15,430	179	58	22	103.3	F
Fresno	CA	2	3	4	4	799,407	214,255	79,209	14,180	38,632	24,612	7,729	202	53	1	94.5	F
Kern	CA	3	2	3	3	661,645	176,910	62,054	11,689	31,998	20,330	6,250	219	40	0	93.0	F
Tulare	CA	4	5	5	6	368,021	103,425	35,917	6,871	17,349	11,078	3,503	216	19	0	81.5	F
Riverside	CA	5	4	2	2	1,545,387	394,983	195,964	25,919	77,032	49,931	17,278	160	44	4	78.0	F
Harris	TX	6	6	6	8	3,400,5788	28,962	252,895	54,446	147,799	106,958	29,680	80	44	11	56.0	F
Los Angeles	CA	7	8	8	5	9,519,338	2,263,330	926,673	147,539	486,627	308,088	93,587	82	20	4	40.0	F
El Dorado	CA	8	14	18	17	156,299	33,364	19,334	2,256	8,267	5,519	1,946	96	10	0	37.0	F
Merced	CA	9	9	23	16	210,554	60,546	20,004	4,019	9,808	6,248	1,959	97	9	0	36.8	F
Kings	CA	10	11	21	9	129,461	31,574	9,557	2,075	6,492	3,991	1,062	87	7	0	32.5	F
Fulton	GA	11	7	7	13	816,006	169,066	68,990	11,021	44,434	27,362	7,741	60	15	4	30.2	F
Sevier	TN	12	10	12	19	71,170	13,568	8,995	905	3,756	2,588	893	79	5	0	28.8	F
Nevada	CA	13	28	50	35	92,033	16,986	16,049	1,177	5,113	3,527	1,423	77	4	0	27.7	F
Sacramento	CA	14	20	33	20	1,223,499	283,266	135,875	18,669	63,132	40,639	13,188	67	7	1	26.5	F
Ventura	CA	15	21	14	7	753,197	179,707	76,804	11,848	38,360	24,712	7,862	72	6	0	26.3	F
Rowan	NC	15	22	19	N/A	130,340	27,030	18,205	1,779	6,185	4,554	1,632	65	8	1	26.3	F
Placer	CA	17	31	60	37	248,399	54,409	32,560	3,636	13,082	8,671	3,082	68	5	0	25.2	F
Anne Arundel	MD	18	15	10	11	489,656	103,739	48,820	6,837	26,377	16,801	5,268	58	10	0	24.3	F
Mecklenburg	NC	19	12	11	12	695,454	148,639	59,724	9,636	32,990	22,830	6,572	58	8	1	24.0	F
Tarrant	TX	19	37	46	46	1,446,219	342,240	120,585	22,478	63,595	46,384	13,374	57	6	3	24.0	F
DeKalb	GA	21	17	27	29	665,865	138,468	53,224	9,068	36,161	22,064	6,054	44	12	3	22.7	F
Henry	GA	22	N/A	N/A	N/A	119,341	29,621	8,824	1,928	6,090	3,769	1,061	44	11	5	23.5	F
Rockdale	GA	22	13	9	14	70,111	15,762	6,456	1,067	3,663	2,335	725	42	15	3	23.5	F
Camden	NJ	24	27	16	21	508,932	113,309	63,769	7,529	23,465	17,392	5,964	48	14	0	23.0	F
Harford	MD	25	50	30	32	218,590	51,113	22,160	3,371	11,344	7,295	2,348	42	12	2	21.3	F

Notes:

- (1) Total represents the at-risk populations in counties with ozone monitors- it does not represent the entire states' sensitive populations.
- (2) Those **14 & under** and **65 & over** are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represents the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
- (7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
- (8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).
- (9) The **Weighted Average** was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.
- (10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.
- (11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.

Table 4: Counties with the Worst Ozone Air Pollution in Each State

<div style="border: 2px solid black; padding: 5px; text-align: center;"> <h2 style="margin: 0;">High Ozone Days</h2> <h3 style="margin: 0;">in Unhealthy Ranges, 1998-2000</h3> </div>							
County	ST	Metropolitan Statistical Area	Orange	Red	Purple	Weighted Avg ⁽¹⁾	Grade
Shelby	AL	Birmingham, AL MSA	44	5	0	17.2	F
Maricopa	AZ	Phoenix-Mesa, AZ MSA	56	0	0	18.7	F
Crittenden	AR	Memphis, TN-AR-MS MSA	29	1	0	10.2	F
San Bernardino	CA	Riverside-San Bernardino, CA PMSA	179	58	22	103.3	F
Jefferson	CO	Denver, CO CMSA	6	0	0	2.0	C
Fairfield	CT	Bridgeport, CT PMSA; Danbury, CT PMSA	38	12	2	20.0	F
New Castle	DE	Wilmington-Newark, DE-MD PMSA	37	6	0	15.3	F
District of Columbia	DC	Washington, DC-MD-VA-WV PMSA	35	4	0	13.7	F
Escambia	FL	Pensacola, FL MSA	24	1	0	8.5	F
Fulton	GA	Atlanta, GA MSA	60	15	4	30.2	F
Cook	IL	Chicago, IL PMSA	22	0	0	7.3	F
Hancock	IN	Indianapolis, IN MSA	27	0	0	9.0	F
Scott	IA	Davenport-Moline-Rock Island, IA-IL MSA	4	0	0	1.3	C
Linn	KS	N/A	6	0	0	2.0	C
Sedgwick	KS	Wichita, KS MSA	6	0	0	2.0	C
Sumner	KS	N/A	6	0	0	2.0	C
Oldham	KY	Louisville, KY-IN MSA	39	3	0	14.5	F
East Baton Rouge	LA	Baton Rouge, LA MSA	44	7	0	18.2	F
Hancock	ME	N/A	17	2	0	6.7	F
Anne Arundel	MD	Baltimore, MD PMSA	58	10	0	24.3	F
Barnstable	MA	Barnstable-Yarmouth, MA MSA	21	6	1	10.7	F
Muskegon	MI	Grand Rapids-Muskegon-Holland, MI MSA	28	2	1	11.0	F
DeSoto	MS	Memphis, TN-AR-MS MSA	18	1	0	6.5	F
St. Charles	MO	St. Louis, MO-IL MSA	35	1	1	12.8	F
Clark	NV	Las Vegas, NV-AZ MSA	7	0	0	2.3	D
Hillsborough	NH	Lowell, MA-NH PMSA; Manchester, NH PMSA	15	1	0	5.5	F
Camden	NJ	Philadelphia, PA-NJ PMSA	48	14	0	23.0	F
Doña Ana	NM	Las Cruces, NM MSA	6	0	0	2.0	C
Richmond	NY	New York, NY PMSA	31	5	2	14.2	F
Rowan	NC	Charlotte-Gastonia-Rock Hill, NC-SC MSA	65	8	1	26.3	F
Clinton	OH	N/A	37	3	0	13.8	F
Tulsa	OK	Tulsa, OK MSA	27	1	0	9.5	F
Bucks	PA	Philadelphia, PA-NJ PMSA	41	11	2	20.5	F
Washington	RI	New London-Norwich, CT-RI MSA	21	4	1	9.7	F
Spartanburg	SC	Providence-Fall River-Warwick, RI-MA MSA; Greenville-Spartanburg-Anderson, SC MSA	27	1	0	9.5	F
Sevier	TN	Knoxville, TN MSA	79	5	0	28.8	F
Harris	TX	Houston, TX PMSA	80	44	11	56.0	F
Salt Lake	UT	Salt Lake City-Ogden, UT MSA	8	2	0	3.7	F
Fairfax	VA	Washington, DC-MD-VA-WV PMSA	38	3	0	14.2	F
Bennington	VT	N/A	6	0	0	2.0	C
King	WA	Seattle-Bellevue-Everett, WA PMSA	3	0	0	1.0	C
Cabell	WV	Huntington-Ashland, WV-KY-OH MSA	22	0	0	7.3	F
Sheboygan	WI	Sheboygan, WI MSA	25	5	0	10.8	F

Notes:

(1) The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(2) States were not included if respective counties got a grade of B or higher.

Figure 5: Metropolitan Areas with the Least Ozone Air Pollution

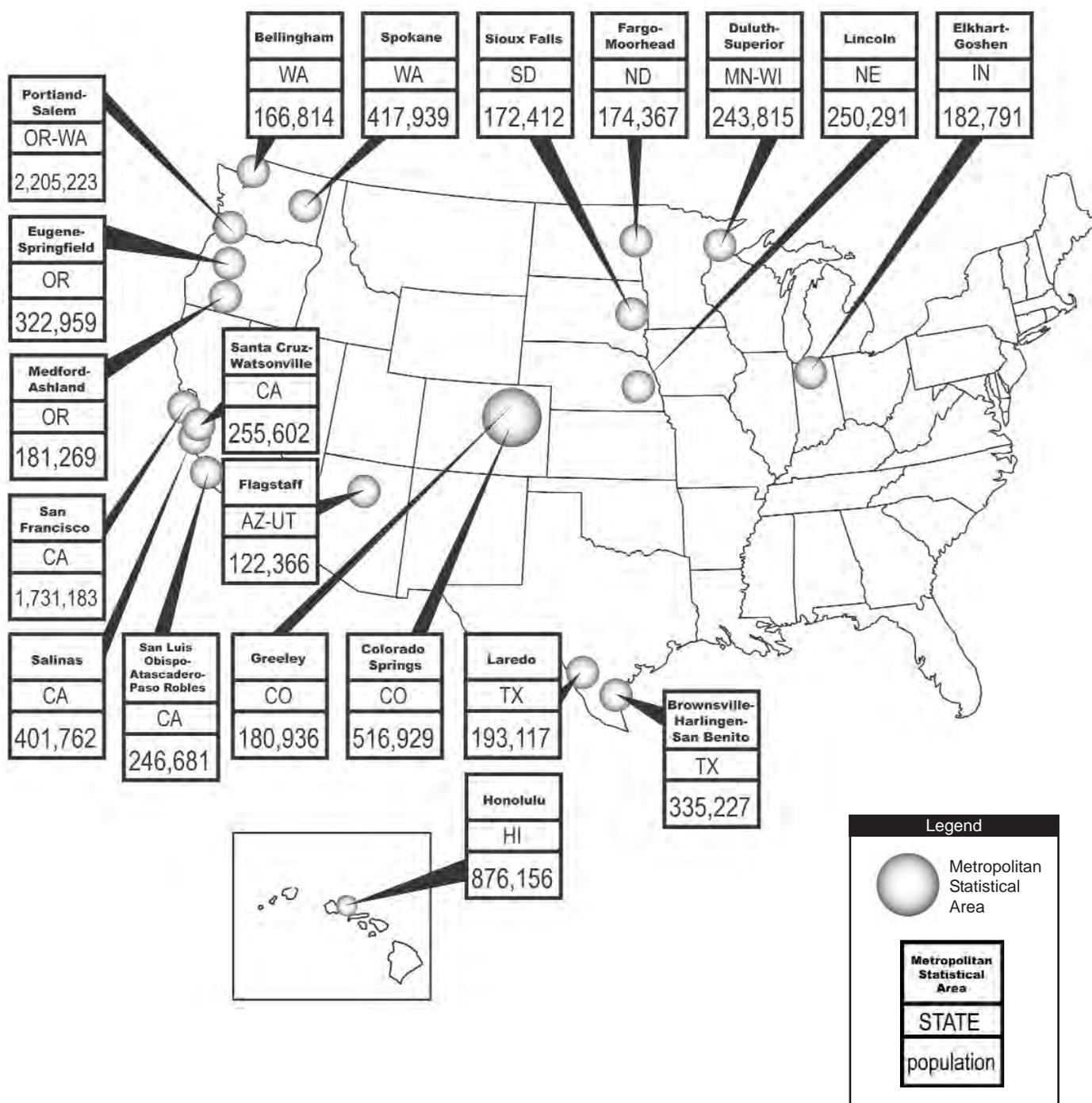
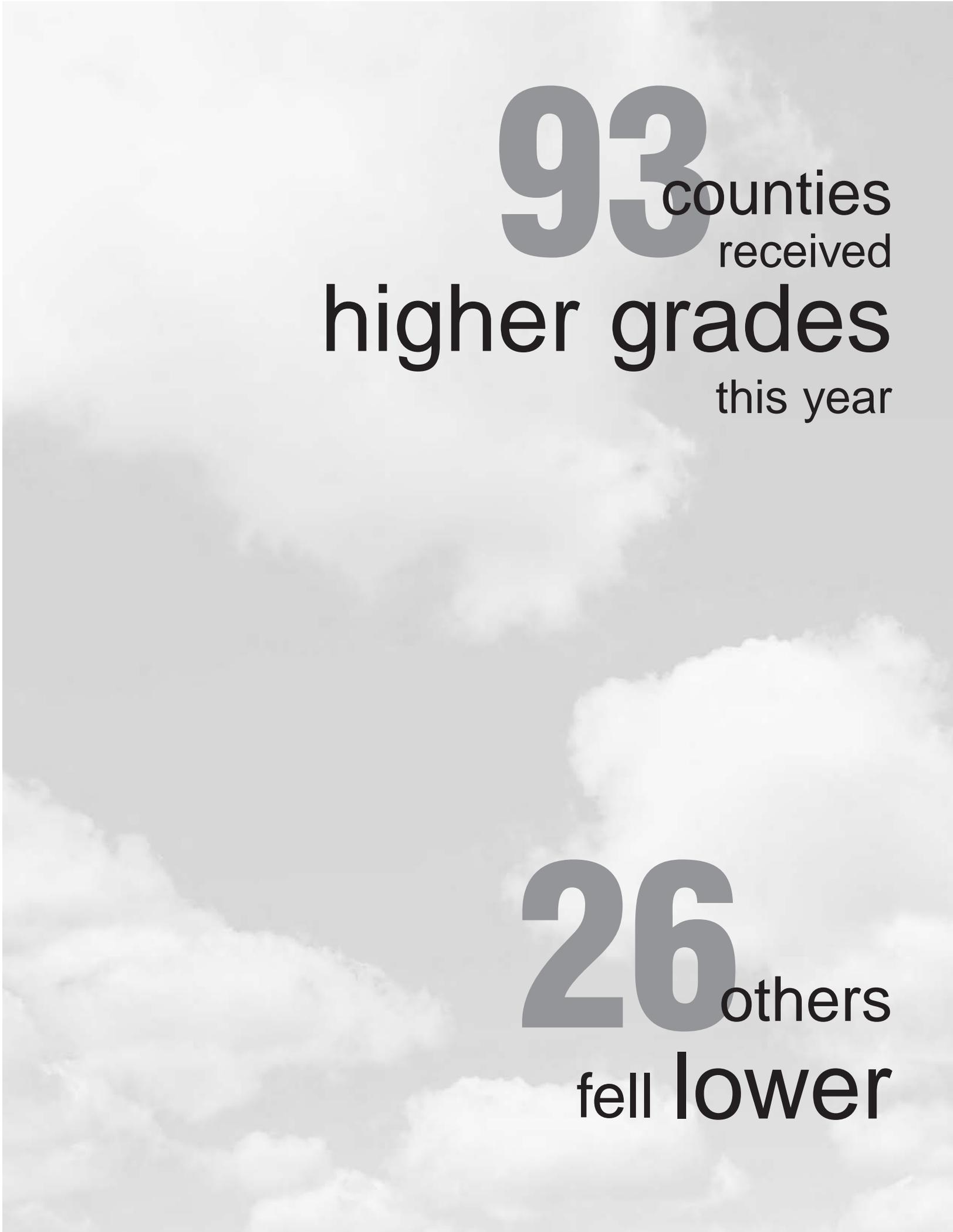


Table 6: Counties with No Monitored Ozone Air Pollution in Unhealthy Ranges in Each State

County	ST	Metropolitan Statistical Area
Yukon-Koyukuk	AK	N/A
Montgomery	AR	N/A
Cochise	AZ	N/A
Coconino	AZ	Flagstaff, AZ-UT MSA
Lake	CA	N/A
Marin	CA	San Francisco, CA PMSA
Mendocino	CA	N/A
Monterey	CA	Salinas, CA MSA
Plumas	CA	N/A
San Francisco	CA	San Francisco, CA PMSA
San Luis Obispo	CA	San Luis Obispo-Atascadero-Paso Robles, CA MSA
San Mateo	CA	San Francisco, CA PMSA
Santa Cruz	CA	Santa Cruz-Watsonville, CA PMSA
Siskiyou	CA	N/A
Adams	CO	Denver, CO PMSA
Denver	CO	Denver, CO CMSA
El Paso	CO	Colorado Springs, CO MSA
Montezuma	CO	N/A
Weld	CO	Greeley, CO PMSA
Honolulu	HI	Honolulu, HI MSA
Harrison	IA	N/A
Palo Alto	IA	N/A
Polk	IA	Des Moines, IA MSA
Story	IA	N/A
Butte	ID	N/A
DuPage	IL	Chicago-Gary-Kenosha, IL-IN-WI, CMSA
Rock Island	IL	Davenport-Moline-Rock Island, IA-IL, MSA
Elkhart	IN	Elkhart-Goshen, IN MSA
Orleans	LA	New Orleans, LA MSA
Oxford	ME	N/A

Dakota	MN	Minneapolis-St. Paul, MN-WI MSA
Lake	MN	N/A
St. Louis	MN	Duluth-Superior, MN-WI MSA
Flathead	MT	N/A
Swain	NC	N/A
Billings	ND	N/A
Cass	ND	Fargo-Moorhead, ND-MN MSA
Dunn	ND	N/A
Mercer	ND	N/A
Oliver	ND	N/A
Lancaster	NE	Lincoln, NE MSA
Carroll	NH	N/A
Grafton	NH	N/A
Eddy	NM	N/A
Valencia	NM	Albuquerque, NM MSA
Carson City	NV	N/A
Douglas	NV	N/A
White Pine	NV	N/A
Latimer	OK	N/A
Clackamas	OR	Portland-Salem, OR-WA CMSA
Columbia	OR	Portland-Salem, OR-WA CMSA
Jackson	OR	Medford-Ashland, OR MSA
Lane	OR	Eugene-Springfield, OR MSA
Marion	OR	Portland-Salem, OR-WA CMSA
Minnehaha	SD	Sioux Falls, SD MSA
Brewster	TX	N/A
Cameron	TX	Brownsville-Harlingen-San Benito, TX, MSA
Webb	TX	Laredo, TX MSA
Cache	UT	N/A
San Juan	UT	N/A
Clallam	WA	N/A



93 counties
received
higher grades
this year

26 others
fell **lower**

NATIONWIDE AND REGIONAL ANALYSIS

American Lung Association State of the Air: 2003 finds many changes in counties' ozone ratings, most of them favorable: 93 counties saw their ratings improve by at least one grade, while 26 counties received lower grades this year.

Some of the changes were quite impressive: San Luis Obispo, California, for instance, jumped from an F in 2002 to an A this year. In Oregon, four counties rose from Cs and Bs to receive an A rating this year. In Florida, 13 counties received higher grades this year compared with last year, as did seven counties in South Carolina.

Some states saw their grades worsen. In Maine, three counties received lower grades this year, as did in two in Massachusetts. In New York, five counties received lower grades in 2003, as did seven counties in Wisconsin.

The following discussions of states are grouped by U.S. Environmental Protection Agency region. More detailed summaries of the ozone problems in each region are contained in Appendix B.

Region 1: Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, and Connecticut

As noted above, three counties in Maine received lower grades this year, as did two in Massachusetts. In Rhode Island, Providence County saw its grade drop from a D to an F. None of these states had counties on the list of the 25 most ozone-polluted counties or cities. However, every state in the region except Vermont had at least two counties with the grade of F, including all monitored counties in Connecticut, Massachusetts, and Rhode Island. New England (Region 1) is one of two regions (along with Region 2) that showed some widespread decline in grades from the 2002 report.

Region 2: New York, New Jersey, and Puerto Rico

In New York, air quality in five counties declined during this period, so their grades dropped from those in

the 2002 report. Camden County, New Jersey came in at number 24 of the 25 most ozone-polluted counties, despite its slight reduction in the number of high ozone days. Region 2 also showed some decline in grades from the 2002 report.

The New York metropolitan area (including northern New Jersey and Long Island, four counties in Connecticut and one in Pennsylvania) was the 14th most ozone-polluted city—New York ranked 20th last year.

Puerto Rico. Although Puerto Rico is part of Region 2, ozone has not been a problem there. The island setting provides Puerto Rico with natural defenses against ozone formation. No records for 1999 emissions in Puerto Rico are included in the National Emissions Trends database.

Region 3: Pennsylvania, Delaware, Maryland, Washington, D.C., West Virginia, and Virginia
Virginia and West Virginia saw improvement in one county each. Anne Arundel County, Maryland, was the 18th most ozone-polluted county this year; Harford County, Maryland, came in at number 25 on the list of the top 25 most ozone-polluted counties, jumping from number 50 last year.

Washington D.C./Baltimore, Maryland was the 11th most ozone-polluted city for the second year in a row; Philadelphia-Wilmington-Atlantic City, Pennsylvania-Delaware-New Jersey was number 13; and Allentown-Bethlehem-Easton, Pennsylvania, ranked 35th last year, was number 23.

Region 4: Kentucky, North Carolina, South Carolina, Georgia, Tennessee, Alabama, Mississippi, and Florida

The Southeast made significant improvements from the 2002 report. Kentucky saw improvements in four counties; in North Carolina, eight counties improved by at least one grade, while South Carolina saw improvement in seven counties. In Florida, 13 counties received higher grades this year's report compared with last year.

Still, the problems in the Southeast remain extremely serious. Seven of the 25 most ozone-polluted counties in the nation are in Region 4. Sevier County, Tennessee, was the 12th most ozone-polluted county. Rowan County, North Carolina moved to a worse position this year, at number 16, from its ranking at number 22 in last year's report. Mecklenberg County, North Carolina came in at 19, improved from 12th worst last year. Four counties in Georgia made the list of the 25 most ozone-polluted counties this year: Fulton County was 11th on the national list, while DeKalb County was the 21st, and Henry (new to the list) and Rockdale Counties were tied for 22nd.

Ten of the nation's 25 most-ozone polluted metropolitan areas are in the Southeast, as well. Atlanta was the 8th most ozone-polluted city this year (improved from number 6 last year). Knoxville, Tennessee was number 9 on that list, while Charlotte-Gastonia-Rock Hill, North Carolina/South Carolina was 10th. Greensboro-Winston-Salem-High Point, North Carolina was 17th, while Memphis, Tennessee and Birmingham, Alabama were tied for 18th place (along with San Diego). Nashville, Tennessee, was 21st, and Raleigh-Durham-Chapel Hill, North Carolina was 22nd. Macon, Georgia was 24th and Louisville, Kentucky, 25th.

Region 5: Ohio, Indiana, Michigan, Illinois, Wisconsin, and Minnesota

Illinois saw grade improvements in five counties in this year's report compare with the 2002 assessment; in Wisconsin seven counties received lower grades.

The Duluth-Superior metropolitan area in Minnesota/Wisconsin and Elkhart-Goshen, Indiana, made the list of the top 20 metropolitan areas with the least ozone air pollution, as did Fargo-Moorhead, North Dakota/Minnesota. None of the states in this region had counties on the list of the 25 most ozone-polluted counties or cities.

Region 6: Texas, Oklahoma, Arkansas, Louisiana, and New Mexico

Three Texas counties received better grades in this year's report, while one received a lower grade. Four counties in Oklahoma jumped at least one grade over the 2002 report, while four other counties that had incomplete monitoring data for the last years' report earned Fs in this year's report. Harris County, Texas, was the sixth-most ozone-polluted county for the third report in a row; Tarrant County jumped from number 37 in last year's report to number 19 this year.

Houston-Galveston-Brazoria, Texas was the fifth most-polluted metropolitan area this year for the fourth year in a row. Dallas-Fort Worth was 12th on that same list this year, a worse position than its number 16 ranking last year. In good news for Texas, both Brownsville-Harlingen-San Benito and Laredo made the list of the 20 metropolitan areas with the least ozone air pollution.

Baton Rouge was the nation's 16th most ozone-polluted city this year.

Region 7: Nebraska, Kansas, Iowa, and Missouri

None of the states in this region had counties on the list of the 25 most ozone-polluted counties or cities, although seven counties in Missouri earned Fs. Lincoln, Nebraska made the list of the 20 metropolitan areas with the least ozone air pollution. In Iowa, four counties with ozone air monitors had no ozone air pollution in unhealthy ranges. Two counties in Kansas improved their grades from 2002.

Region 8: Montana, North Dakota, South Dakota, Wyoming, Utah, and Colorado

In Colorado, six counties jumped at least one grade in this year's report over the 2002 assessment: in one case from a C to an A, and another from an F to a C.

None of the states in this region had counties on the list of the 25 most ozone-polluted counties or cities. In

both Colorado and North Dakota, five counties with ozone air monitors had no ozone air pollution in unhealthy ranges.

Four cities in the region made the list of the 20 metropolitan areas with the least ozone air pollution. They were Colorado Springs and Greeley, Colorado; Fargo-Moorhead, North Dakota/Minnesota, and Sioux Falls, South Dakota.

Region 9: California, Nevada, Arizona, and Hawaii

For the fourth year in a row since the State of the Air reports began, California has the top four most ozone-polluted metropolitan areas in the United States: Los Angeles-Riverside-Orange County; Fresno; Bakersfield and Visalia-Tulare-Porterville. Sacramento-Yolo and Merced came in at 6th and 7th, and San Diego at number 18th. Redding, California, dropped from the 21st most ozone-polluted city in the 2002 report to 97 in the 2003 assessment.

California also has the five most ozone-polluted counties once again: San Bernadino, Fresno, Kern, Tulare and Riverside. Los Angeles, El Dorado, Merced and Kings Counties came in at 7-10, while Nevada, Ventura, and Sacramento Counties ranked 13-15. Altogether, thirteen counties in Region 9, all of them in California, were among the nation's most ozone-polluted.

There was some good news in California: 10 counties with ozone air monitors had no ozone air pollution in unhealthy ranges, including San Francisco. And as noted above, San Luis Obispo jumped from an F to an A rating from last year's report. Four metropolitan areas in California (Salinas, San Francisco, San Luis Obispo-Atascadero-Paso Robles, and Santa Cruz-Watsonville) made the list of the 20 cities with the least ozone air pollution. Flagstaff, Arizona/Utah, and Honolulu, Hawaii, also made the list. Two counties in Arizona and three counties in Nevada had no monitored ozone air pollution in unhealthy ranges.

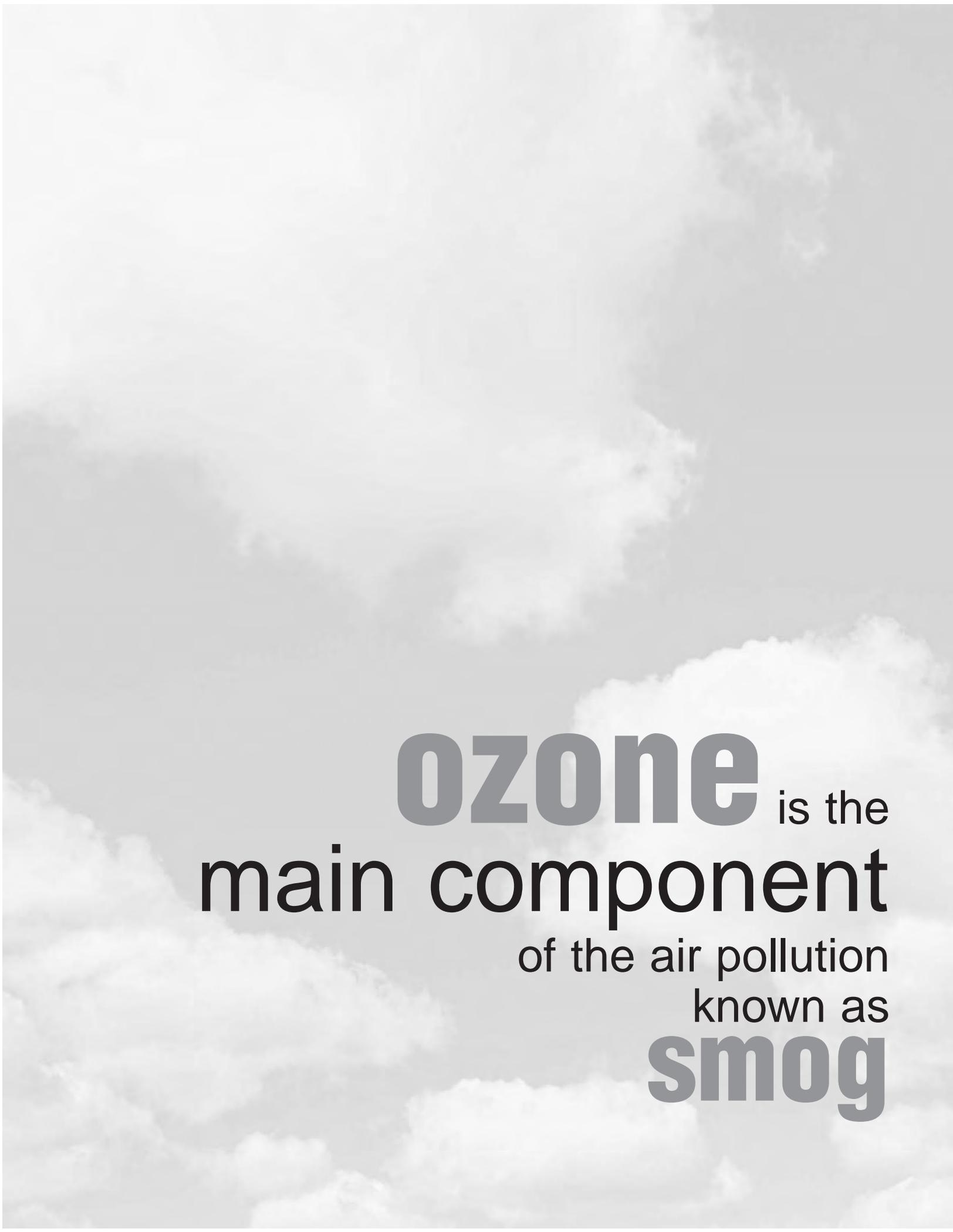
Phoenix-Mesa, Arizona, was the 15th most ozone-polluted metropolitan area this year.

Region 10: Washington, Oregon, Idaho, and Alaska

In Oregon, four counties jumped at least a grade – two from a C to an A, and two from a B to an A. In Washington, three counties saw improvement in grade. Seven counties in Washington and the five counties in Oregon and the six in Washington with ozone air monitors had no ozone air pollution in unhealthy ranges. Alaska and Idaho also earned all As.

The region landed five on the list of the 20 metropolitan areas with the least ozone air pollution: Bellingham and Spokane in Washington; Eugene-Springfield and Medford-Ashland in Oregon, and Portland-Salem, Oregon/Washington. None of the states in this region had counties on the list of the 25 most ozone-polluted counties or cities.

State and local governments have agencies dedicated to the fight against air pollution. This report is in no way intended to evaluate the work of these agencies. It is important to note that some states that have made great strides have had the greatest levels of intractable pollution to remove. Also, the short time frame of this series of reports limits any evaluation of the trends in each community.



ozone is the
main component
of the air pollution
known as
smog

The American Lung Association has chosen ozone as the focus of the *State of the Air* reports because it is one of the most damaging and most pervasive of the common outdoor air pollutants. Ozone poses health dangers for millions of people in the United States, in both big and small metropolitan areas.

Dangers of Ozone

Ozone is an intensely irritating gas. Ozone is the main component of the air pollution known as smog. Ozone reacts chemically (“oxidizes”) internal body tissues that it comes in contact with, such as those in the lung.

As noted at the beginning of this report, ozone, at levels commonly found in the air in many American cities during summer months, can damage the lungs and airways, causing them to become inflamed, reddened and swollen. This response can cause coughing, burning sensations and shortness of breath. Ozone increases the risk of asthma attacks in people with asthma.

The evidence about the damaging health effects of ozone continues to mount. Much research has been conducted about ozone since 1997, the last time the Environmental Protection Agency reviewed the ozone standards. The Clean Air Act requires that the standards be reviewed every five years, so it is imperative that the EPA review the standards to consider the wealth of new information that has accumulated in the last six years.

Research on the effects of prolonged exposure to relatively low levels of ozone has found reductions in lung function, inflammation of the lung lining and breathing discomfort. In studies of animals, ozone exposure has been found to increase susceptibility to bacterial pneumonia infection.

One study of 16 Canadian cities over a 10-year period found that air pollution, including ozone, at relatively low concentrations, is associated with excess admissions to the hospital for respiratory diseases.²

Ozone levels generally rise from May through September when higher temperatures and the

increased amount of sunlight combine with the stagnant atmospheric conditions that are associated with ozone air pollution episodes.

In recent years, scientists have begun to focus on the effects of long-term, repeated exposure to high levels of ozone. A study of college freshmen who were lifelong residents of California found a strong relationship between lifetime ozone exposure and reduced lung function.³ Additional evidence of shorter term effects comes from a study of 72 cadets at the U.S. Military Academy at West Point, who attended a summer training program in which they spent an average of 11 hours a day outdoors. The study found that the 21 cadets who attended summer training in Fort Dix, New Jersey, an area with elevated ozone levels, had a larger drop in lung function over the summer, compared with the cadets who trained at sites in Georgia, Missouri and Oklahoma with lower ozone levels.⁴

High ozone levels are particularly dangerous for people with asthma. When ozone levels are high, more people with asthma suffer asthma attacks that require a doctor’s treatment or use of extra medication.

Children at Special Risk

A number of recent studies have added to the evidence that children are especially vulnerable to the harmful effects of ozone. Children spend significantly more time outdoors, especially in the summertime when ozone levels are the highest. Children also spend more time exercising, which causes them to breathe in more air, and therefore bring more pollution deep into the lungs.

A new study increases evidence that ozone negatively affects the growth of lung function in children. The four-year study followed 1,600 southern California children enrolled as fourth graders in 1996.⁵ The researchers found that the children’s exposure to ozone was correlated with reduced growth in peak flow rate—the ability to push air out of the lungs, which is an indicator of growth in lung function. Larger deficits in lung function growth rate were observed in children who spent more time playing outdoors, confirming

findings from an earlier study of another similar group of children.

The earlier study of 1,150 children followed for three years suggests that long-term ambient ozone exposure might negatively affect human lung function growth. The researchers observed small but consistent decrements in lung function in the children that were associated with ambient ozone exposure.⁶

In another new study, Austrian researchers have followed almost 1,000 schoolchildren from eight communities for three years, with lung function measurements taken in the winter and summer. Although they looked at the impact of particulate matter and NO_x, they found that exposure to ozone also reduced lung-function growth, confirming earlier work. The authors note that early impairment of lung-function growth could lead to lower lung function in adulthood, predisposing individuals to chronic pulmonary diseases.⁷

Researchers have found that when air pollution worsens, more children stay home sick from school due to respiratory illnesses. The University of Southern California researchers found that school absences due to sore throats, coughs, asthma attacks and similar problems increase in the three to five days after a significant rise in ozone.⁸ Another study of schoolchildren in Nevada also found that increases in ozone levels were associated with an increase in the school absentee rate.⁹

Children with asthma are particularly susceptible to ozone. One recent indicator that the 1997 ozone standards aren't protective enough for children with asthma comes from a study of 850 children with asthma ages 4-9 living in eight inner-city urban areas in the United States: the Bronx and East Harlem in New York, Baltimore, Washington, D.C., Detroit, Cleveland, Chicago and St. Louis. Of all the pollutants studied, ozone had the greatest effect on morning peak expiratory flow rate, an indicator of lung function. Adverse respiratory effects were reported in all the cities studied. The authors noted that the results show further evidence of harm to children with

asthma at levels below the current 1997 air quality standards.¹⁰

Other studies also have shown a link between ozone exposure and lung function reductions in children with asthma. Researchers at the University of Southern California conducted a 10-year prospective study of Southern California public school children, and found a statistically significant association between ozone exposure and decreased lung function in girls with asthma.¹¹ Another recent study found asthmatic children who had a low birthweight or a premature birth are especially susceptible to the effects of summer ozone.¹²

Children with asthma can benefit greatly from a reduction in ozone concentrations, as a study of the 1996 Summer Olympics in Atlanta demonstrates. The city made a concerted effort to reduce traffic congestion to enable spectators to get to the games. Public transit was enhanced, the downtown was closed to private cars, and businesses were encouraged to promote telecommuting and alternative work hours. The result: large and significant decreases in ozone concentrations. During this period, researchers found significant reductions in the numbers of urgent care visits, emergency care visits, and hospitalizations for asthma among children ages 1-16.¹³

A recent study of children has found a possible link between playing team sports in a high-ozone area and an increase in the risk of developing asthma. Researchers at the University of Southern California in Los Angeles followed more than 3,500 children from 12 communities in southern California. None of the children had been diagnosed with asthma when they enrolled in the study, although some had a history of wheezing. After five years, 265 children had been diagnosed with asthma. Overall, children living in communities with high ozone levels who played team sports were more likely to develop asthma. The risk of asthma increased with each additional sport played by a child in a high-ozone community.¹⁴

The Elderly and Ozone

For most people, breathing ability is reduced over time. So even the healthy elderly are at increased risk from exposure to ozone and other air pollutants, which further reduces their lung function. Ozone air pollution also increases susceptibility to influenza, pneumonia and other infections, which are especially dangerous for the elderly. A study of the relationship between daily death rates in the elderly, outdoor air temperatures and ozone levels in Belgium confirms the deadly potential of ozone for senior citizens. The study found an association among daily mortality in the elderly and ambient ozone concentration during the hot summer of 1994.¹⁵ In addition, ozone can significantly worsen the condition of people with chronic bronchitis and emphysema, and since most of these diseases occur in the elderly population, these elderly are at special risk for exposure to ozone.

Ozone and the Air Quality Index

The Air Quality Index (AQI), established by EPA, is used by state and local agencies to report levels of air pollution. The AQI divides ambient concentrations of air pollution into categories, assigning each one a descriptor and color: Green (good), Yellow (moderate), Orange (unhealthy for sensitive groups), Red (unhealthy), Purple (very unhealthy). The American Lung Association identifies sensitive groups for ozone as children, the elderly, people with lung disease including asthma, outdoor workers, and healthy adults who exercise outdoors.

American Lung Association State of the Air: 2003 finds some noticeable reductions in the number of Orange, Red and Purple days compared with last year's report. This year, with 14 more counties being monitored compared with last year's report, there was a total of 10,815 Orange days in counties being monitored for ozone—1,811 fewer days than the previous year. The number of Red days dropped from

1,388 to 1,102 during the same period. Purple days decreased from 182 in the 2002 report to 107 in this year's report. However, there were still more than 12,000 high-ozone days for the period covered in the 2003 report.





our air is still
too polluted
in too many places
putting the nation's
health at risk

PROTECTING THE NATION FROM OZONE

Ozone: Where It Comes From

Ozone is formed when sunlight and warm temperatures interact with chemicals known as hydrocarbons (or volatile organic compounds) and nitrogen oxides (NO_x). Volatile organic compounds, or VOCs, come from a variety of human activities, especially gasoline and diesel exhaust and the evaporation of solvents (including dry cleaning fluids, paint, surface coatings, and pesticide applications). Nitrogen oxides are also emitted in gasoline and diesel exhaust, but also from the combustion of fossil fuels in power plants and factories. More details on the sources of VOCs and NO_x nationally can be found in Appendix B.

Since the Clean Air Act was enacted in 1970, efforts to reduce ozone have concentrated on reducing, first, the volatile organic compounds, and only more recently, the nitrogen oxides. EPA has been tracking NO_x and five other major air pollutants since 1970, and found that while carbon monoxide, lead, particulate matter, sulfur dioxide, and volatile organic compounds have decreased significantly, NO_x emissions have increased approximately 17 percent.¹⁶ Reductions in VOCs have resulted in improved ozone levels: aggressive national programs tackling ozone have reduced 8-hour ozone levels nationwide by 11 percent from 1982 to 2001. However, ozone levels in some parts of the country actually increased in the decade of the 1990s, evidence that more aggressive steps were needed, especially targeting NO_x .



An air quality monitoring station in Woodland, California, that monitors for ozone and fine particulates. Photo courtesy of Larry Greene, Yolo-Solano Air Quality Management District, Davis, California.

Wind can carry ozone hundreds of miles, so people who don't live in areas with high levels of VOC and NO_x emissions aren't necessarily safe from these emissions. The Clean Air Act contains provisions that have allowed states to target significant sources of pollutants like NO_x far from their borders that are contributing to their high ozone levels.¹⁷ Several states have used those provisions to challenge pollution in other states. In addition, EPA launched a call for reduced NO_x emissions in many Eastern and Midwestern states that have high emissions from coal-fired power plants. The requirements from these actions won't be fully felt until after 2004.¹⁸

Ozone levels can be effectively reduced, using a combination of federal, state, and local efforts. For example, the adoption of new federal emissions standards and cleaner fuel requirements to reduce the emissions of ozone-forming pollutants from construction equipment and other large non-road engines would make a major contribution to healthier air quality. State governments can fund more transit options in growing urban and suburban areas. City and county officials can plan development patterns that encourage walking and transit use.



Monitoring systems in trailer in Vermont. Courtesy of Vermont Department of Environmental Conservation.

In Appendix B, regional differences in ozone are discussed, including trends and sources of VOCs and NO_x.

The Clean Air Act: Under Fire

Since the passage of the Clean Air Act in 1970, Americans have been slowly but surely moving toward cleaner air. Human exposure to many dangerous pollutants has declined significantly due to federal, state, and local enforcement of the Act. The Clean Air Act has been one of our nation's most successful environmental laws.¹⁹

Unfortunately, as we demonstrate in *American Lung Association State of the Air: 2003*, our air is still too polluted in too many places, putting the nation's health at risk.

The American Lung Association is greatly concerned about roadblocks to continued progress toward cleaner air. Threats to the Clean Air Act come from two areas: continued delays in implementing the 1997 ozone standards and proposals to roll back key provisions of the Clean Air Act.

Failure to Follow Clean Air Act Requirements

Delay in Enforcing the Standards. The Clean Air Act mandates EPA to review ozone standards every five years. In 1997, the EPA issued a revised National Ambient Air Quality Standard for ozone, in large part due to constant legal pressure from the American Lung Association. This standard resulted from the most strenuous review of the science ever undertaken by the agency, and included more than 3,000 studies. The 1997 ozone standard averages ozone concentration over 8 hours and was intended to replace the 1-hour standard in effect since 1979. Research has

shown that lower levels of ozone which occur over long periods, such as 8 hours, harm human lungs. The 1-hour standard only protects against peak exposure; the 8-hour standard protects against those lower, but more pervasive, chronic levels of ozone, while at the same time generally addressing those peak periods.

The EPA identified many annual health benefits of this more protective standard in 1997. Among them were: one million fewer cases of reduced lung function in children; hundreds of thousands fewer instances of aggravated coughing and other serious respiratory symptoms; and thousands fewer visits to emergency rooms and admissions to hospitals for people with asthma.

Standards
that are
not enforced
do not protect
our citizens.

Numerous industry groups sued EPA to challenge the standards. The D.C. Circuit ruled in May 1999 that EPA's interpretation of the Clean Air Act was unconstitutional, but the American Lung Association, EPA, and two states appealed this ruling to the Supreme Court. On February 27, 2001, the Supreme Court unanimously struck down the Court of Appeals' constitutional ruling, and sent the case back for further proceedings. The Supreme Court affirmed that the EPA had the authority to implement the 8-hour standard, but directed the agency to

reconsider its implementation approach. On March 26, 2002, the Court of Appeals upheld the 1997 air pollution standards, effectively ending the five-year legal battle as to their validity. EPA is still in the process of addressing another aspect of the Supreme Court's ruling—specifically, the Court's directive that EPA reexamine its approach to implementing the 1997 ozone standard.²⁰

The EPA was required by law to designate “nonattainment areas” for the new ozone standard by 2001. A nonattainment area is one or more counties that have air dirtier than the national standards for a specific pollutant. Once the EPA designates a nonattainment

area, several automatic controls are to be put into place, and the state and local air pollution offices begin work on a plan to reduce air pollution by a specified date. However, because the EPA has not yet designated the nonattainment areas more than five years after the tougher standards were adopted, the states have not yet begun work on their plans, and are still relying on the same weaker standards in used since 1979.

On May 20, 2002, the American Lung Association and eight environmental groups took legal action against the EPA to force them to start designating nonattainment areas. On November 13, 2002, the EPA agreed that it would make those official designations by April 2004. However, standards that are not enforced do not protect our citizens. Cleaning up the pollution from ozone is a long process, since many changes must be made. Under current conditions, the states will not have to submit their plan for cleaning up the air until 2007, 10 years after the standards were established.

Complying with the Standards. In settling the industry lawsuit challenging the 1997 standards, the courts determined that the EPA's plan to implement the ozone standard had failed to meet certain Clean Air Act requirements. To address that problem, the EPA is revising its guidelines for implementing the standard. These guidelines are EPA's instructions to the states on what steps they must take and what timetable they must meet to reduce the ozone pollution so areas can meet the standard. EPA began revising its implementation plan with public meetings in the winter of 2002. The American Lung Association is very concerned that these guidelines provide the most aggressive, proven provisions for reducing ozone and will continue to participate in discussions and planning for them.

As of early 2003, the EPA timeline for attaining the ozone air quality standard is as follows: in 2003, EPA will announce its guidelines for implementing the standard to the states, and states will recommend to EPA areas that do not attain the ozone standard. In April 2004, EPA will designate areas as nonattainment or attainment, and in 2007, states will submit implementation plans for nonattainment areas.

Deadlines for attainment of the new ozone standard will not come until between 2009 and 2021.

Early Action Compacts. In view of this long process and to avoid some of the long-term requirements of being labeled nonattainment, some local and state governments have signed agreements with EPA, termed Early Action Compacts. These state and local governments have offered to impose some controls voluntarily, earlier than under the normal schedule. In return, EPA would delay some of the requirements of long-term control on these areas, assuming that these early actions will enable them to meet the ozone standard. The American Lung Association favors local and state governments taking steps to voluntarily clean up ozone air pollution because of the benefit to the health of that community. However, the emission reduction mechanisms that would be forfeited are potential critical tools to prevent ozone from returning as a problem in the future. Of grave concern is that the Early Action Compacts fundamentally contravene the Clean Air Act. The American Lung Association will continue to express its concern and will closely observe these agreements and retain the option of challenging them in the future.

Failure to Review the Standards. Research around the world uncovers new information about the harm of ozone and other air pollutants on an ongoing basis. In recognition of this, the Clean Air Act requires that every five years the EPA must review the research on the health effects and review the standards themselves to see whether they reflect the requirement to "protect human health with an adequate margin of safety." EPA has failed to begin or complete that review during the five years since the last review was completed in 1997.

On December 24, 2002, the American Lung Association and eight environmental groups wrote to EPA Administrator Christine Whitman informing EPA of plans to sue the agency in 60 days for its failure to review the science and the standards for ozone and fine particles as required by law. At the time of this report, the issue was still unresolved.

Threats to Roll Back Clean Air Act Provisions

New Source Review. The American Lung Association is concerned about efforts to delay or derail a provision of the Clean Air Act called New Source Review. Added in the 1977 amendments to the Clean Air Act, New Source Review requires approximately 17,000 of the nation's oldest and dirtiest power plants, oil refineries, and other industrial facilities to meet the same emissions standards as a newly built one (i.e. a new source) by installing up-to-date pollution control devices if modifications to the plant significantly increase air pollution. Congress had assumed that such facilities, including power plants and refineries, would be replaced over time. To forestall industry attempts to keep adapting or enlarging these plants without cleaning them up, Congress included the New Source Review requirements.

In 1999, the EPA took dozens of the most egregious utility violators to court, and initiated administrative action against others. A few cases had been settled when the Bush Administration announced plans in May 2001 to review the New Source Review process. The EPA held public hearings to receive comment on the process while the Department of Justice reviewed the legality of EPA's authority to act. On Jan. 15, 2002, the Justice Department confirmed EPA's authority to enforce the NSR provisions.

On December 31, 2002, the Bush Administration formally proposed changes to New Source Review that represent a major setback to public health and roll back key provisions of the Clean Air Act. The changes, which go into review without further notice and comment, include:

- Allowing industrial plants to claim credit for controls installed 10 years earlier
- Exempting controls implemented in the last 15 years from upgrade if they were in compliance when installed
- Allowing plants to avoid having to clean up all pollutants if they clean up one

- Severely limiting actions that states and local governments can take to stop transported pollution.

On February 28, 2003, the American Lung Association and five environmental organizations notified EPA of the intention to sue in 60 days over the Agency's proposals. At this writing, attorneys general from fifteen states, primarily in the Northeast, have also sued EPA over the NSR provisions.

In addition, EPA proposed to redefine a seemingly simple but key trigger of the New Source Review process: routine maintenance. Under the procedures, if a company were only performing routine maintenance on its facilities, the company would not have to comply with the New Source Review requirements. EPA is proposing to allow a much broader definition of routine maintenance which would allow the cost of the activity and not its effect on pollution to exempt it from review. The American Lung Association opposes this definition as too broad and not reflective of the purpose of the Clean Air Act. EPA held public hearings in five cities on March 31, 2003 to take public comment on this proposal. The Lung Association and environmental allies testified at the hearings and continue to offer comment to EPA throughout the comment period, which closes May 3, 2003.

Power Plants. Power plants have become the single biggest industrial cause of unhealthy air. The death, disease, and environmental destruction caused by power plant pollution continue to mount as the emission of nitrogen oxides and sulfur dioxide has increased and the emission of mercury and carbon dioxide has gone unabated.

Since 1970, the Clean Air Act has exempted the oldest, dirtiest coal-burning power plants from complying with modern emissions standards. As a result, these power plants are permitted to emit as much as 10 times more nitrogen oxide and sulfur dioxide than modern coal plants. Even worse, the entire industry is currently allowed to emit unlimited amounts of mercury and carbon dioxide. Power plants remain the largest unregulated source of toxic mercury air emissions.

This loophole in the Clean Air Act allows power companies to keep using these older facilities with outdated pollution controls. As a result, the power industry is relying on these dirty old plants more than ever. No other single source of pollution causes so many adverse health and environmental impacts as do coal-burning power plants.

A Bush Administration proposal, introduced as the Clear Skies Initiative, purports to cut pollution from power plants but will be less protective than the Clean Air Act, delaying and reducing cuts in sulfur dioxide, nitrogen oxides, and mercury pollution. The administration plan would roll back existing requirements, while permitting more pollution to continue for decades longer. Specific evidence that the administration proposal sanctions more pollution than current requirements of the Clean Air Act are found in comparing the two, using EPA's own internal assessments.²²

- The administration plan allows *more than one and a half times as much* NO_x for nearly a decade longer (2010-2018), and *one third more* NO_x even after 2018.
- The administration plan allows *more than twice as much* sulfur dioxide (SO₂) for nearly a decade longer (2010-2018), compared with faithful enforcement of the current Clean Air Act. After 2018, SO₂ emissions will still be *one and a half times* higher than if current law is enforced.
- The administration plan lets power plants emit *more than five times as much* mercury for a decade longer (2010-2018) and *three times as much* after 2018.
- The full pollution reductions are likely to be further delayed, to as late as 2025, because of emissions "banking" provisions.

The administration plan also repeals key provisions of the Clean Air Act. No longer would local governments be able to require state-of-the-art pollution controls in new plants *of any type* or in any older plants that were increasing their pollution when they rebuilt or expanded their facilities. No longer could

states located downwind of power plants in other states with major pollution effectively require those plants to reduce pollution. Revoking that provision would remove the chief tool the Northeast states used effectively to tackle pollution from Midwest and southern power plants. Even the national parks and wilderness areas would be threatened by more pollution under the administration proposal. It would repeal clean up requirements for existing sources, while weakening Clean Air Act safeguards built in for these protected lands.

Real Steps to Clean Up Power Plants

The existing Clean Air Act will require major reductions from power plants as written. If Congress considers legislation to require further reductions, the American Lung Association supports an approach that curbs power plant emissions of all the major power plant pollutants. The Clean Power Act (S. 366 introduced by Senators James Jeffords, I-VT, Susan Collins, R-ME, and Joseph Lieberman, D-CT) uses just such an approach. The bill preserves key provisions in the Clean Air Act, but targets levels of power plant pollutants that must be reduced. It provides a coordinated approach for all four major power plant pollutants—sulfur dioxide, nitrogen oxides, mercury and carbon dioxide—within the next six years. These components would ensure that power plants become cleaner and local air quality is protected.

New Actions Needed to Clean Up the Dirtiest Diesel

The Problems with Diesel. Diesel exhaust has been linked in numerous scientific studies to cancer, the exacerbation of asthma and other respiratory diseases. Dozens of studies link airborne fine particle, such as those in diesel exhaust, to increased hospital admissions for respiratory diseases, chronic obstructive lung disease, pneumonia, and heart disease and up to 60,000 premature deaths annually in the U.S.

The health risk from diesel exposure is greatest for children, the elderly, people who have respiratory problems or who smoke, people who regularly exercise in diesel-polluted areas, and people who work or live near diesel exhaust sources. A study released in February 2001 by the Natural Resources Defense Council and the Coalition for Clean Air shows that children who ride a diesel school bus may be exposed to up to four times more toxic diesel exhaust than someone traveling in a car directly in front of it. The study found that excess exhaust levels on school buses were 23 to 46 times higher than levels considered to be a significant cancer risk, according to EPA and federal guidelines.²³

Progress on Diesel. In January 2001, the EPA reaffirmed regulations issued in 2000 that will help millions of Americans, especially children with asthma, breathe easier. The regulations will significantly limit tailpipe emissions from heavy-duty diesel trucks and buses by cleaning up the engines and the fuels they use.

The new rule will cap sulfur levels in diesel fuel at 15 parts per million (ppm) and impose tough new emission standards on all heavy-duty vehicles. This will result in a more than 90 percent reduction in emissions of harmful pollutants like particulate matter and nitrogen oxides. Particulate matter has been linked to premature death and worsening asthma, and nitrogen oxides are a principal component of ozone smog. A recent study found that ozone increases the damaging effect of diesel exhaust particles in the lungs of rats.²⁴

The oil industry had tried to water down the rules by offering an alternative proposal with higher sulfur levels. That plan would have severely weakened the program and precluded significant reductions of nitrogen oxides and particulate matter pollution. In response to the new regulations governing sulfur in diesel fuel, the National Petroleum Refiners Association filed a lawsuit challenging the new EPA regulations in February 2001. In May 2002, the U.S. Court of Appeals for the District of Columbia Circuit upheld the EPA rules. By denying all industry petitions to review the EPA's heavy-duty vehicle and diesel rule, starting in 2007,

diesel vehicles will be significantly cleaner and between 2006-2009, their fuels will be cleaner, helping millions of Americans, especially children with asthma, breathe easier.

The Dirtiest Diesel: Heavy Equipment and other Diesel Engines. While new rules to regulate emissions of onroad heavy-duty diesels (trucks and buses) will make a great deal of difference in the quality of our air, these rules alone will not be enough. EPA must also take steps to control heavy equipment and other diesel engines and fuel to the same degree as trucks and buses.

Heavy equipment diesel engines include construction equipment, such as bulldozers and excavators; industrial service equipment, including portable generators, airport service equipment, and forklifts; and agriculture equipment, such as tractors and combines. Heavy equipment diesel engines produce more fine particle emissions than heavy-duty trucks and buses.

In 1999, heavy equipment and other diesel engines accounted for 19 percent of NO_x and about one-third of the fine particle emissions. In fact, these heavy equipment emissions have grown more than those from trucks and buses: NO_x emissions jumped 250 percent for heavy equipment from 1970 to 1999, compared with 215 percent for the emissions from heavy duty vehicles.²⁵

Heavy equipment diesel can benefit from the technological advances that will occur in order to meet the 2007 standards for trucks and buses—but only if low-sulfur diesel fuel, which is necessary for these technologies to operate, is available for the nonroad sector, as well. The Lung Association urges EPA to adopt emission standards and a sulfur cap for heavy equipment and other diesels and fuel that are equivalent to those for heavy-duty diesel trucks and buses, and the same time frame.

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Description of Methodology

Statistical Methodology: The Air Quality Data

The data on air quality throughout the United States were obtained from the U.S. Environmental Protection Agency's Aerometric Information Retrieval System (AIRS) database. The American Lung Association contracted with A.S.L. & Associates, Helena, Montana, to characterize the hourly averaged ozone concentration information for the 3-year period for 1999-2001. The 1999, 2000, and 2001 AIRS hourly ozone data were used to calculate the daily 8-hour maximum concentration for each ozone-monitoring site. The data were considered for a 3-year period for the same reason that EPA uses 3 years of data to determine compliance with the ozone: to prevent a situation in any single year, where anomalies of weather or other factors create air pollution levels, which inaccurately reflects the normal conditions. The highest 8-hour daily maximum concentration in each county for 1999, 2000, and 2001, based on the EPA-defined ozone season, was identified.

Using these results, A.S.L. & Associates prepared a table by county that summarized, for each of the 3 years, the number of days the ozone level was within the ranges identified by EPA based on the EPA Air Quality Index:

0.000 – 0.064 ppm	Good (Green)
0.065 – 0.084 ppm	Moderate (Yellow)
0.085 – 0.104 ppm	Unhealthy for Sensitive Groups (Orange)
0.105 – 0.124 ppm	Unhealthy (Red)
0.125 – 0.374 ppm	Very Unhealthy (Purple)

No data capture criteria were used to eliminate monitoring sites. All data within the ozone season were used in the analysis because it was the goal to identify the number of days that 8-hour daily maximum concentrations occurred within the defined ranges.

Following receipt of the above information, the American Lung Association identified the number of days each county with at least one ozone monitor experienced air quality designated as orange, red, or purple.

Description of County Grading System

A weighted average was used to determine the grade of each county. The number of orange days experienced by each county was assigned a factor of 1; red days were assigned a factor of 1.5 and purple days were assigned a factor of 2. By multiplying the total number of days within each category by their assigned factor, a total was determined. Because the monitoring data was collected over a three-year period, the total was divided by three to determine the weighted average. Each county's grade was determined using the weighted average. Counties were ranked by weighted average. Metropolitan areas were ranked by the highest weighted average among the counties in the Census Bureau-defined Metropolitan Statistical Area. All counties with a weighted average of zero (corresponding to no exceedences of the 8-hour standard over the three year period) were given a grade of A. Counties with a weighted average of 0.3 to 0.9 (generally corresponding to 1 to 2 orange days) received a B. Counties receiving a C had only 3 to 6 days over the standard, typically including at most one red day, scored a weighted average of 1.0 to 2.0. Counties received a D if they had a weighted average of 2.1 to 3.2, which meant they had generally 7 to 9 days over the standard. Counties with weighted averages of 3.3 or higher (corresponding to approximately the 8-hour standard) received an F. These counties generally had at least 10 orange days or 9 days over the standard with at least one or more days in the red or purple category.

GRADING SYSTEM

Grade	Weighted Average	Approximate Number of Allowable Orange/Red/Purple days
A	0.0	None
B	0.3 to 0.9	1 to 2 orange days with no red
C	1.0 to 2.0	3 to 6 days over the standard: 3 to 5 orange with no more than 1 red OR 6 orange with no red
D	2.1 to 3.2	7 to 9 days over the standard: 7 total (including up to 2 red) to 9 orange with no red
F	3.3 or higher	9 days or more over the standard: 10 orange days or 9 total including at least 1 or more red or purple

Weighted averages allow comparisons to be drawn based on severity of air pollution. For example, Jessamine County, Kentucky, received a D because it had 9 orange days and 0 red days, earning it a weighted average of 3.0. However, York County, Maine, received an F although it only had 6 orange days, because it also had 3 red days, which signify days with more serious air pollution. York County had a weighted average of 3.5.

Note that this system differs significantly from the methodology EPA uses to determine violations of the ozone standard. EPA determines whether a county violates the standard based on the 4th maximum daily 8-hour ozone reading each year averaged over three years. Multiple days of unhealthy air beyond the highest four in each year are not considered. By contrast, the system used in this report recognizes when a community's air quality repeatedly results in unhealthy air throughout the three years. Consequently, some counties will receive grades of F in this report showing repeated instances of unhealthy air, while still meeting EPA's 1997 ozone standard or the 1-hour ozone standard set in 1979.

Calculations of Populations-at-Risk

Presently, state- (with the exception of adult asthma) and county-specific measurements of the number of persons with chronic and acute lung disease are not available. In order to assess the magnitude of lung disease at the state and county level, we have employed a synthetic estimation technique originally developed by the U.S. Bureau of the Census. This method uses age-specific national estimates of reported lung disease to project the prevalence and incidence of lung disease within the counties served by Lung Association constituents and affiliates.

Population Estimates

The U.S. Census Bureau estimated data on the total population of each county in the United States for 2000. The Census Bureau also estimated the age specific breakdown of the population by county.

PREVALENCE ESTIMATES

Chronic Bronchitis, Emphysema and Pediatric Asthma

In 2000, the National Health Interview Survey (NHIS) estimated the nationwide annual prevalence of diagnosed chronic bronchitis at 9.4 million; the nationwide lifetime prevalence of emphysema was estimated at 3.1 million. The NHIS estimates the prevalence of diagnosed pediatric asthma to be close to 4.0 million under age 18. 2000 represents the most recent year of publication of prevalence data for the Health Interview Survey, and so was utilized to calculate county-specific prevalence. Due to the change in the Health Interview Survey questionnaire, the prevalence estimates calculated for these purposes will differ from those delineated in the 2000 State of the Air Report. However, this year's estimates can be compared to the 2001 and 2002 State of the Air Report. Additionally, estimates for chronic bronchitis and emphysema should not be summed since they represent different types of prevalence estimates.

Local area prevalence of chronic bronchitis, emphysema and asthma are estimated by applying age-specific national prevalence rates from the 2000 NHIS to age-specific county-level resident populations obtained from the U.S. Bureau of the Census web site. Prevalence estimates for chronic bronchitis and emphysema are calculated for those 18-44, 45 to 64 and 65+. The prevalence estimate for pediatric asthma is calculated for those under age 18.

Adult Asthma

In 2001, the Behavioral Risk Factor Surveillance System (BRFSS) survey indicated that approximately 7.2 percent of adults residing in the United States reported having asthma. The information on adult asthma obtained in the Behavioral Risk Factor Surveillance System survey cannot be compared with that from the National Health Interview Survey. Additionally, estimates for pediatric and adult asthma should not be summed since they represent different types of prevalence estimates.

The prevalence estimate for adult asthma is calculated for those 18 to 44, 45 to 64 and 65+. Local area prevalence of adult asthma is estimated by applying age-specific state prevalence rates from the 2001 BRFSS to age-specific county-level resident populations obtained from the U.S. Bureau of the Census web site.

Limitations of Estimates

Since the statistics presented by the NHIS and the BRFSS are based on a sample, they will differ (due to random sampling variability) from figures that would be derived from a complete census, or case registry of people in the U.S. with these diseases. The results are also subject to reporting, non-response and processing errors. These types of error are kept to a minimum by methods built into the survey. Additionally, a major limitation of both surveys is that the information collected represents self-reports of medically diagnosed conditions, which may underestimate disease prevalence since not all individuals with these conditions

have been properly diagnosed. However, the NHIS is the best available source that depicts the magnitude of acute and chronic lung disease on the national level and the BRFSS is the best available source for adult asthma information. The conditions covered in the survey may vary considerably in the accuracy and completeness with which they are reported.

Local estimates of chronic lung diseases are scaled in direct proportion to the base population of the county and its age distribution. No adjustments are made for other factors that may affect local prevalence (e.g., local prevalence of cigarette smokers or occupational exposure) since the health surveys that obtain such data are rarely conducted on the county level. Because the estimates do not account for geographic differences in the prevalence of chronic and acute diseases, the sum of the estimates for each of the counties in the United States may not exactly reflect the national estimate derived by the NHIS or state estimates derived by the BRFSS.

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Regional Differences in Ozone

Introduction

Ozone requires the right mix of two essential groups of gases: volatile organic compounds (VOCs) and nitrogen oxides (NO_x). When those gases are combined in sunlight with the right amount of heat, ozone forms. However, the sources of these gases, success at reducing them and the complications of ozone transported by the wind vary from region to region. The following analysis looks at the sources, trends and transport of ozone in each of the ten regions that EPA uses to group the states.

National Sources of Ozone

All the data on emissions of VOCs and NO_x in this appendix were obtained from the US EPA's National Emissions Trends Tier reports for 1999 inventoried data. Those data include emissions not only from individual facilities (called point sources), but also from so-called area sources which include many small, individual sources (like cars or residences) and sources that cover a large geographic area, such as wildfires. The data are estimated annually, but the sources are inventoried only every three years. The 1999 data are the most current based on inventories of sources. The data are available at <http://www.epa.gov/air/data/nettier.html?us-USA~United%20States>.

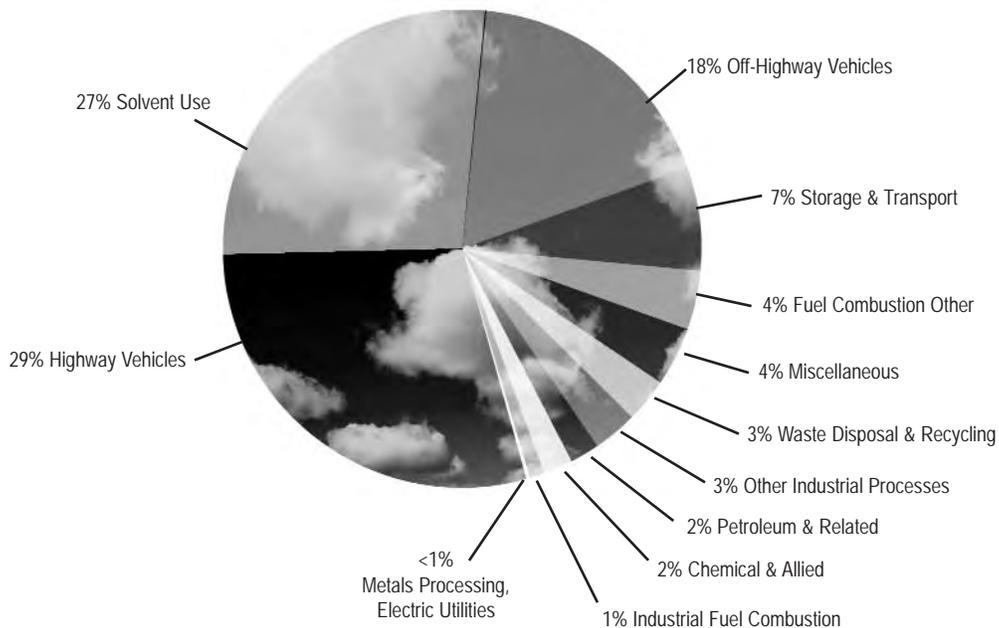
The National Emissions Trend Tier data were sorted by region, by major source category, and by pollutant for this discussion. A brief description from EPA follows to explain each of the major source categories.

What do the Categories in these Pie Charts Mean?

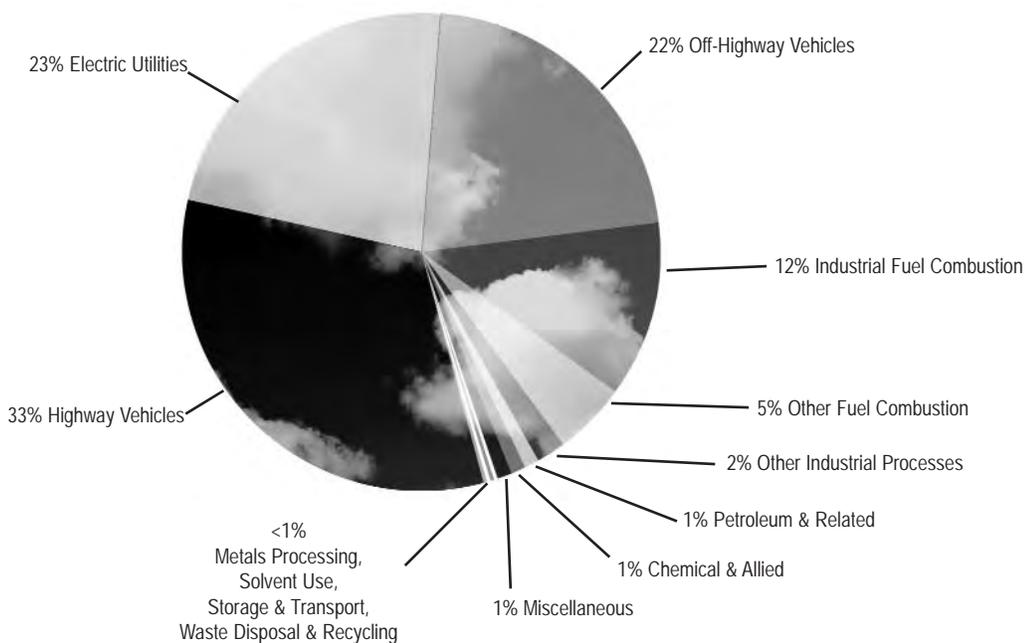
Category	Includes these activities or sources
Electric Utility Fuel Combustion	Power plants that produce electricity
Industrial Fuel Combustion	Boilers and other processes that burn fuel at industrial plants
Other Fuel Combustion	Residential woodstoves and fireplaces; other processes burning fuel in residential, commercial and institutional settings
Chemicals and Allied Products	Industries that produce chemicals and related products
Metals Production	Industries that produce metals and metal products
Petroleum and Related Products	Rubber and plastics production; oil and gas production; petroleum refining
Other Industrial Processes	Agriculture, food, and related products; wood, pulp, and paper; machinery, mineral products
Solvent Use	Graphic arts, dry cleaning, surface coating, degreasing processes, pesticide applications
Storage and Transport	Storage and transport of petroleum and petroleum products, including service stations and bulk terminals and plants and organic chemicals, rail and tank car cleaning
Waste Disposal and Recycling	Wastewater treatment; treatment, storage and disposal facilities; incineration, open burning; scrap and waste materials; landfills
Highway Vehicles	Cars, trucks, buses
Off-Highway Vehicles	Recreational vehicles, construction equipment, marine, rail
Miscellaneous	Cooling towers, firefighter training, engine testing, forest fires, slash/prescribed burning

Source: EPA, *Handbook for Criteria Pollutant Inventory Development: A Beginners Guide for Point and Area Sources*, 1999.

Sources of VOC Emissions in the United States- 1999
 Anthropogenic Sources Only



Sources of NOx in the United States- 1999



Ozone Trends

Nationally, we have seen a significant improvement in the past 20 years in monitored ozone levels with a decline of 11 percent between 1982 and 2001. The EPA map below shows that the success has varied greatly by region. From the steepest drop of 24 percent in Region 9, led by California’s stringent controls, to the significant lack of progress in the lower Midwest in Region 7, where monitored levels have remained

stagnant. More ominously, many regions actually saw a significant increase in ozone levels during the 1990s. Region 7 had the largest increase in that decade, 13 percent increase in monitored ozone levels, while three other regions (3, 4, and 5) also increased monitored 8-hour ozone emissions. For more discussion of the differences in 8-hour ozone trends, see the descriptions below for each region.

Trend in 8-Hour Ozone Levels, 1982–2001, Averaged across EPA Regions
Based on Annual 4th Maximum 8-Hour Average



Source: US EPA, *Air Trends*, 2001, <http://www.epa.gov/oar/airtrends/ozone.html>.

Note on Regional Trends

Because air quality monitors are concentrated in urban locations, it is not possible, strictly speaking, to accurately describe average ozone concentrations across as large an area as an EPA Region. EPA includes this reminder in its discussion of the trend data: “These trends are influenced by the distribution of monitoring locations in a given region and, therefore, can be driven largely by urban concentrations. For this reason, they are not indicative of background regional concentrations.”¹ For more discussion on regional trends, see EPA’s annual *Air Trends* report, at <http://www.epa.gov/oar/airtrends/ozone.html>.

¹ US EPA, *Air Trends*, 2001, <http://www.epa.gov/oar/airtrends/ozone.html>.

The Transport of Ozone

By its nature, ozone is created in the atmospheric mixing bowl and carried by prevailing winds to areas often far beyond its source. Section 110 of the Clean Air Act recognizes the impact of ozone transported across political boundaries, by requiring communities to prevent sources from “contributing significantly” to downwind areas. When that doesn’t work, Section 126 of the Act allows downwind states to petition EPA to step in and act to reduce industrial pollution from upwind sources.

The most comprehensive effort to reduce transported ozone is currently in progress. Years of study in the 1990s had identified significant sources of NO_x, largely from electric power plants, which were contributing to the ozone levels in much of the Northeast. At the request of 8 Northeastern states, EPA issued a rule in September 1998 targeting most of the eastern United States, a requirement commonly referred to as the NO_x SIP call.² This rule required 22 states and the District of Columbia to significantly reduce NO_x emissions by May 1, 2003, a date that was later extended to May 31, 2004, by court action for most of the states.³ The states included in the requirement are: Alabama, Connecticut, Delaware, Georgia, Illinois, Indiana, Kentucky, Massachusetts, Maryland, Michigan, Missouri, North Carolina, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, Wisconsin, and West Virginia.

Ozone is also transported across national borders. For example, ozone produced south and west of the New England states in the Ohio Valley and in the Canadian “Windsor-Quebec Corridor.” In those two areas, heavy concentrations of power plants and transportation corridors produce ozone, which is carried into New England and the Mid-Atlantic States (EPA Regions 2 & 3), as well as into New Brunswick and other Canadian provinces.⁴

Not only does ozone move into a state from the outside, it also moves within the state. For example, some air pollution episodes have been followed hour-by-hour as they moved downwind from city to city within Pennsylvania.⁵ In many cases, the highest levels of ozone will show up in suburban areas to downwind of larger communities. For example, even though an area such as San Francisco County in California may not be experiencing high ozone readings, it may be contributing to poor air quality in outlying areas such as the Sacramento and San Joaquin Valley areas to the East and other parts of the Bay Area to the south.⁶

There are some regions that are notable as sources of transported ozone affecting cities and states within the region and outside it. The Southeast (EPA Region 4) and the Midwest (EPA Region 5) are two. The Southeast is home to some of the most polluting power plants in the nation⁷ and to cities with extremely high driving rates. Atlanta residents average 37.6 miles per day; Birmingham, 35.6; and Asheville, North Carolina, 47.5—all of them much higher than the traditionally car-dependent Los Angeles, whose residents average only 22.2 miles each day.⁸ As a result, the Southeast produces more NO_x emissions (5.4 million tons in 1999) and VOC emissions (4.15 million tons) than any other section of the country.

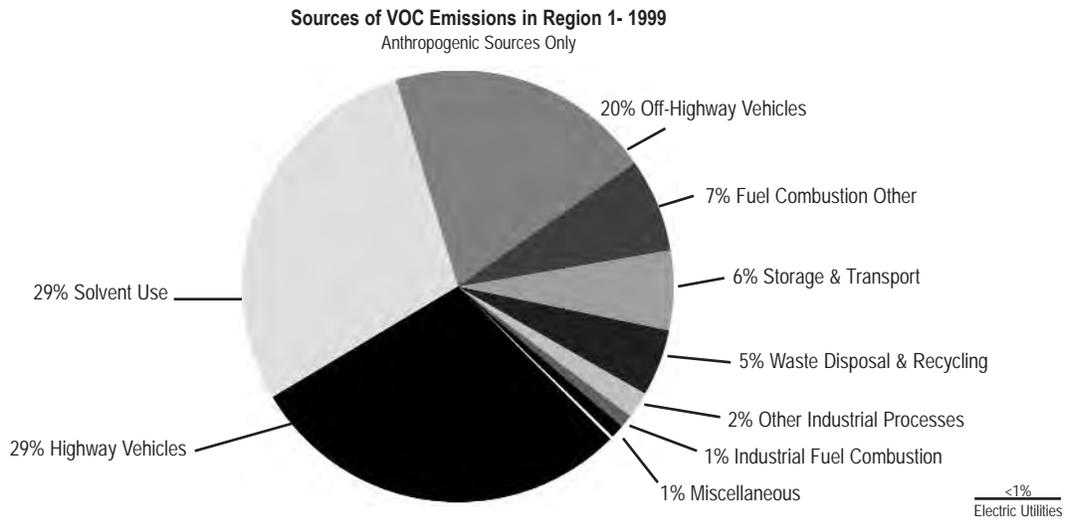
The Midwest (EPA Region 5) is another region with many of the nation’s most polluting coal-fired power plants, including 8 of the top 20 NO_x emitting facilities in the nation in 1999.⁹ This region produces the second highest NO_x emissions—4.98 million tons—and the second highest VOC emissions—3.5 million tons—in 1999.

REGION 1

Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, and Connecticut

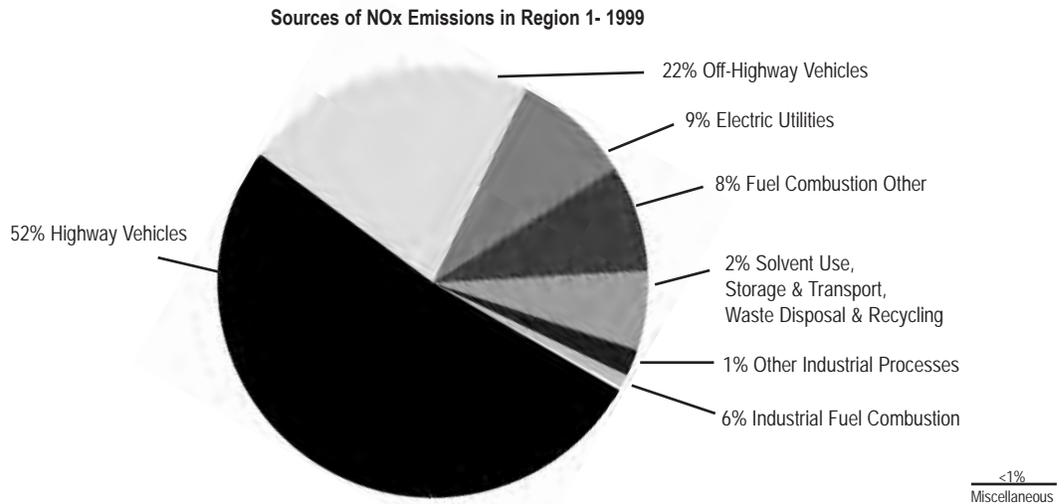
LOCAL SOURCES OF VOCs

VOC sources in this region are very similar to those in the nation as a whole. The largest sources generated by human activity are highway vehicles and solvents, which make up 29 percent each. Off-highway vehicles make up 20 percent. The next largest categories are other fuel combustion (7%), storage and transport (6%) and waste disposal and recycling (5%). Total tons generated by human activity in 1999 were 747,249, the lowest of all the 10 regions.



LOCAL SOURCES OF NOx

Highway vehicles make up a much larger percentage of NOx emissions in New England than in the nation as a whole. Off-highway vehicles are the same percentage as the nation (22%). However, cleaner power plants in the region result in electric utilities contributing only 9 percent of the region's NOx emissions. Other fuel combustion (8%) generates a slightly higher percentage of NOx than the nation as a whole, while NOx from industrial fuel consumption is much lower than the nation at 6 percent. Total tons generated by human activity in 1999: 745,050, the lowest of all the regions.³



TRENDS

Ozone levels have declined significantly more in Region 1 than in the nation as a whole. Region 1 has seen more reductions in ozone levels than all other regions except Regions 9 and 10 (the west coastal states, Alaska and Hawaii). Levels have declined by 20 percent from 1982 to 2001, compared with the national levels, which have dropped by 11 percent in that time frame. However, ozone levels in the region declined by only 3 percent in the 1990s.³¹

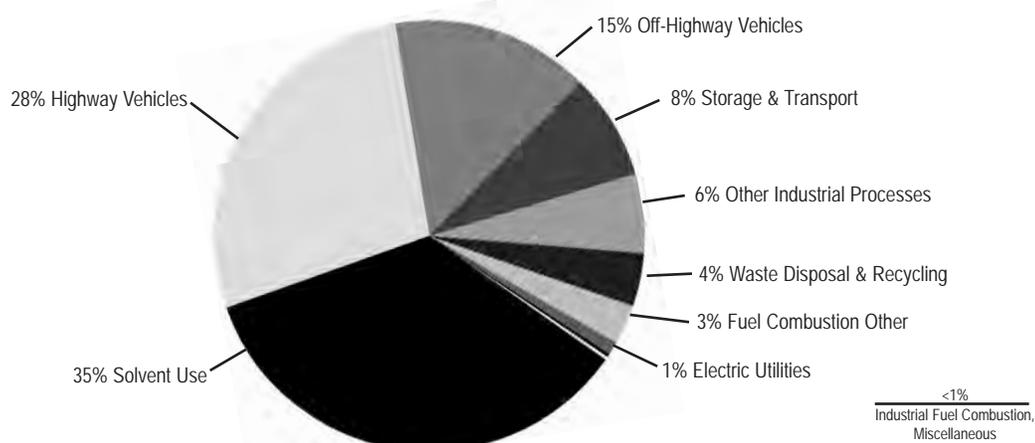
REGION 2

New York, New Jersey, and Puerto Rico

LOCAL SOURCES OF VOCs

In Region 2, more than one-third of human-created VOCs comes from solvent use, compared with the nation as a whole, where only 27 percent comes from those sources. The region's vehicles, both highway and off-road, generate about the same portion of VOCs in these states as they do in the nation (28% and 15% respectively in the region, versus 29% and 18% nationally). Industrial sources, including chemical, metals, petroleum and other industries, comprise 6 percent, which is comparable to the national rate of 7 percent. In 1999, Region 2 produced 1.149 million tons of VOCs.

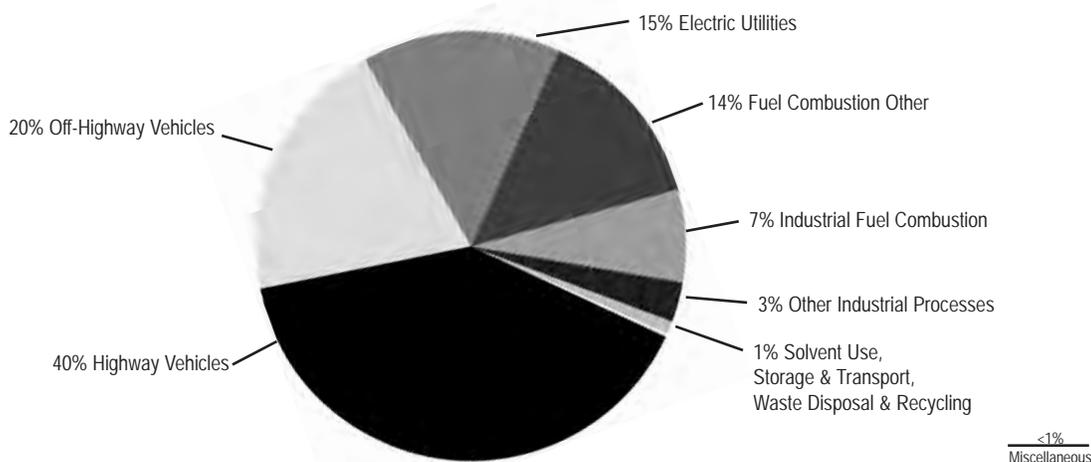
Sources of VOC Emissions in Region 2- 1999
Anthropogenic Sources Only



LOCAL SOURCES OF NOx

Highway vehicles represent a much higher portion of NOx emissions in Region 2 (40%) than the nation as a whole (33%). The portion from off-highway vehicles is slightly lower in the Region, at 20 percent, than the national percentage (22%). Significantly, emissions from electric utilities are much lower, at 15 percent, than nationally (23%). Industrial fuel combustion is also much lower, at 7 percent than the national percentage (12%), but combustion from other sources is significantly higher (14% versus 5%), so the percentage of total fuel combustion from all three sources (electric utilities, industrial and others) is slightly less in the region (36%) than the national rate (40%). In 1999, Region 2 produced 1.305 million tons of NOx.

Sources of NOx Emissions in Region 2- 1999



TRENDS

Ozone emissions in Region 2 declined by 8 percent from 1982 to 2001, a rate slightly lower than the nation as a whole, which dropped 11 percent in the same period. However, during the 1990s, the regional ozone level declined by only 1 percent.

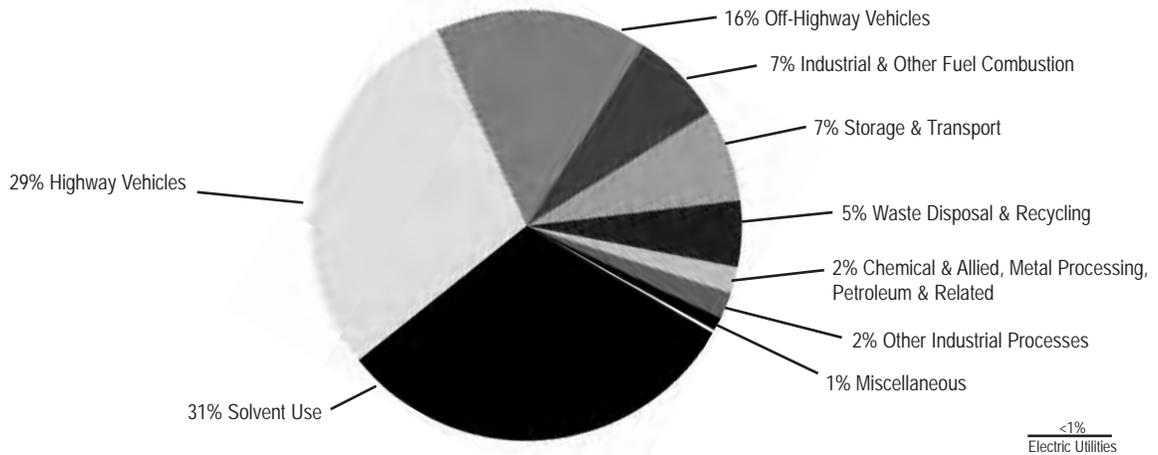
REGION 3

Pennsylvania, Delaware, Maryland, Washington, D.C., West Virginia, and Virginia

LOCAL SOURCES OF VOCs

According to EPA's emissions inventory, human activity in Region 3 in 1999 put 1.51 million tons of VOCs into the air. Once again, the transportation sector accounted for the single largest contribution to the inventory – 45 percent of the Region's emissions, 29 percent from highway vehicles, and 16 percent from off-road vehicles. Transportation generates a similar percentage nationally (47%), but Region 3's off-road vehicle sector is slightly smaller than the national highway vehicle sector (16% v 18%). The other significant source was the use of solvents, comprising 31 percent, nearly a third, of Region 3's emissions of VOCs, higher than the national percentage of solvent use (27%).

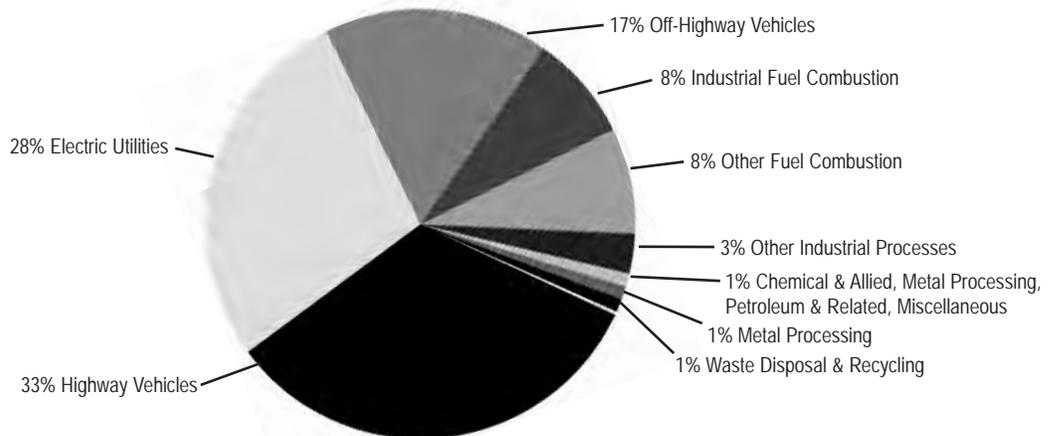
Sources of VOC Emissions in Region 3- 1999



LOCAL SOURCES OF NO_x

According to EPA's emissions inventory, human activity in Region 3 in 1999 put 2.43 million tons of NO_x into the air. Fully half (50%) came from highway vehicles and off-highway vehicles. The other significant contributor was fuel combustion, comprising over 44 percent of Region 3's NO_x emissions. Contributions from electricity generation accounted for nearly two-thirds of this sector and over one-quarter of the whole (28%). Compared with the nation as a whole, Region 3 has a higher percentage from electric utilities (28% v 23% nationally) and a lower percentage from off-highway vehicles (17% v 22% nationally).⁹

Sources of NO_x Emissions in Region 3- 1999



TRENDS

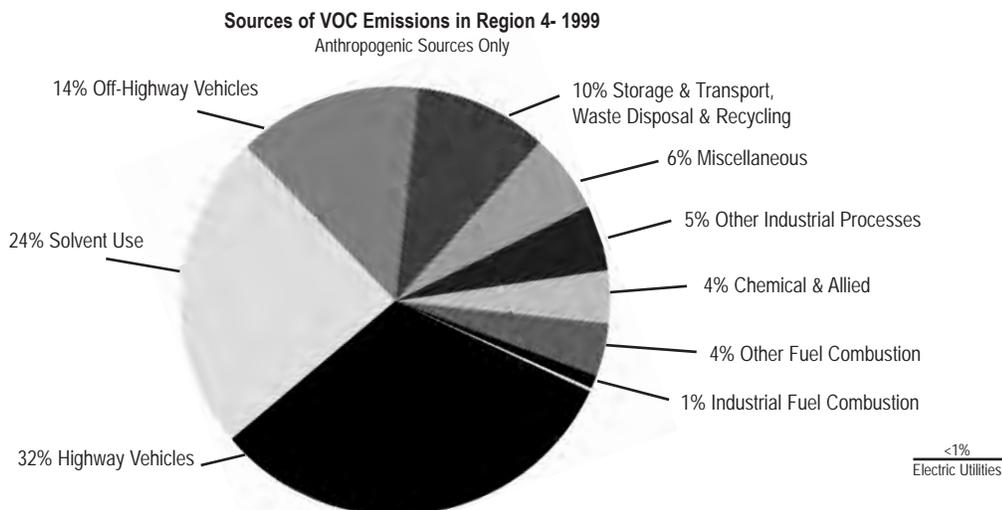
Monitored ozone levels dropped by 4 percent between 1982 and 2001, a trend much lower than the nation as a whole, which dropped 11 percent during the same period. Furthermore, the long-term decline could have been greater had not the region's ozone levels risen by 9 percent in the 1990s.¹⁰

REGION 4

Kentucky, North Carolina, South Carolina, Georgia, Tennessee, Alabama, Mississippi, and Florida

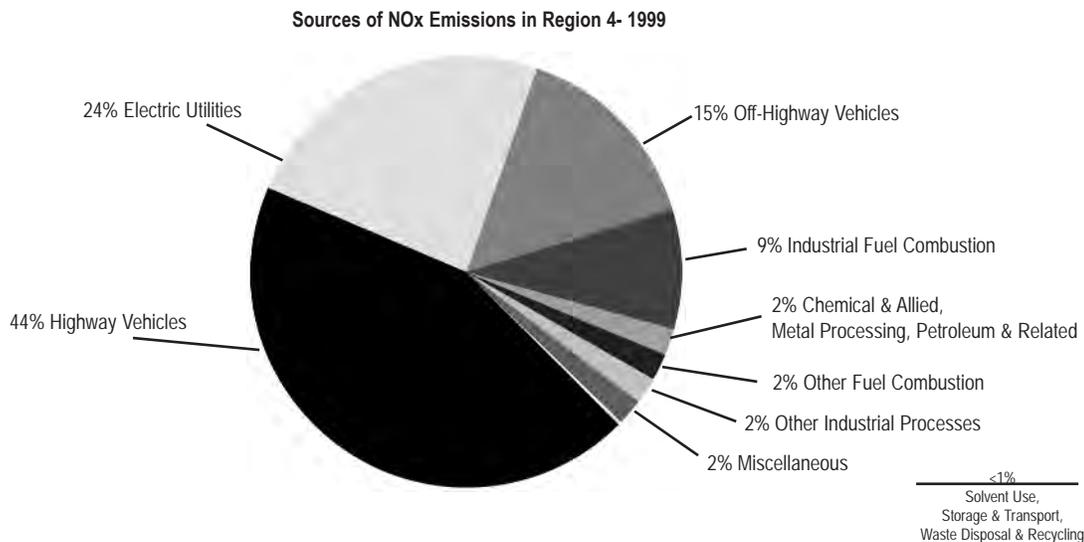
LOCAL SOURCES OF VOCs

Region 4 produces more VOC emissions (4.15 million tons in 1999) than any other section of the country. The largest sources generated by human activity are transportation, which accounts for 46 percent, almost the same as the nation as a whole, which is 47 percent. Of these sectors, the percentage from highway vehicles is greater in the Southeast than it is in the nation (32% v 29% nationwide). Off-highway vehicle sources are lower in the Southeast than nationally (14% v 18%). Solvent use contributed 24 percent of VOCs in the Southeast, compared with 27 percent nationally.



LOCAL SOURCES OF NOx

Region 4 produces more NOx emissions (5.4 million tons in 1999) than any other section of the country. The transportation sectors make up a larger portion of the NOx sources in the Southeast (59%) than they do in the nation as a whole (55%). This is largely due to highway vehicles, which produce a much larger portion of the total in the Southeast (44% v 33%). The next largest sources are emissions from electric utilities, at 24 percent, which is about same as nationally. Industrial fuel combustion makes up a lower percentage in the Southeast than nationwide (9% v 12%).



TRENDS

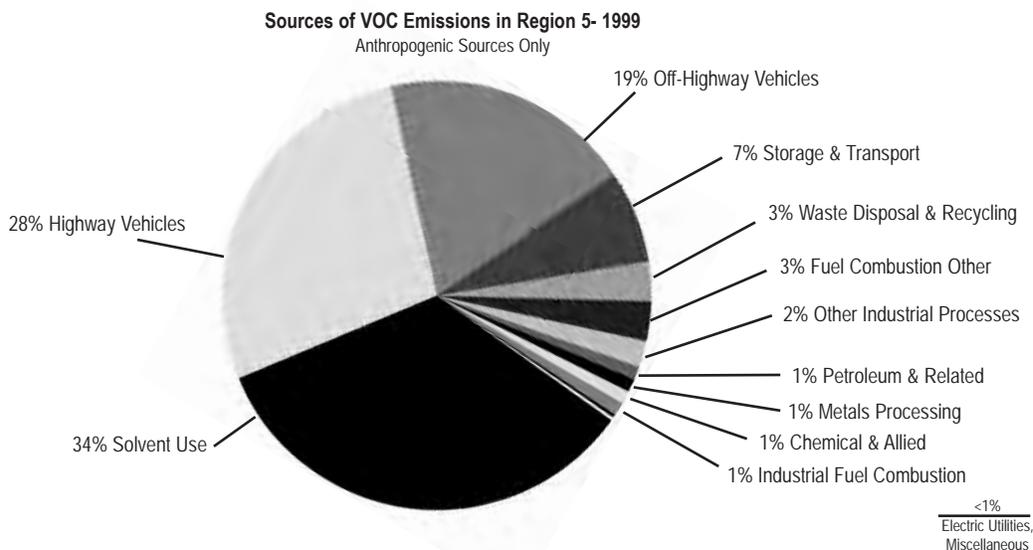
Monitored data show ozone levels in the Southeast have declined, but not as swiftly as the nation as a whole. The ozone levels dropped in the region by 2 percent from 1982 to 2001, much less than the nation which dropped by 11 percent. Furthermore, the long-term decline could have been greater had not the region's ozone levels risen by 9 percent in the 1990s.

REGION 5

Ohio, Indiana, Michigan, Illinois, Wisconsin, and Minnesota

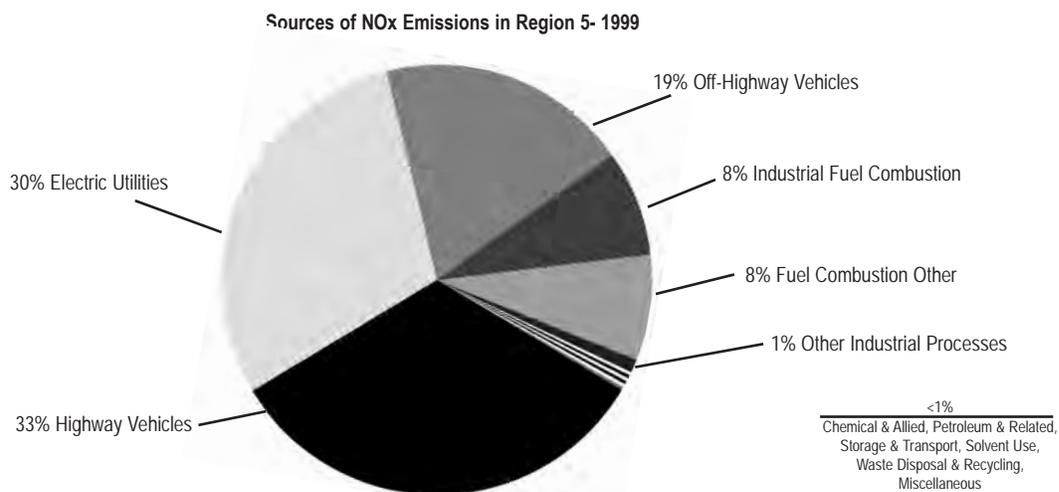
LOCAL SOURCES OF VOCs

The Midwest produced the nation's second highest VOC emissions—3.5 million tons—in 1999. The largest human activity generating VOCs in the Midwest is the use of solvents, which contributes 34 percent, much higher than the U.S. nationally (27%). Highway vehicles and off-highway vehicles are about the same as the nation as a whole (28% and 19% respectively, compared to 29% and 18% nationwide). Other sources are about the same as nationwide, with industry contributing 5 percent, fuel combustion contributing 4 percent, storage and transport 7 percent and waste disposal and recycling 3 percent.



LOCAL SOURCES OF NO_x

The Region produced the nation's second highest NO_x emissions—4.98 million tons—in 1999. Highway vehicles generate the largest amount of NO_x in the Midwest, followed by electric utilities and off-highway vehicles. Highway vehicles generate about one-third of the NO_x, similar to their percentage nationwide. However, electric utilities generate 29 percent of the region's NO_x, compared with only 23 percent nationwide. Off-highway vehicles produce 19 percent, slightly less than the nation as a whole (22 percent). Contributions from industrial fuel combustion make up a third less in Region 5 than they do in the nation (5% compared to 12%).



TRENDS

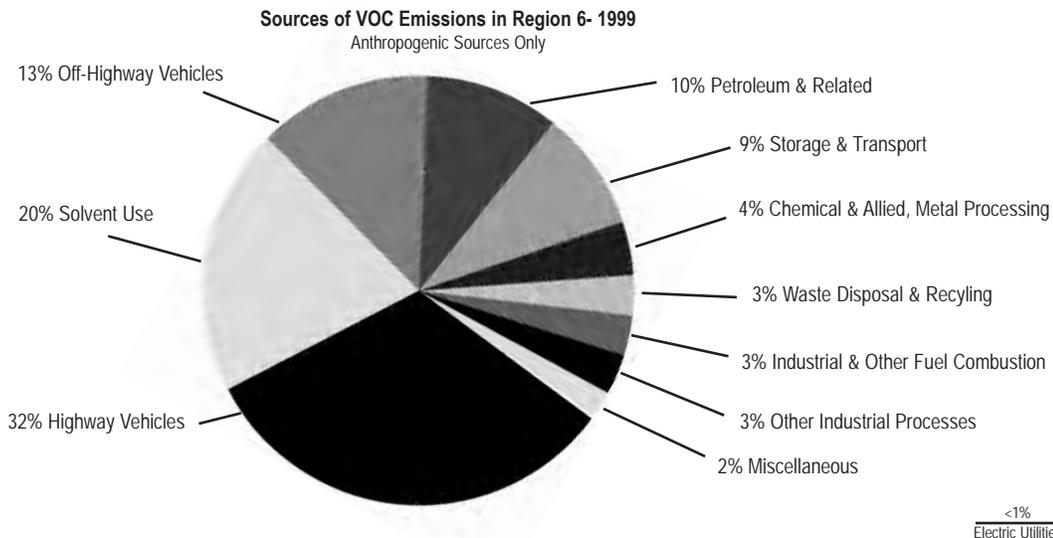
Monitored ozone levels dropped by 9 percent between 1982 and 2001, a trend slightly behind the nation as a whole, which dropped 11 percent during the same period. Furthermore, the long-term decline could have been greater had not the region's ozone levels risen by 7 percent in the 1990s.

REGION 6

Texas, Oklahoma, Arkansas, Louisiana, and New Mexico

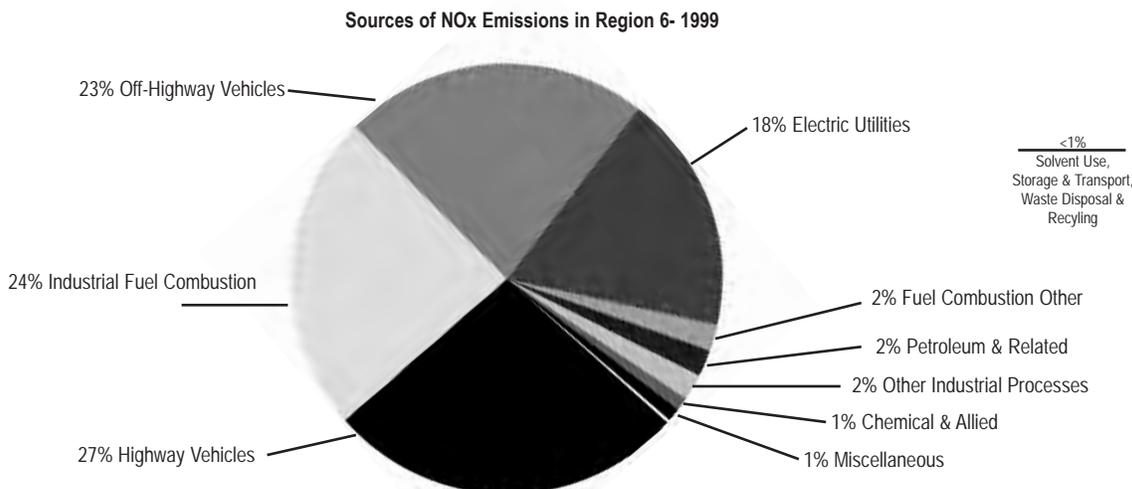
LOCAL SOURCES OF VOCs

VOCs generated by human activity in this region include highway vehicles (32% compared with 29% nationally); off-highway vehicles (13% compared with 18% nationally); and solvents (20% regionally compared with a national rate of 27%). Region 6 had a higher rate of VOCs from petroleum and related products (10% regionally compared with 2% nationally), and storage and transport (9% regionally, compared with a national rate of 7%). This difference probably reflects the concentration of the petroleum industry in the region. Total VOCs produced in Region 6 were 2.5 million tons in 1999, the third highest.



LOCAL SOURCES OF NOx

Highway vehicles represented the largest source of NOx in this region at 27 percent, lower than national rate of 33 percent. The next highest source of NOx in the region is industrial fuel combustion, which, at 24 percent, is very high compared with the national percentage (12%). Off-highway vehicles produce 23 percent of NOx regionally, compared with 22 percent nationally. Electric utilities represented 18 percent regionally, compared with 23 percent nationally. Petroleum and related NOx, at 2 percent, is twice the national rate (1%), and probably reflects concentration of the petroleum industry in the region. Total NOx produced in Region 6 was 4.2 million tons in 1999 (the third highest region).



TRENDS

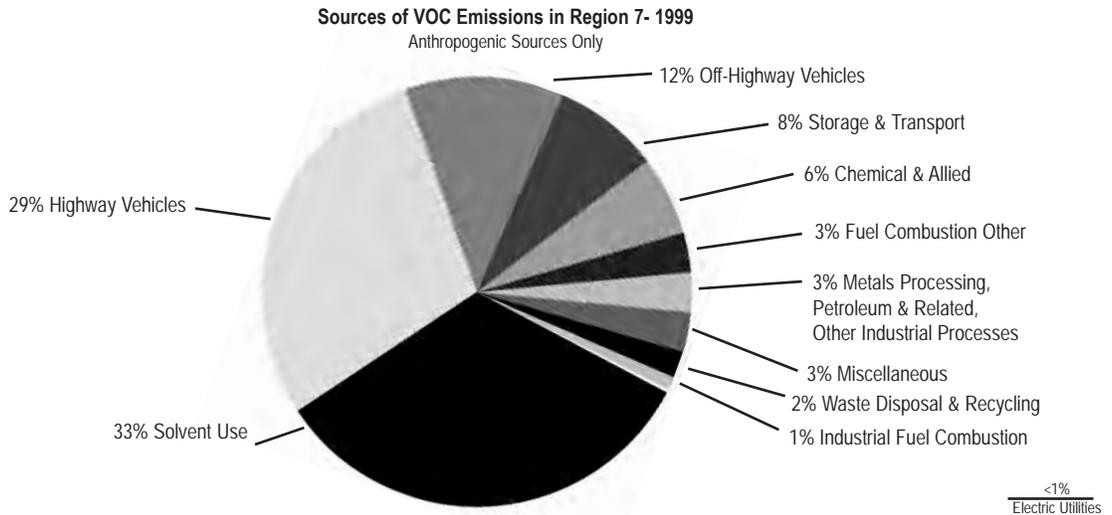
Monitored ozone levels dropped by 9 percent between 1982 and 2001, a trend slightly behind the nation as a whole, which dropped 11 percent during the same period. Furthermore, the long-term decline could have been greater had not the region's ozone levels remained unchanged from 1990-1999.

REGION 7

Nebraska, Kansas, Iowa, and Missouri

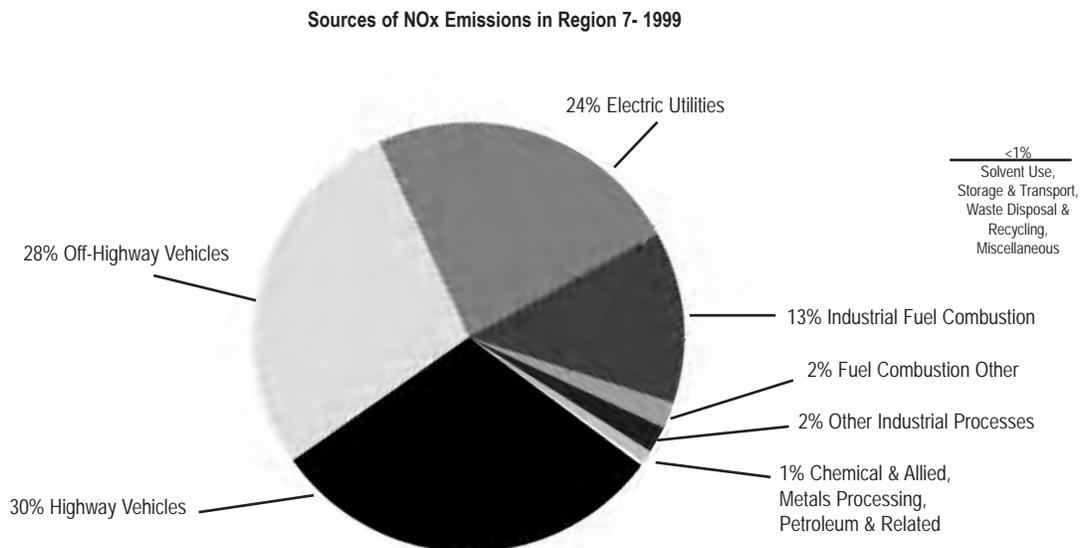
LOCAL SOURCES OF VOCs

Human activity generated 979,660 tons of VOCs in Region 7 in 1999, the third lowest amount of any region. It is unusual that the largest sources are solvents at 33 percent, higher than the national rate of 27 percent, which may reflect the greater rural nature of large parts of the region. Highway vehicles generate the second highest amount of VOCs, which at 29 percent is the same as the nationwide rate. Off-highway vehicles generate 12 percent of VOCs regionally, which is one-third lower than the national rate of 18 percent. VOCs from chemical and allied industries are also three times higher in this region than nationally (6% v 2%).



LOCAL SOURCES OF NO_x

Highway vehicles, at 30 percent, are the largest source of NO_x emissions in this region—but they account for less in Region 7 than nationally (33%). NO_x from off-highway vehicles is significantly higher here than nationwide (28% v 22%). Electric utilities produce about one-fourth of NO_x here, about the same as nationwide (24% v 23%). Industrial fuel combustion is about the same, though other fuel combustion is less than half the percentage nationwide. Total NO_x in 1999 in Region 7 was 1.6 million tons.



TRENDS

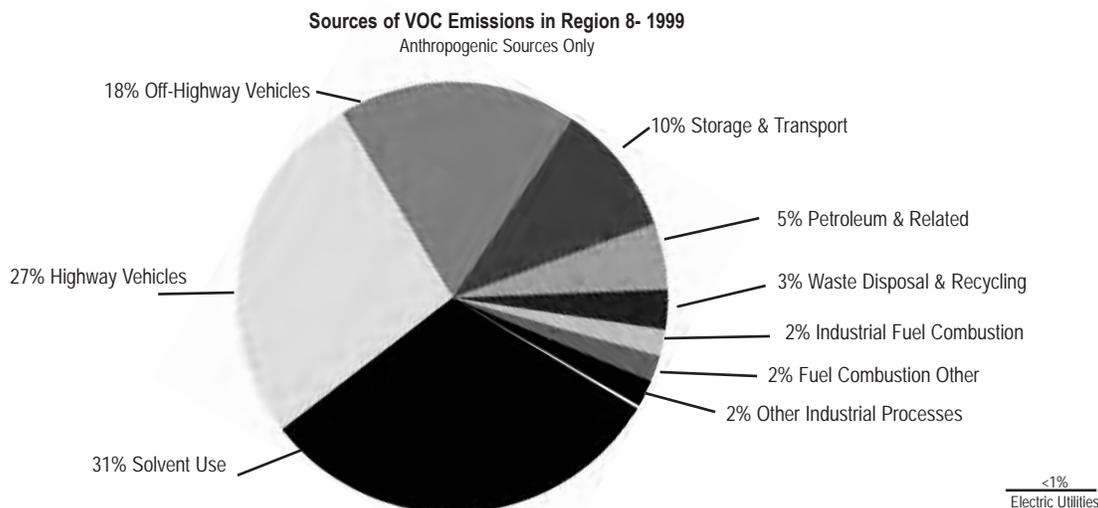
This is the one region of the nation where monitored ozone levels remained unchanged between 1982 and 2001, in contrast to the nation as a whole, which dropped 11 percent during the same period. Furthermore, the region's ozone levels rose by 13 percent from 1990-1999, the worst increase in any region during that decade.

REGION 8

Montana, North Dakota, South Dakota, Wyoming, Utah, and Colorado

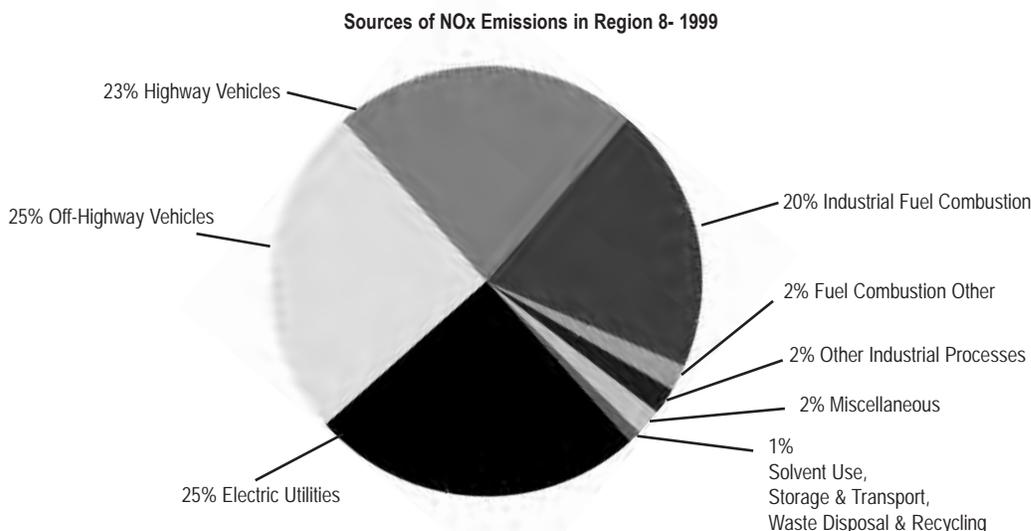
LOCAL SOURCES OF VOCs

The largest human-generated source of VOCs in Region 8 is solvent use, at 31 percent, higher than the nation as a whole. Highway vehicles contribute just over one-fourth at 27 percent, lower than the 29 percent produced nationally. Off-highway vehicle use, the third largest source, is 18 percent, the same as the national rate. In 1999, Region 8 produced 778,485 tons of VOCs, the second lowest of all the regions.



LOCAL SOURCES OF NOx

The largest sources of NOx emissions in Region 8 were electric utilities and off-highway vehicles, which each generated one-fourth of the total of 1.5 million tons in 1999. Nearly another fourth came from highway vehicles (23%). While the electric utility and off-highway contributions are higher than the nation as a whole, the highway vehicle contribution is lower by ten percent (23% v 33%). Industrial fuel combustion in the region makes up a much larger proportion, at 20 percent, than it does nationwide (12%). Industrial sources are less of a factor than in the nation as a whole (2% v 4%).



TRENDS

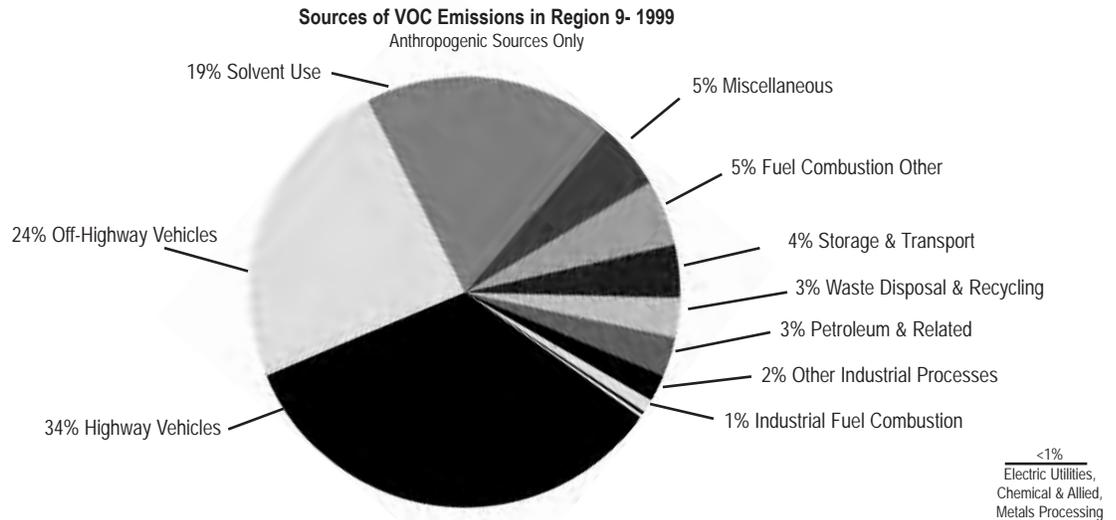
Monitored ozone levels dropped by 9 percent between 1982 and 2001, a trend slightly behind the nation as a whole, which dropped 11 percent during the same period. Furthermore, the long-term decline could have been greater had not the region's ozone levels dropped by only 1 percent in the 1990s.

REGION 9

California, Nevada, Arizona, and Hawaii

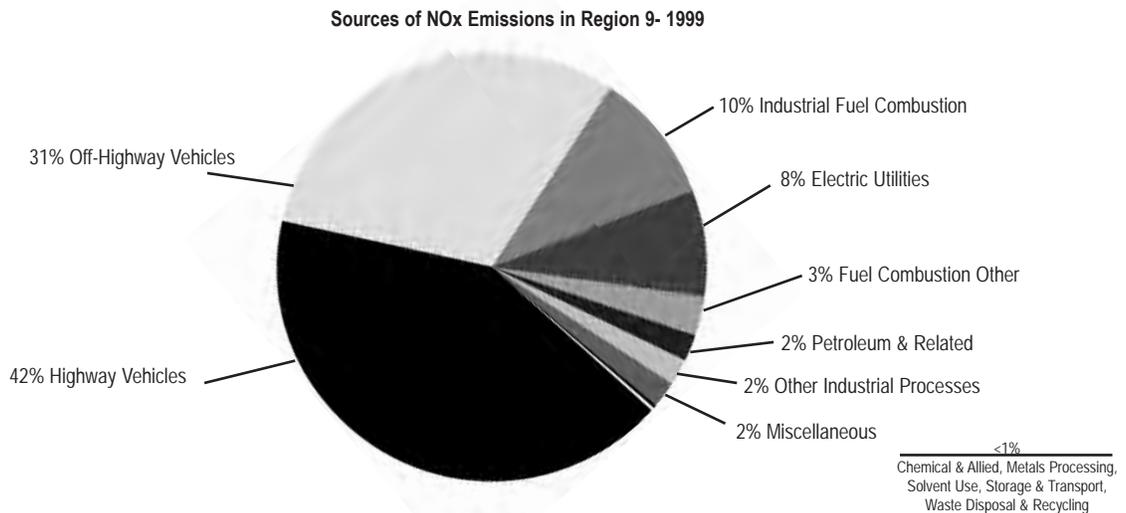
LOCAL SOURCES OF VOCs

The largest source of VOCs generated by human activity was highway vehicles, at 34 percent, compared with the national rate of 29 percent. Off-highway vehicles generated 24 percent of VOCs regionally, compared with 18 percent nationally. Solvents generated less than the national rate (19% v 27%). Industrial sources generated about the same regionally and nationally (5%). Storage and transport generated much less VOCs regionally compared with the national rate (4% v 7%). Total VOCs emitted in 1999 in Region 9 was 1.51 million tons.



LOCAL SOURCES OF NOx

Highway vehicles generate a much greater percentage of NOx in Region 9, 42 percent versus 33 percent nationally. NOx generated off-highway is greater in Region 9 than nationwide (31% v 22%). By contrast, electric utilities are much less of a source of NOx in the region (8% v 23%.) Industrial fuel combustion is slightly less regionally (10% v 12% nationwide). NOx emissions in Region 9 totaled 2.25 million tons in 1999, the fourth highest in the nation. Two-thirds of the NOx in Region 9 is produced in California.



TRENDS

California has led the way in reducing ozone levels in the nation. This success is reflected in the steep decline in Region 9's ozone levels from 1982 to 2001, when the monitored levels dropped by 24 percent, the greatest reduction in any region of the nation and over twice the national rate (11%). Furthermore, in the 1990s when 4 of the 10 regions increased emissions, this region was second only to the Northwest, Region 10, in reducing ozone, dropping 13 percent in that decade.

Growth and dependence on the car will continue to challenge the region in achieving clean air. In California, for example, the population grew by 39 percent between 1981 and 2000. That growth was far outstripped by increased driving: the average daily number of vehicle miles traveled grew by 91 percent in that same period.^{xiii}

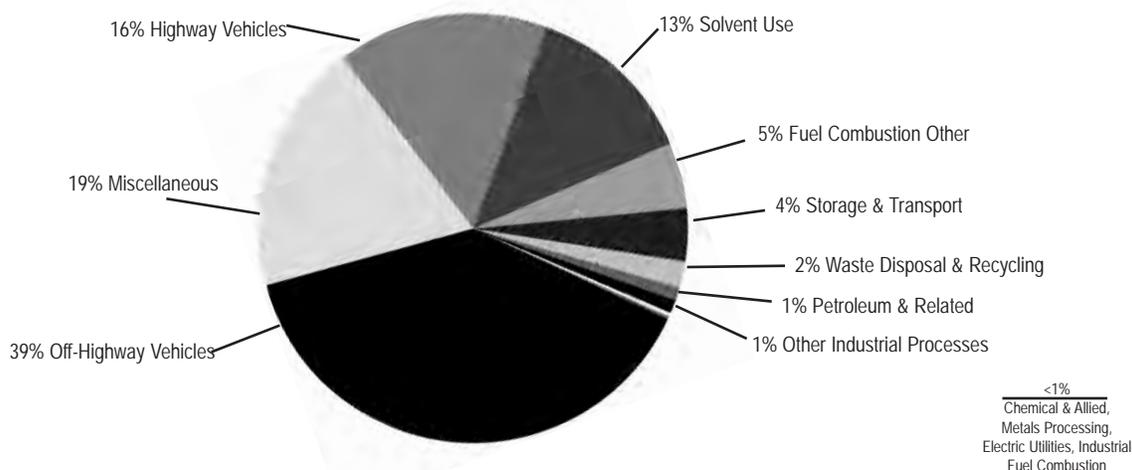
REGION 10

Washington, Oregon, Idaho, and Alaska

LOCAL SOURCES OF VOCs

In this section of the country, off-highway vehicles dominate the VOC sources from all human activity, contributing nearly two-fifths (39%) of the total. By contrast, the nation's off-highway section is less than half that at 18 percent. Highway vehicles represent only 16 percent, about half the national rate of 29 percent. Solvent use also contributes less than half the rate seen nationally, at 13 percent versus 27 percent. Other VOC sources are more similar to the national rates, though industrial sources are half (2% v 4%) of the nationwide rate. Region 10 produced 1.3 million tons of VOCs in 1999.

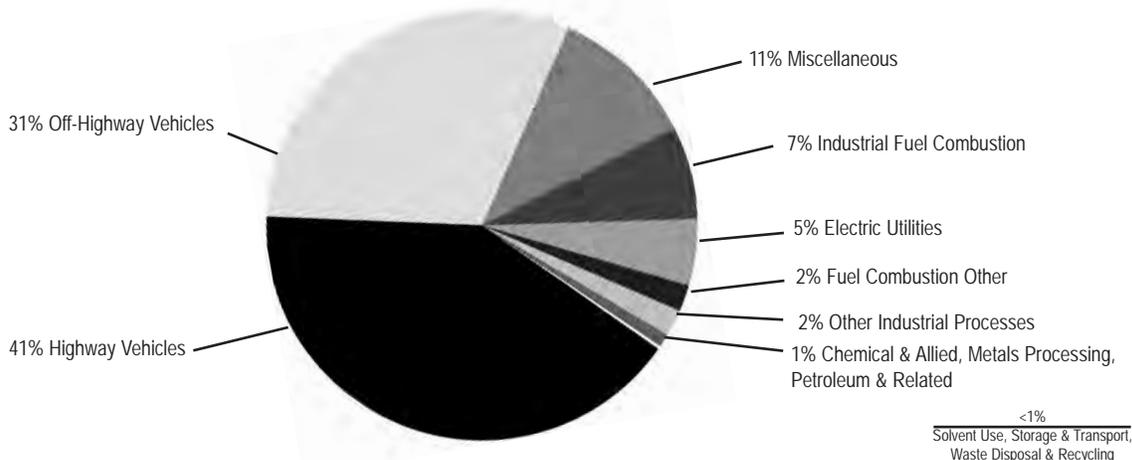
Sources of VOC Emissions in Region 10- 1999
Anthropogenic Sources Only



LOCAL SOURCES OF NOx

Highway vehicles contribute the largest amount of NOx in the region—41 percent of the 892,073 tons generated in 1999. This is the second lowest NOx total of all regions in the nation. The percentage of highway vehicle NOx emissions in Region 10 is higher than it is in the nation as a whole, where it makes up 33 percent of emissions. Off-highway vehicles contribute 31 percent of NOx, higher than the national rate of 22 percent. Electric utilities emit only 5 percent of total NOx in this region, compared with 23 percent nationwide. Miscellaneous sources are an unusually high percentage at 11 percent. Industrial fuel combustion is only 7 percent compared with 12 percent nationally. Industrial emissions that are not fuel combustion account for 3 percent, slightly less than the national rate of 5 percent.

Sources of NOx Emissions in Region 10- 1999



TRENDS

Ozone monitors show the second greatest drop in ozone readings (21%) in Region 10 among the 10 regions in the nation during the period 1982-2001. During the same period the nation dropped by only 11 percent. During the 1990s, when many areas in the nation had increased ozone levels, the northwest and Alaska saw the greatest drop, by 21 percent.

ENDNOTES

¹ US EPA, Air Trends, 2001, <http://www.epa.gov/oar/air-trends/ozone.html>.

² US EPA, Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transportation of Ozone, 40 CFR Parts 51, 72, 75 and 96.

³ US EPA, Interstate Ozone Transport, Response to Court Decisions on NO_x SIP Call, the NO_x SIP Call Technical Amendments, and Section 126 Rules, February 12, 2002 Found at http://www.epa.gov/ttn/naaqs/ozone/rto/sip/data/ph2prop_final.pdf.

⁴ Notes from the New Brunswick Lung Association, 2003. One of the groups working to reduce cross border ozone transport, is the Lung Associations' International Centre for Air Quality and Human Health created by the American Lung Association of Maine and the New Brunswick [Canada] Lung Association. The Centre promotes actions to reduce emissions and improve air quality for the people in the six New England states and in five eastern Canadian provinces. Actions high in the Centre's priorities are assessing the region's air quality and health impacts, facilitating research and educating the public.

⁵ Correspondence from Kevin Stewart, American Lung Association of Pennsylvania, February 5, 2003.

⁶ Communication from the American Lung Association of California, January 2003.

⁷ EPA, National Environmental Trends Database, 1999 data.

⁸ Office of Highway Policy Information, Federal Highway Administration, Highway Statistics 2001.

⁹ EPA, National Emissions Trends database, 1999 data.

¹⁰ All data on sources of VOCs and NO_x by region are from the U.S. Environmental Protection Agency, National Emissions Trends database, 1999 data. <http://www.epa.gov/air/data/index.html>.

¹¹ All discussion of trends in ozone are from the same source, EPA, Air Trends, 2002, <http://www.epa.gov/airtrends/ozone.html>; EPA, National Air Quality and Emissions Trends Report, March 2001.

¹² California Air Resources Board, Air Quality Almanac, 2002.

Additional Comparison Tables

Table C-1: Comparison of Number of Counties and High Ozone Days, State of the Air Reports 2000-2003

Grade	Counties								High Ozone Days in Unhealthy Ranges			
	2000		2001		2002		2003		2000	2001	2002	2003
	#	%	#	%	#	%	#	%	#	#	#	#
*	122	18.0	83	12.6	83	12.2	75	10.8	*	*	*	*
A	62	9.1	55	8.3	56	8.3	68	9.8	0	0	0	0
B	48	7.1	41	6.2	39	5.8	53	7.7	68	58	51	78
C	59	8.7	58	8.8	61	9.0	79	11.4	259	258	271	356
D	54	8.0	41	6.2	48	7.1	33	4.8	426	326	367	260
F	333	49.1	382	57.9	391	57.7	384	55.5	11,073	13,877	13,344	11,318
TOTAL	678	100.0	660	100.0	678	100.0	692	100.0	11,826	14,519	12,020	12,012

Note: * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

Table C-2: Cities Deleted from the List of the 25 Most Ozone-Polluted Cities Between 2002 and 2003 State of the Air Reports

City	Rank		Grade	
	2003	2002	2003	2002
Redding, CA*	97	21	F	F
Chattanooga, TN-GA*	36	24	F	F

* Metropolitan Statistical Area

Table C-3: Counties Deleted from the Lists of the 25 Most Ozone-Polluted Counties Between 2002 and 2003 State of the Air Reports

County	Rank		Grade	
	2003	2002	2003	2002
Blount, TN	26	16	F	F
Douglas, GA	32	18	F	F
Knox, TN	41	19	F	F
Fayette, GA	48	23	F	F
Maricopa, AZ	33	24	F	F
Wake, NC	50	25	F	F

APPENDIX D

State Data Tables

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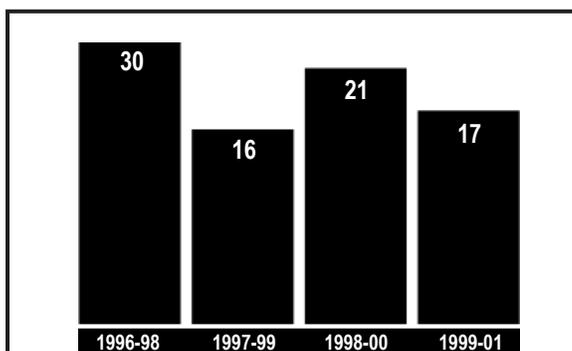
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Baldwin	140,415	28,251	21,703	897	768	113	925
Clay	14,254	777	359	187	690	525	202
Elmore	65,874	14,053	7,071	936	3,118	2,249	721
Jefferson	662,047	136,156	90,285	9,082	31,571	23,321	8,177
Lawrence	34,803	7,385	4,195	494	1,651	1,209	410
Madison	276,700	59,292	30,015	3,915	13,113	9,467	3,042
Mobile	399,843	91,438	47,919	6,076	18,430	13,478	4,554
Montgomery	223,510	48,085	26,307	3,188	10,501	7,612	2,495
Morgan	111,064	23,428	13,708	1,556	5,290	3,883	1,326
Shelby	143,293	31,732	12,179	2,080	6,761	4,790	1,420
Sumter	14,798	3,547	2,056	238	662	492	176
Tuscaloosa	164,875	32,135	18,565	2,131	7,985	5,728	1,803
TOTAL	2,276,444	483,061	280,340	32,340	107,712	78,740	26,572

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Shelby County Air Quality Trends



Each bar marks the Weighted Averages for Shelby County for each period.

Changes for 2003 Report

- Monitoring data are now being collected in Tuscaloosa County, but are no longer being collected in Geneva County.
- Elmore County's grade rose from an F to a C.
- Sumter County's grade dropped from an A to a B.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Baldwin	*	*	*	*	*	*	*	*	*	*	*
Clay	14	0	0	4.7	F	7.7	F	7.7	F	7.7	F
Elmore	5	0	0	1.7	C	3.5	F	2.5	D	2.3	D
Jefferson	30	3	0	11.5	F	16	F	14	F	14.3	F
Lawrence	10	0	0	3.3	F	4.6	F	4	F	2.7	D
Madison	23	0	0	7.7	F	11.5	F	10.8	F	6.7	F
Mobile	18	0	0	6	F	8.5	F	5.5	F	4.7	F
Montgomery	12	1	0	4.5	F	8.3	F	6.3	F	4	F
Morgan	*	*	*	*	*	*	*	*	*	*	*
Shelby	44	5	0	17.2	F	20.5	F	15.8	F	30	F
Sumter	1	0	0	0.3	B	0	A	0	A	0	A
Tuscaloosa	*	*	*	*	*	*	*	*	*	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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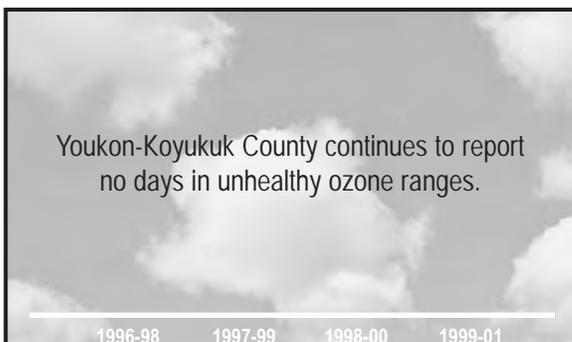
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Yukon-Koyukuk	6,551	1,859	478	127	316	194	58
TOTAL	6,551	1,859	478	127	316	194	58

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Youkon-Koyukuk County Air Quality Trends



Changes for 2003 Report

- There were no changes from the 2002 report. Youkon-Koyukuk County continues to report no days in unhealthy ozone ranges.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Youkon-Koyukuk	0	0	0	0	A	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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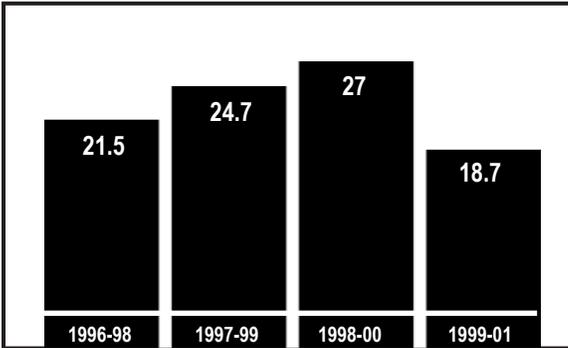
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Cochise	117,755	25,539	17,365	1,714	7,284	4,155	1,543
Coconino	116,320	27,531	8,143	1,848	6,855	3,671	1,006
Gila	51,335	10,640	10,159	713	3,257	1,938	828
Maricopa	3,072,149	702,252	358,979	45,789	187,472	102,603	33,503
Pima	843,746	173,681	119,487	11,497	53,324	29,839	10,595
Pinal	179,727	37,664	29,171	2,493	11,339	6,465	2,466
Yavapai	167,517	28,853	36,816	1,958	11,220	6,698	2,929
Yuma	160,026	39,041	26,456	2,559	9,611	5,432	2,106
TOTAL	4,708,575	1,045,201	606,576	68,570	290,362	160,801	54,976

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Maricopa County Air Quality Trends



Each bar marks the Weighted Averages for Maricopa County for each period.

Changes for 2003 Report

- Monitoring data are now being collected in Pinal County.
- Yavapai County's grade improved from a D to a C.
- Yuma County's grade improved from a C to a B.

High Ozone Days

County	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Cochise	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Coconino	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Gila	*	*	*	*	*	*	*	*	*	*	*
Maricopa	56	0	0	18.7	F	27	F	24.7	F	21.5	F
Pima	1	0	0	0.3	B	0.3	B	0.7	B	0.3	B
Pinal	*	*	*	*	*	*	*	*	*	*	*
Yavapai	4	0	0	1.3	C	2.3	D	*	*	*	*
Yuma	1	0	0	0.3	B	2.0	C	2.0	C	2.0	C

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

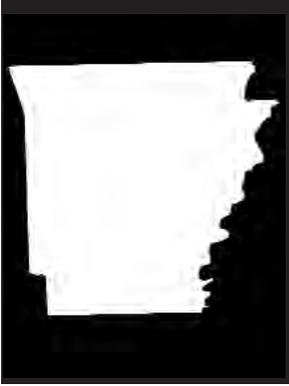
(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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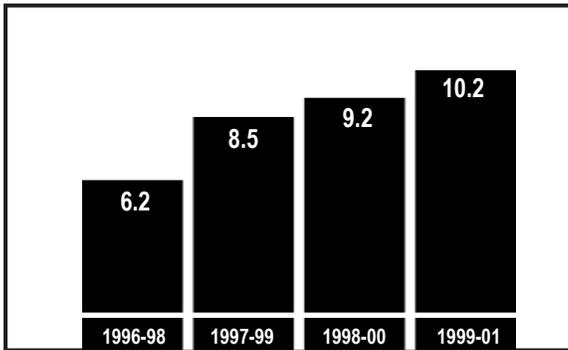
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Crittenden	50,866	13,216	5,058	876	2,438	1,604	511
Montgomery	9,245	1,793	1,749	120	499	352	145
Newton	8,608	1,679	1,276	118	454	315	119
Pulaski	361,474	76,038	41,425	5,044	18,833	12,475	4,087
TOTAL	430,193	92,726	49,508	6,158	22,223	14,746	4,863

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Crittenden County Air Quality Trends



Each bar marks the Weighted Averages for Crittenden County for each period.

Changes for 2003 Report

- Montgomery County's grade improved from a B to an A.
- Newton County's grade improved from a C to a B.

High Ozone Days

County	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Crittenden	29	1	0	10.2	F	9.2	F	8.5	F	6.2	F
Montgomery	0	0	0	0.0	A	0.3	B	0.3	B	0.3	B
Newton	2	0	0	0.7	B	1.0	C	1.0	C	0.3	B
Pulaski	25	1	0	8.8	F	8.2	F	3.0	D	1.3	C

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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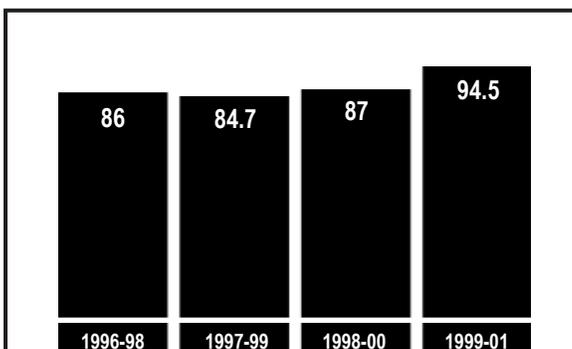
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Alameda	1,443,741	299,795	147,591	19,608	77,403	49,381	15,223
Amador	35,100	5,515	6,329	399	2,013	1,376	550
Butte	203,171	39,750	32,056	2,697	11,095	7,324	2,717
Calaveras	40,554	7,425	7,373	511	2,266	1,583	655
Colusa	18,804	4,827	2,135	328	919	595	200
Contra Costa	948,816	211,176	107,272	13,924	49,727	32,487	10,815
El Dorado	156,299	33,364	19,334	2,256	8,267	5,519	1,946
Fresno	799,407	214,255	79,209	14,180	38,632	24,612	7,729
Glenn	26,453	6,672	3,431	450	1,312	862	307
Imperial	142,361	36,894	14,305	2,474	6,945	4,414	1,383
Inyo	17,945	3,505	3,429	242	984	681	286
Kern	661,645	176,910	62,054	11,689	31,998	20,330	6,250
Kings	129,461	31,574	9,557	2,075	6,492	3,991	1,062
Lake	58,309	11,507	11,359	778	3,209	2,221	937
Los Angeles	9,519,338	2,263,330	926,673	147,539	486,627	308,088	93,587
Madera	123,109	30,096	13,596	2,017	6,178	3,986	1,307
Marin	247,289	42,090	33,432	2,775	14,115	9,463	3,370

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Fresno County Air Quality Trends



Each bar marks the Weighted Averages for Fresno County for each period.

Changes for 2003 Report

- San Luis Obispo County improved from an F to an A.
- Glenn County improved from a C to a B.
- The grades in Contra Costa County, Orange County, Santa Barbara County, Santa Clara County, and Solano County all improved from an F to a D.
- San Benito County improved from a D to a C.
- Sonoma County improved from a D to a B
- The grades in Colusa County and Inyo County fell from a B to a C.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Alameda	6	3	0	3.5	F	6	F	5.2	F	7	F
Amador	27	2	0	10	F	19.5	F	15.8	F	16	F
Butte	17	0	0	5.7	F	4	F	2	C	.3	B
Calaveras	38	2	0	13.7	F	22	F	17.7	F	17.8	F
Colusa	4	0	0	1.3	C	.7	B	0.7	B	1.7	C
Contra Costa	6	2	0	3	D	5.2	F	4.8	F	4.5	F
El Dorado	96	10	0	37	F	34.8	F	29.7	F	30.6	F
Fresno	202	53	1	94.5	F	87	F	84.7	F	86	F
Glenn	2	0	0	0.7	B	1	C	1	C	.3	B
Imperial	29	6	0	12.7	F	12.2	F	28	F	35.7	F
Inyo	3	0	0	1	C	.7	B	0.7	B	.3	B
Kern	219	40	0	93	F	94.7	F	85.8	F	100	F
Kings	87	7	0	32.5	F	37.2	F	28.2	F	48.6	F
Lake	0	0	0	0	A	0	A	0	A	0	A
Los Angeles	82	20	4	40	F	44.5	F	44.7	F	55	F
Madera	32	0	0	10.7	F	11	F	8	F	13.7	F
Marin	0	0	0	0	A	0	A	0	A	0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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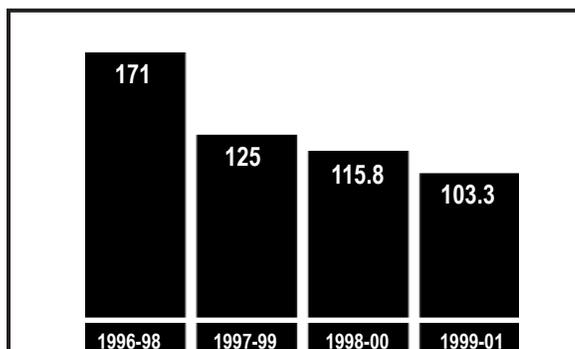
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Mariposa	17,130	2,963	2,940	205	969	664	263
Mendocino	86,265	17,837	11,709	1,219	4,607	3,097	1,131
Merced	210,554	60,546	20,004	4,019	9,808	6,248	1,959
Mono	12,853	2,460	976	163	700	447	127
Monterey	401,762	95,856	40,299	6,307	20,451	12,983	4,003
Napa	124,279	24,710	19,086	1,659	6,776	4,521	1,687
Nevada	92,033	16,986	16,049	1,177	5,113	3,527	1,423
Orange	2,846,289	652,061	280,763	42,494	147,632	93,937	28,795
Placer	248,399	54,409	32,560	3,636	13,082	8,671	3,082
Plumas	20,824	3,738	3,725	261	1,165	810	332
Riverside	1,545,387	394,983	195,964	25,919	77,032	49,931	17,278
Sacramento	1,223,499	283,266	135,875	18,669	63,132	40,639	13,188
San Benito	53,234	14,486	4,315	948	2,558	1,618	474
San Bernardino	1,709,434	465,138	146,459	30,528	82,110	51,903	15,430
San Diego	2,813,833	611,119	313,750	40,018	148,788	94,794	30,028
San Francisco	776,733	94,010	106,111	6,238	47,324	30,220	9,796
San Joaquin	563,598	145,367	59,799	9,654	27,722	17,821	5,774

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

San Bernardino County Air Quality Trends



Each bar marks the Weighted Averages for San Bernardino County for each period.

Changes for 2003 Report

- San Luis Obispo County improved from an F to an A.
- Glenn County improved from a C to a B.
- The grades in Contra Costa County, Orange County, Santa Barbara County, Santa Clara County, and Solano County all improved from an F to a D.
- San Benito County improved from a D to a C.
- Sonoma County improved from a D to a B
- The grades in Colusa County and Inyo County fell from a B to a C.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Mariposa	45	1	0	15.5	F	17.5	F	15.3	F	17	F
Mendocino	0	0	0	0	A	0	A	0	A	0	A
Merced	97	9	0	36.8	F	40.3	F	27.8	F	26.7	F
Mono	*	*	*	*	*	*	*	*	*	0	A
Monterey	0	0	0	0	A	0	A	0	A	0	A
Napa	1	0	0	0.3	B	0.7	B	0.7	B	.3	B
Nevada	77	4	0	27.7	F	24.8	F	20.7	F	20	F
Orange	8	1	0	3.2	D	4	F	3.5	F	6	F
Placer	68	5	0	25.2	F	24	F	19.2	F	19.3	F
Plumas	0	0	0	0	A	0	A	0	A	0	A
Riverside	160	44	4	78	F	78.3	F	94.3	F	142.6	F
Sacramento	67	7	1	26.5	F	29.8	F	24.3	F	36.6	F
San Benito	3	0	0	1	C	2.3	D	2.7	D	4.7	F
San Bernadino	179	58	22	103.3	F	115.8	F	125	F	171	F
San Diego	46	3	0	16.8	F	24.8	F	24.7	F	26.3	F
San Francisco	0	0	0	0	A	0	A	0	A	0	A
San Joaquin	13	2	0	5.3	F	7	F	7	F	8	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of California

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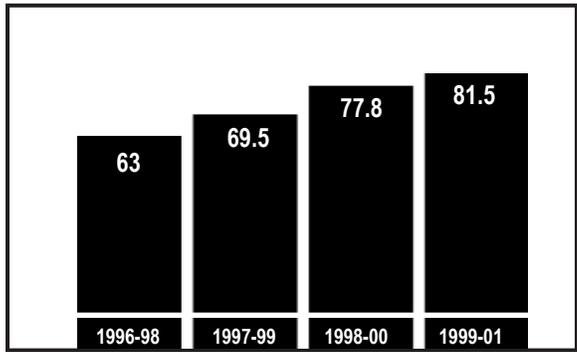
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
San Luis Obispo	246,681	43,444	35,685	2,954	13,843	9,076	3,210
San Mateo	707,161	136,483	88,085	8,964	38,910	25,311	8,488
Santa Barbara	399,347	83,457	50,765	5,502	21,408	13,772	4,601
Santa Clara	1,682,585	351,586	160,527	23,027	89,840	56,875	16,966
Santa Cruz	255,602	50,251	25,487	3,359	13,846	8,888	2,745
Shasta	163,256	34,530	24,861	2,360	8,676	5,843	2,221
Siskiyou	44,301	8,384	8,040	587	2,438	1,686	694
Solano	394,542	93,287	37,426	6,185	20,088	12,872	3,975
Sonoma	458,614	92,476	57,977	6,202	24,772	16,313	5,634
Stanislaus	446,997	116,074	46,697	7,699	21,925	14,077	4,534
Sutter	78,930	18,936	9,755	1,265	4,009	2,619	904
Tehama	56,039	12,527	8,923	850	2,930	1,969	762
Tulare	368,021	103,425	35,917	6,871	17,349	11,078	3,503
Tuolumne	54,501	8,986	10,067	625	3,122	2,136	862
Ventura	753,197	179,707	76,804	11,848	38,360	24,712	7,862
Yolo	168,660	35,405	15,782	2,349	8,944	5,596	1,625
TOTAL	33,596,342	7,727,578	3,562,317	507,706	1,737,611	1,111,568	351,680

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Tulare County Air Quality Trends



Each bar marks the Weighted Averages for Tulare County for each period.

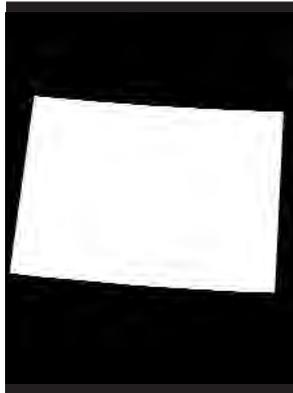
Changes for 2003 Report

- San Luis Obispo County improved from an F to an A.
- Glenn County improved from a C to a B.
- The grades in Contra Costa County, Orange County, Santa Barbara County, Santa Clara County, and Solano County all improved from an F to a D.
- San Benito County improved from a D to a C.
- Sonoma County improved from a D to a B
- The grades in Colusa County and Inyo County fell from a B to a C.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
San Luis Obispo	0	0	0	0	A	7.2	F	7.2	F	10.3	F
San Mateo	0	0	0	0	A	0	A	0	A	0	A
Santa Barbara	5	2	0	2.7	D	3.8	F	4.7	F	9.7	F
Santa Clara	8	0	0	2.7	D	4.7	F	4.3	F	5.3	F
Santa Cruz	0	0	0	0	A	0	A	0	A	0.7	B
Shasta	15	0	0	5	F	20.5	F	22.3	F	21.7	F
Siskiyou	0	0	0	0	A	0	A	0	A	0	A
Solano	7	1	0	2.8	D	5.5	F	5.5	F	4	F
Sonoma	2	0	0	0.7	B	2.5	D	2.8	D	2	C
Stanislaus	32	1	0	11.2	F	18	F	17.2	F	19	F
Sutter	12	0	0	4	F	5.3	F	3.7	F	5	F
Tehama	21	2	0	8	F	11.2	F	10.8	F	3.7	F
Tulare	216	19	0	81.5	F	77.8	F	69.5	F	63	F
Tuolumne	56	0	0	18.7	F	25.8	F	19.7	F	18	F
Ventura	70	6	0	26.3	F	29.3	F	35	F	52.2	F
Yolo	10	0	0	3.3	F	4.3	F	3.7	F	2.7	D

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
 (7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
 (8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).
 (9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.
 (10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.
 (11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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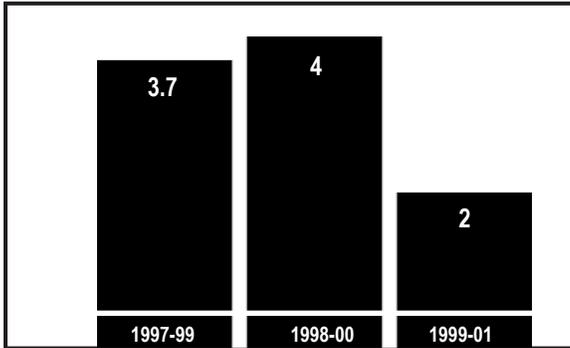
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Adams	363,857	88,074	28,382	5,749	21,301	11,498	3,216
Arapahoe	487,967	108,007	41,929	7,209	29,306	16,209	4,825
Boulder	291,288	55,776	22,670	3,696	18,439	9,954	2,751
Denver	554,636	103,557	62,426	6,734	35,199	19,465	6,013
Douglas	175,766	48,109	7,322	3,068	9,973	5,255	1,283
El Paso	516,929	119,440	44,787	7,879	30,639	16,791	4,924
Jefferson	527,056	109,855	50,826	7,382	32,196	18,123	5,670
La Plata	43,941	7,961	4,128	551	2,783	1,551	471
Larimer	251,494	49,483	24,037	3,304	15,670	8,628	2,575
Montezuma	23,830	5,362	3,299	363	1,396	832	307
Weld	180,936	42,623	16,240	2,822	10,614	5,825	1,726
TOTAL	3,417,700	738,247	306,046	48,756	207,515	114,130	33,762

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Jefferson County Air Quality Trends



Each bar marks the Weighted Averages for Jefferson County for each period.

Changes for 2003 Report

- Adams County's grade improved from a B to an A.
- The grades for Arapaho County, Boulder County, and Douglas County all improved from a C to a B.
- Denver County's grade improved from a C to an A.
- Jefferson County's grade improved from an F to a C.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Adams	0	0	0	0.0	A	0.7	B	0.7	B	0.7	B
Arapahoe	2	0	0	0.7	B	1.3	C	0.7	B	0.7	B
Boulder	1	0	0	0.3	B	2.0	C	2.0	C	1.7	C
Denver	0	0	0	0.0	A	1.3	C	1.3	C	1.3	C
Douglas	1	0	0	0.3	B	1.0	C	1.0	C	1.3	C
El Paso	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Jefferson	6	0	0	2.0	C	4.0	F	3.7	F	*	*
La Plata	*	*	*	*	*	*	*	*	*	*	*
Larimer	3	0	0	1.0	C	1.3	C	0.7	B	3.0	D
Montezuma	0	0	0	0.0	A	0.0	A	0.0	A	0.3	B
Weld	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Connecticut

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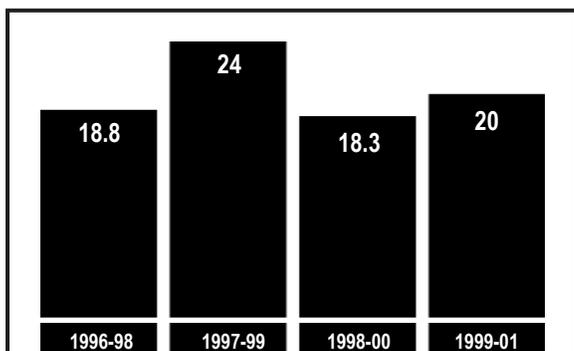
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Fairfield	882,567	193,494	117,163	12,510	52,302	30,909	10,868
Hartford	857,183	176,765	125,628	11,659	51,192	30,669	11,161
Litchfield	182,193	37,342	25,941	2,480	10,844	6,587	2,411
Middlesex	155,071	30,127	21,085	1,990	9,480	5,627	1,983
New Haven	824,008	169,317	119,292	11,153	49,434	29,351	10,553
New London	259,088	53,050	33,765	3,497	15,677	9,146	3,147
Tolland	136,364	26,375	13,869	1,743	8,540	4,772	1,472
TOTAL	3,296,474	686,470	456,743	45,031	197,469	117,060	41,594

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Fairfield County Air Quality Trends



Each bar marks the Weighted Averages for Fairfield County for each period.

Changes for 2003 Report

- There were no changes in grades or monitors from the 2002 report.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Fairfield	38	12	2	20.0	F	18.3	F	24.0	F	18.8	F
Hartford	19	2	0	7.3	F	5.2	F	7.3	F	3.5	F
Litchfield	18	0	0	6.0	F	8.7	F	10.3	F	7.7	F
Middlesex	25	6	1	12.0	F	9.7	F	12.0	F	7.8	F
New Haven	28	7	3	14.8	F	13.3	F	17.8	F	13.0	F
New London	18	2	1	7.7	F	6.5	F	12.0	F	10.2	F
Tolland	20	3	0	8.2	F	7.3	F	11.0	F	7.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Delaware

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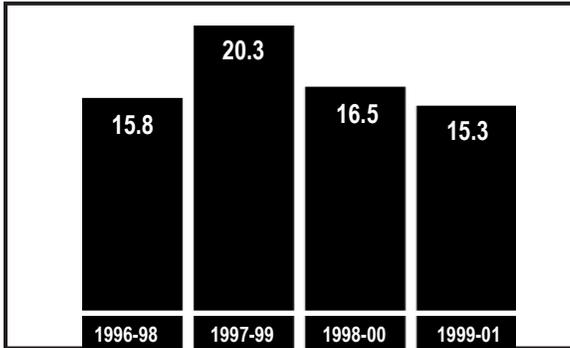
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Kent	126,697	28,904	14,801	1,910	7,044	4,252	1,410
New Castle	500,265	104,495	57,903	6,899	28,817	17,241	5,611
Sussex	156,638	29,219	29,022	1,952	8,767	5,972	2,416
TOTAL	783,600	162,618	101,726	10,761	44,628	27,466	9,437

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

New Castle County Air Quality Trends



Each bar marks the Weighted Averages for New Castle County for each period.

Changes for 2003 Report

- New Castle County had the worst record of unhealthy ozone days for this report period; in the 2002 report, it was tied with Sussex County.

High Ozone Days

County	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Kent	21	5	0	9.5	F	12.5	F	15.5	F	13.3	F
New Castle	37	6	0	15.3	F	16.5	F	20.3	F	15.8	F
Sussex	36	1	0	12.5	F	16.5	F	19.2	F	13.8	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of the District of Columbia

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At-Risk Groups

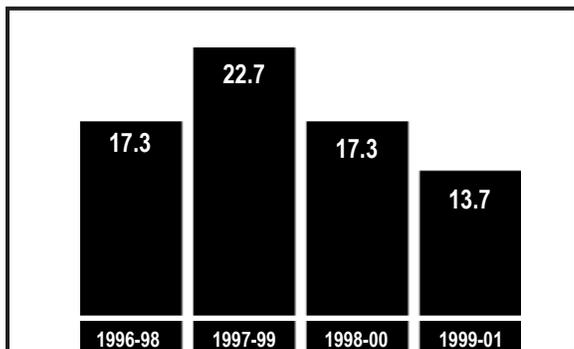
District of Columbia	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
District of Columbia	572,059	97,939	69,898	6,359	33,828	20,830	6,684
TOTAL	572,059	97,939	69,898	6,359	33,828	20,830	6,684

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

DISTRICT OF COLUMBIA

District of Columbia Air Quality Trends



Each bar marks the Weighted Averages for District of Columbia for each period.

Changes for 2003 Report

- There were no changes in grades or monitors from the 2002 report.

High Ozone Days

District of Columbia	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
District of Columbia	35	4	0	13.7	F	17.3	F	22.7	F	17.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange**: Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red**: Unhealthy (0.105-0.124 ppm ozone), and **Purple**: Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg**: The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Florida

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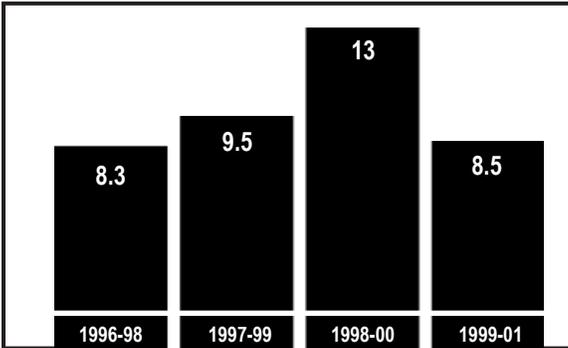
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Alachua	217,955	36,187	20,918	2,430	10,067	7,654	2,166
Baker	22,259	5,010	2,050	338	942	736	225
Bay	148,217	29,413	19,817	1,971	6,520	5,293	1,849
Brevard	476,230	86,252	94,681	5,790	21,250	18,314	7,570
Broward	1,623,018	322,315	261,109	21,176	71,153	58,860	21,947
Columbia	56,513	11,708	7,909	793	2,441	2,004	723
Dade	2,105,604	442,032	299,935	32,718	82,711	113,330	16,195
Duval	778,879	172,032	81,753	11,336	33,296	26,133	8,220
Escambia	294,410	57,446	39,169	3,831	13,000	10,464	3,585
Highlands	87,366	13,634	28,833	926	3,921	3,749	1,943
Hillsborough	998,948	212,554	119,673	13,999	43,166	34,396	11,393
Holmes	18,564	3,488	2,749	237	825	678	246
Lake	210,528	35,754	55,603	2,362	9,465	8,606	4,031
Lee	440,888	72,228	112,111	4,777	20,074	18,098	8,308
Leon	239,452	42,292	19,891	2,821	10,946	8,255	2,246
Manatee	264,002	45,938	65,647	3,022	11,834	10,608	4,825
Marion	258,916	45,557	63,488	3,065	11,522	10,343	4,708

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Escambia County Air Quality Trends



Each bar marks the Weighted Averages for Escambia County for each period.

Changes for 2003 Report

- Monitoring data are now being collected in Highlands County and Wakulla County.
- Monitoring data are no longer being collected in St. Johns County.
- Thirteen counties improved their grades:
 - Alachua County made the biggest jump from an F to a B.
 - The grades for Duval County, Miami-Dade County, Orange County, Pasco County, and Polk County improved from an F to a C.
 - The grades for Brevard County, Lee County, and Seminole County improved from a D to a C.
 - Osceola County's grade improved from a D to a B.
 - The grades for Holmes County, Palm Beach County and Volusia County improved from a C to a B.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Alachua	2	0	0	0.7	B	3.7	F	3.7	F	*	*
Baker	1	0	0	0.3	B	0.3	B	*	*	*	*
Bay	*	*	*	*	*	*	*	*	*	*	*
Brevard	5	0	0	1.7	C	2.2	D	2.5	D	1.8	C
Broward	4	0	0	1.3	C	1.3	C	1.0	C	1.0	C
Columbia	*	*	*	*	*	*	*	*	*	*	*
Dade	*	*	*	*	*	*	*	*	*	4.0	F
Duval	4	0	0	1.3	C	5.0	F	6.0	F	5.3	F
Escambia	24	1	0	8.5	F	13.0	F	9.5	F	8.3	F
Highlands	*	*	*	*	*	*	*	*	*	*	*
Hillsborough	16	1	0	5.8	F	8.8	F	8.8	F	7.2	F
Holmes	2	0	0	0.7	B	2.0	C	*	*	*	*
Lake	*	*	*	*	*	*	*	*	*	*	*
Lee	4	0	0	1.3	C	2.7	D	2.3	D	1.3	C
Leon	2	0	0	0.7	B	0.7	B	0.7	B	0.0	A
Manatee	9	1	0	3.5	F	4.3	F	3.0	D	2.2	D
Marion	3	0	0	1.0	C	1.7	C	*	*	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
 (7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
 (8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).
 (9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.
 (10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.
 (11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Florida

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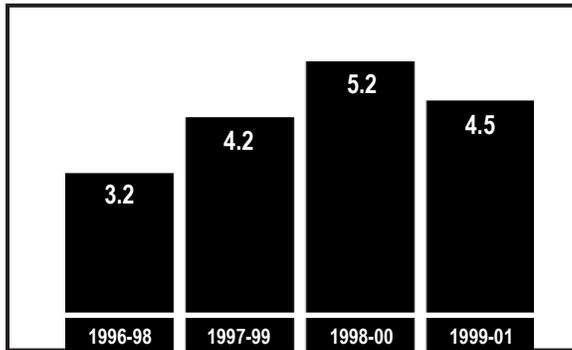
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Miami-Dade	2,253,362	464,377	300,552	30,924	97,776	78,927	27,288
Orange	896,344	190,288	89,959	12,517	38,815	30,087	9,101
Osceola	172,493	38,375	19,709	2,556	7,318	5,818	1,910
Palm Beach	1,131,184	201,715	262,076	13,297	50,407	44,389	19,460
Pasco	344,765	58,218	92,403	3,844	15,494	14,102	6,631
Pinellas	921,482	147,814	207,563	9,818	42,340	37,080	15,965
Polk	483,924	98,223	88,738	6,537	20,920	17,806	7,151
Saint Johns	119,685	23,394	20,428	1,483	5,233	4,202	1,575
St. Lucie	192,695	36,312	43,753	2,410	8,460	7,477	3,293
Santa Rosa	117,743	25,681	12,972	1,729	5,039	4,026	1,329
Sarasota	325,957	43,685	102,583	2,921	15,313	14,401	7,203
Seminole	365,196	76,841	38,853	5,121	15,878	12,569	4,036
Volusia	443,343	73,801	97,811	4,969	20,127	17,599	7,549
Wakulla	22,863	4,764	2,350	324	993	787	253
TOTAL	16,032,785	3,117,328	2,675,086	210,042	697,244	626,789	212,923

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Sarasota County Air Quality Trends



Each bar marks the Weighted Averages for Sarasota County for each period.

Changes for 2003 Report

- Monitoring data are now being collected in Highlands County and Wakulla County.
- Monitoring data are no longer being collected in St. Johns County.
- Thirteen counties improved their grades:
 - Alachua County made the biggest jump from an F to a B.
 - The grades for Duval County, Miami-Dade County, Orange County, Pasco County, and Polk County improved from an F to a C.
 - The grades for Brevard County, Lee County, and Seminole County improved from a D to a C.
 - Osceola County's grade improved from a D to a B.
 - The grades for Holmes County, Palm Beach County and Volusia County improved from a C to a B.

High Ozone Days

County	Orange	1999-2001			1998-2000		1997-1999		1996-1998		
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Miami-Dade	6	0	0	2.0	C	4.3	F	5.3	F	*	*
Orange	6	0	0	2.0	C	5.5	F	5.8	F	5.2	F
Osceola	2	0	0	0.7	B	3.0	D	3.3	F	3.3	F
Palm Beach	2	0	0	0.7	B	1.0	C	1.0	C	0.7	B
Pasco	6	0	0	2.0	C	3.3	F	2.7	D	1.7	C
Pinellas	11	0	0	3.7	F	5.5	F	4.2	F	2.5	D
Polk	5	0	0	1.7	C	3.8	F	4.5	F	4.2	F
Saint Johns	*	*	*	*	*	*	*	*	*	0.3	B
St. Lucie	2	0	0	0.7	B	0.3	B	0.3	B	0.3	B
Santa Rosa	*	*	*	*	*	*	*	*	*	*	*
Sarasota	12	1	0	4.5	F	5.2	F	4.2	F	3.2	D
Seminole	3	0	0	1.0	C	2.3	D	2.0	C	1.7	C
Volusia	1	0	0	0.3	B	1.3	C	1.0	C	1.0	C
Wakulla	*	*	*	*	*	*	*	*	*	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
 (7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
 (8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).
 (9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.
 (10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.
 (11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Georgia

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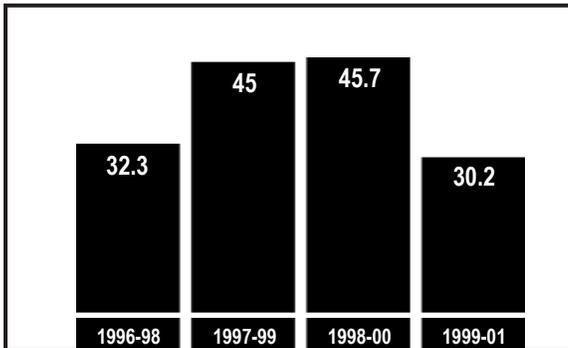
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bibb	153,887	34,494	19,620	2,261	8,131	5,266	1,810
Chatham	232,048	48,736	29,770	3,212	12,516	8,062	2,738
Cherokee	141,903	34,430	9,353	2,218	7,341	4,515	1,224
Cobb	607,751	133,091	42,036	8,760	32,399	19,843	5,349
Coweta	89,215	21,853	7,571	1,418	4,582	2,874	855
Dawson	15,999	3,423	1,491	222	864	552	171
DeKalb	665,865	138,468	53,224	9,068	36,161	22,064	6,054
Douglas	92,174	21,249	6,958	1,407	4,812	2,994	852
Fannin	19,798	3,406	3,766	229	1,125	779	319
Fayette	91,263	21,388	8,104	1,468	4,668	3,048	983
Fulton	816,006	169,066	68,990	11,021	44,434	27,362	7,741
Glynn	67,568	14,021	9,761	946	3,630	2,413	886
Gwinnett	588,448	139,952	31,599	9,179	30,473	18,361	4,577
Henry	119,341	29,621	8,824	1,928	6,090	3,769	1,061
Murray	36,506	8,629	2,922	564	1,896	1,179	340
Muscogee	186,291	41,558	21,817	2,765	9,806	6,229	2,034
Paulding	81,678	21,777	4,824	1,387	4,080	2,441	613
Richmond	199,775	44,739	21,645	2,965	10,522	6,659	2,117
Rockdale	70,111	15,762	6,456	1,067	3,663	2,335	725
Sumter	33,200	7,773	4,095	511	1,724	1,110	377
TOTAL	4,308,827	953,436	362,826	62,594	228,917	141,856	40,827

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Fulton County Air Quality Trends



Each bar marks the Weighted Averages for Fulton County for each period.

Changes for 2003 Report

- Four counties received grades in this report after not having sufficient monitoring data to be graded in 2002:
 - Cherokee County received a C.
 - Cobb County, Coweta County and Henry County all received an F.
- Glynn County's grade improved from a C to a B.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Bibb	32	7	1	14.8	F	19.7	F	17.5	F	*	*
Chatham	4	0	0	1.3	C	1.3	C	1.0	C	0.0	A
Cherokee	4	0	0	1.3	C	*	*	*	*	*	*
Cobb	25	5	0	10.8	F	*	*	*	*	*	*
Coweta	41	7	0	17.2	F	*	*	*	*	*	*
Dawson	14	0	0	4.7	F	8.0	F	*	*	*	*
DeKalb	47	12	3	23.7	F	31.5	F	26.7	F	20.2	F
Douglas	51	5	0	19.5	F	31.3	F	29.5	F	*	*
Fannin	*	*	*	*	*	*	*	1.7	C	1.3	C
Fayette	31	9	2	16.2	F	27.8	F	*	*	*	*
Fulton	60	15	4	30.2	F	45.7	F	45.0	F	32.3	F
Glynn	2	0	0	0.7	B	1.0	C	1.3	C	1.0	C
Gwinnett	23	6	1	11.3	F	20.5	F	18.0	F	15.2	F
Henry	44	11	5	23.5	F	*	*	*	*	*	*
Murray	*	*	*	*	*	*	*	*	*	4.0	F
Muscogee	20	1	0	7.2	F	9.8	F	8.0	F	13.8	F
Paulding	30	3	0	11.5	F	19.3	F	19.0	F	7.3	F
Richmond	17	2	0	6.7	F	10.0	F	9.3	F	29.3	F
Rockdale	42	15	3	23.5	F	35.7	F	41.5	F	*	*
Sumter	11	0	0	3.7	F	3.3	F	*	*	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

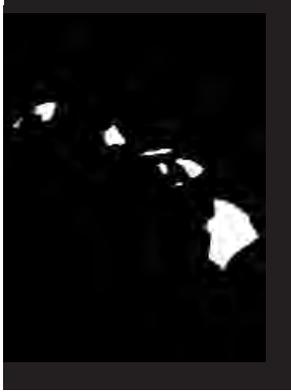
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(8) **Orange**: Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red**: Unhealthy (0.105-0.124 ppm ozone), and **Purple**: Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg**: The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Hawaii

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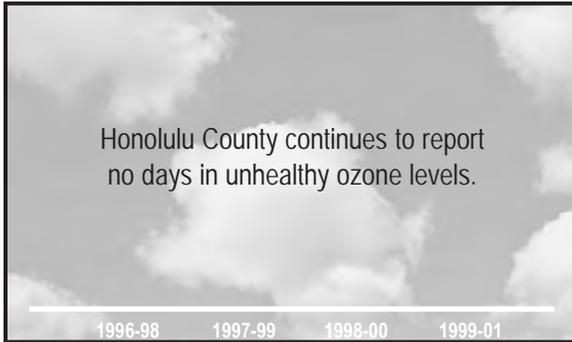
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Hawaii	148,677	31,731	20,119	2,149	8,079	5,271	1,915
Honolulu	876,156	174,848	117,737	11,544	49,104	31,080	10,722
TOTAL	1,024,833	206,579	137,856	13,693	57,183	36,351	12,637

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Honolulu County Air Quality Trends



Changes for 2003 Report

- There were no changes from the 2002 report.
- Honolulu County continues to report no days in unhealthy ozone ranges.
- Insufficient monitoring data are available from Hawaii County's monitors to grade it.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Hawaii	*	*	*	*	*	*	*	*	*	*	*
Honolulu	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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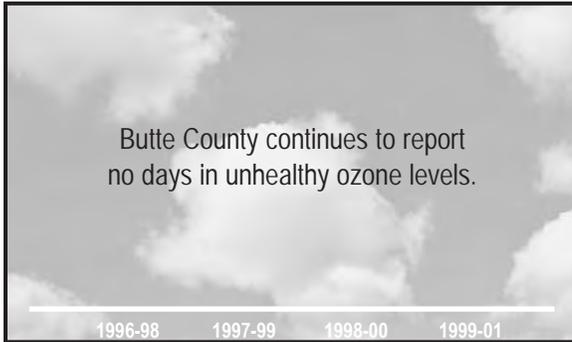
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Ada	300,904	68,466	27,301	4,538	17,482	9,848	2,936
Butte	2,899	687	433	47	164	101	39
Elmore	29,130	6,879	2,079	450	1,690	896	227
TOTAL	332,933	76,032	29,813	5,034	19,336	10,845	3,202

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Butte County Air Quality Trends



Changes for 2003 Report

- Monitoring data are now available for Ada County and Elmore County, though not enough to grade.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Ada	*	*	*	*	*	*	*	*	*	*	*
Butte	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Elmore	*	*	*	*	*	*	*	*	*	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.


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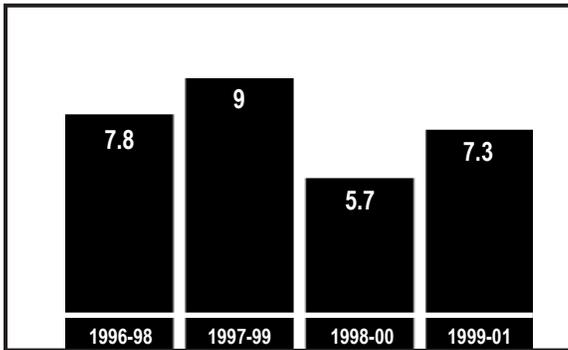
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Adams	68,277	13,937	12,025	940	3,962	2,484	981
Champaign	179,669	31,574	17,470	2,091	11,598	6,213	1,755
Clark	17,008	3,466	3,061	234	983	623	250
Cook	5,376,741	1,175,298	630,265	77,299	317,906	182,421	59,663
DuPage	904,161	202,542	88,794	13,373	53,105	30,305	9,464
Effingham	34,264	8,051	4,767	541	1,922	1,156	419
Hamilton	8,621	1,663	1,655	114	501	324	134
Jersey	21,668	4,403	3,114	305	1,268	765	277
Kane	404,119	102,856	33,981	6,763	22,794	12,679	3,748
Lake	644,356	160,624	54,989	10,472	36,705	20,593	6,157
McHenry	260,077	66,359	20,913	4,341	14,683	8,184	2,402
McLean	150,433	29,636	14,621	1,952	9,365	5,103	1,486
Macon	114,706	23,388	17,481	1,558	6,747	4,144	1,543
Macoupin	49,019	9,697	8,576	667	2,855	1,792	706
Madison	258,941	53,017	36,923	3,563	15,291	9,175	3,291
Peoria	183,433	38,457	25,981	2,550	10,790	6,486	2,328
Randolph	33,893	6,086	5,292	415	2,071	1,246	455
Rock Island	149,374	29,244	22,564	1,964	8,899	5,427	1,998
St. Clair	256,082	58,592	33,709	3,922	14,625	8,660	3,033
Sangamon	188,951	38,883	25,524	2,607	11,157	6,694	2,367
Will	502,266	127,572	41,610	8,334	28,443	15,812	4,652
Winnebago	278,418	61,537	35,450	4,066	16,190	9,596	3,319
TOTAL	10,084,477	2,246,882	1,138,765	148,073	591,858	339,882	110,424

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Cook County Air Quality Trends



Each bar marks the Weighted Averages for Cook County for each period.

Changes for 2003 Report

- Monitoring data are now available for McLean County, though not enough to grade.
- Adams County's grade improved from a C to a B.
- The grades for Champaign County, Effingham County and St. Clair County improved from a D to a C.
- DuPage County's grade improved from a B to an A.
- Cook County replaced Madison County as having the worst record of high ozone days.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Adams	2	0	0	0.7	B	1.0	C	1.0	C	1.7	C
Champaign	6	0	0	2.0	C	2.7	D	2.7	D	2.7	D
Clark	*	*	*	*	*	*	*	*	*	*	*
Cook	22	0	0	7.3	F	5.7	F	9.0	F	7.8	F
DuPage	0	0	0	0.0	A	0.3	B	0.3	B	0.3	B
Effingham	6	0	0	2.0	C	2.3	D	3.0	D	1.7	C
Hamilton	5	0	0	1.7	C	2.0	C	1.3	C	*	*
Jersey	16	0	0	5.3	F	6.3	F	6.7	F	3.7	F
Kane	2	0	0	0.7	B	0.3	B	0.3	B	0.0	A
Lake	11	0	0	3.7	F	4.5	F	6.3	F	5.0	F
McHenry	9	0	0	3.0	D	2.3	D	3.3	F	2.3	D
McLean	*	*	*	*	*	*	*	*	*	*	*
Macon	5	0	0	1.7	C	1.7	C	1.7	C	1.7	C
Macoupin	8	0	0	2.7	D	2.7	D	2.0	C	2.7	D
Madison	16	1	0	5.8	F	6.8	F	8.7	F	9.2	F
Peoria	3	0	0	1.0	C	1.3	C	1.3	C	0.3	B
Randolph	3	0	0	1.0	C	1.3	C	1.0	C	0.7	B
Rock Island	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
St. Clair	6	0	0	2.0	C	2.3	D	2.0	C	1.0	C
Sangamon	4	0	0	1.3	C	1.0	C	0.7	B	0.7	B
Will	7	0	0	2.3	D	2.7	D	2.7	D	1.3	C
Winnebago	1	0	0	0.3	B	0.3	B	0.3	B	0.3	B

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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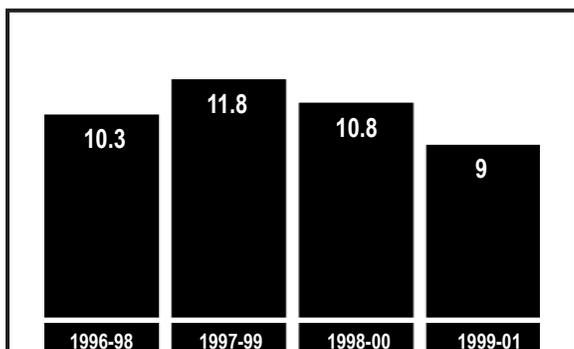
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Allen	331,849	77,122	37,760	5,085	18,206	11,078	3,658
Boone	46,107	10,890	5,450	722	2,516	1,552	532
Carroll	20,165	4,403	2,806	293	1,134	707	256
Clark	96,472	19,490	11,877	1,293	5,557	3,411	1,154
Delaware	118,769	21,689	15,989	1,452	7,022	4,283	1,456
Elkhart	182,791	44,538	19,841	2,920	9,858	5,976	1,943
Floyd	70,823	15,138	8,736	1,011	3,996	2,460	842
Gibson	32,500	6,571	5,046	446	1,865	1,168	437
Greene	33,157	6,753	5,060	453	1,905	1,196	446
Hamilton	182,740	48,289	13,659	3,111	9,561	5,679	1,631
Hancock	55,391	12,116	6,226	813	3,099	1,913	644
Hendricks	104,093	24,204	10,138	1,613	5,684	3,442	1,085
Huntington	38,075	8,185	5,357	550	2,141	1,325	474
Jackson	41,335	8,766	5,503	583	2,341	1,440	502
Johnson	115,209	26,131	12,638	1,733	6,366	3,871	1,262

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Hancock County Air Quality Trends



Each bar marks the Weighted Averages for Hancock County for each period.

Changes for 2003 Report

- Monitoring data are now available for Carroll County and Delaware County,
- Gibson County has sufficient monitoring data now to receive a grade of B after having no grade in the 2002 report.
- Elkhart County's grade has improved from a B to an A.
- Vigo County's grade improved from a D to a C.
- Hancock County and Lake County replace Clark County as having the worst record of high ozone days in the state.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Allen	18	0	0	6.0	F	8.0	F	9.0	F	8.3	F
Boone	*	*	*	*	*	*	*	*	*	*	*
Carroll	*	*	*	*	*	*	*	*	*	*	*
Clark	19	0	0	6.3	F	13.0	F	14.8	F	11.8	F
Delaware	*	*	*	*	*	*	*	*	*	*	*
Elkhart	0	0	0	0.0	A	0.7	B	2.3	D	5.0	F
Floyd	9	1	0	3.5	F	8.5	F	9.8	F	12.0	F
Gibson	2	0	0	0.7	B	*	*	*	*	*	*
Greene	*	*	*	*	*	*	*	*	*	*	*
Hamilton	26	0	0	8.7	F	12.8	F	14.3	F	11.8	F
Hancock	27	0	0	9.0	F	10.8	F	11.8	F	10.3	F
Hendricks	*	*	*	*	*	*	*	*	*	*	*
Huntington	*	*	*	*	*	*	*	*	*	*	*
Jackson	*	*	*	*	*	*	*	*	*	*	*
Johnson	15	0	0	5.0	F	8.3	F	8.0	F	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange**: Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red**: Unhealthy (0.105-0.124 ppm ozone), and **Purple**: Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg**: The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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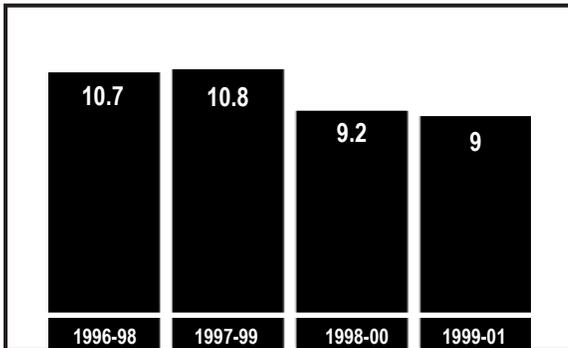
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Lake	484,564	107,338	63,234	7,178	26,998	16,676	5,846
LaPorte	110,106	22,263	14,912	1,493	6,327	3,916	1,380
Madison	133,358	26,454	19,898	1,757	7,746	4,836	1,771
Marion	860,454	187,144	95,534	12,263	48,339	29,032	9,222
Morgan	66,689	15,035	7,100	1,004	3,688	2,254	737
Perry	18,899	3,475	2,818	239	1,110	690	250
Porter	146,798	30,792	15,972	2,090	8,286	5,072	1,663
Posey	27,061	6,086	3,363	409	1,498	928	324
St. Joseph	265,559	57,046	36,101	3,776	14,986	9,192	3,207
Shelby	43,445	9,552	5,279	641	2,422	1,485	504
Vanderburgh	171,922	33,005	26,328	2,200	10,057	6,233	2,267
Vigo	105,848	20,024	15,048	1,339	6,200	3,800	1,327
Warrick	52,383	11,546	5,665	778	2,916	1,796	598
TOTAL	3,956,562	864,045	477,338	57,245	221,821	135,411	45,417

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Lake County Air Quality Trends



Each bar marks the Weighted Averages for Lake County for each period.

Changes for 2003 Report

- Monitoring data are now available for Carroll County and Delaware County,
- Gibson County has sufficient monitoring data now to receive a grade of B after having no grade in the 2002 report.
- Elkhart County's grade has improved from a B to an A.
- Vigo County's grade improved from a D to a C.
- Hancock County and Lake County replace Clark County as having the worst record of high ozone days in the state.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Lake	27	0	0	9.0	F	9.2	F	10.8	F	10.7	F
LaPorte	18	1	0	6.5	F	8.3	F	11.3	F	12.3	F
Madison	20	0	0	6.7	F	10.0	F	10.7	F	*	*
Marion	22	0	0	7.3	F	10.0	F	12.5	F	10.5	F
Morgan	18	0	0	6.0	F	8.7	F	9.3	F	12.2	F
Perry	23	0	0	7.7	F	11.5	F	*	*	*	*
Porter	18	2	0	7.0	F	9.5	F	11.5	F	*	*
Posey	19	1	0	6.8	F	10.7	F	10.3	F	9.8	F
St. Joseph	19	0	0	6.3	F	7.3	F	8.8	F	5.2	F
Shelby	*	*	*	*	*	*	*	*	*	8.8	F
Vanderburgh	19	0	0	6.3	F	9.8	F	13.3	F	11.7	F
Vigo	6	0	0	2.0	C	2.3	D	3.0	D	8.8	F
Warrick	13	0	0	4.3	F	9.3	F	14.2	F	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
 (7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
 (8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).
 (9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.
 (10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.
 (11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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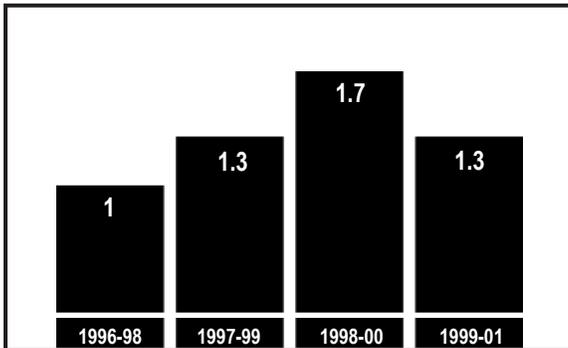
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bremer	23,325	4,496	3,733	311	1,190	851	323
Clinton	50,149	10,506	7,934	710	2,510	1,795	683
Harrison	15,666	3,349	2,766	227	775	563	225
Linn	191,701	40,590	23,465	2,678	9,848	6,638	2,227
Palo Alto	10,147	1,905	2,163	135	513	382	164
Polk	374,601	81,110	41,752	5,325	19,251	12,748	4,103
Scott	158,668	34,674	18,677	2,323	7,972	5,432	1,824
Story	79,981	12,527	7,870	843	4,647	2,814	780
Van Buren	7,809	1,579	1,491	107	388	292	121
Warren	40,671	9,024	4,815	607	2,023	1,387	470
TOTAL	952,718	199,760	114,666	13,268	49,118	32,902	10,920

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Scott County Air Quality Trends



Each bar marks the Weighted Averages for Scott County for each period.

Changes for 2003 Report

- Harrison County's grade improved from a B to an A.
- Clinton County now has sufficient monitoring data to receive a grade of C and ties Scott County as having the worst record high ozone days in the state.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Bremer	*	*	*	*	*	*	*	*	*	*	*
Clinton	4	0	0	1.3	C	*	*	*	*	*	*
Harrison	0	0	0	0.0	A	0.3	B	0.3	B	*	*
Linn	3	0	0	1.0	C	1.0	C	0.7	B	0.0	A
Palo Alto	0	0	0	0.0	A	0.0	A	0.0	A	*	*
Polk	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Scott	4	0	0	1.3	C	1.7	C	1.3	C	1.0	C
Story	0	0	0	0.0	A	0.0	A	0.0	A	*	*
Van Buren	1	0	0	0.3	B	0.3	B	0.3	B	0.0	A
Warren	1	0	0	0.3	B	0.3	B	0.0	A	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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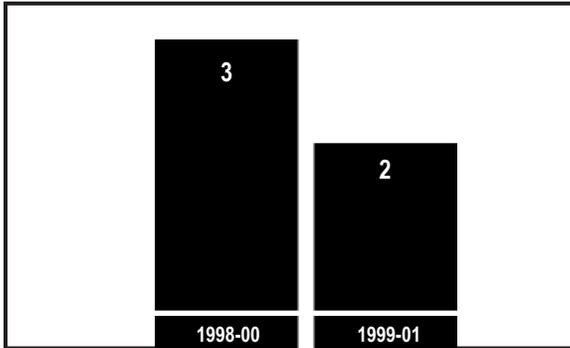
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Linn	9,570	1,942	1,750	133	580	356	146
Sedgwick	452,869	107,065	51,574	7,053	26,762	14,964	4,920
Sumner	25,946	5,980	4,014	409	1,509	894	343
Trego	3,319	572	796	44	203	129	59
Wyandotte	157,882	37,709	18,520	2,486	9,294	5,192	1,722
TOTAL	649,586	153,268	76,654	10,124	38,348	21,535	7,190

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Linn County Air Quality Trends



Each bar marks the Weighted Averages for Linn County for each period.

Changes for 2003 Report

- Linn County's grade has improved from a D to a C.
- Wyandotte County's grade has improved from an F to a C.
- Sumner County now has sufficient data to receive a grade of C after having no grade in the 2002 report.
- Linn County, Sedgwick County, and Sumner County replace Wyandotte as the worst record of high ozone days in the state.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Linn	6	0	0	2.0	C	3.0	D	*	*	*	*
Sedgwick	6	0	0	2.0	C	2.0	C	2.7	D	2.7	D
Sumner	6	0	0	2.0	C	*	*	*	*	*	*
Trego	*	*	*	*	*	*	*	*	*	*	*
Wyandotte	4	0	0	1.3	C	3.5	F	3.2	D	4.5	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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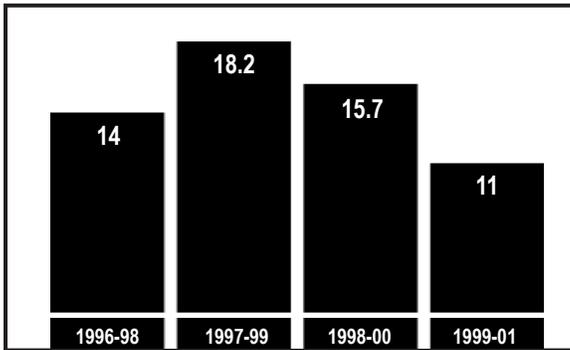
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bell	30,060	5,993	4,129	405	1,901	1,076	383
Boone	85,991	20,778	6,941	1,363	5,022	2,754	799
Boyd	49,752	8,788	7,758	599	3,272	1,867	695
Bullitt	61,236	13,866	4,792	920	3,663	2,019	588
Campbell	88,616	18,882	11,165	1,256	5,460	3,052	1,033
Carter	26,889	5,446	3,374	364	1,690	950	324
Christian	72,265	17,894	7,053	1,131	4,207	2,284	671
Daviess	91,545	19,344	12,643	1,306	5,675	3,209	1,147
Edmonson	11,644	2,224	1,675	152	747	425	154
Fayette	260,512	46,804	26,174	3,071	16,739	9,156	2,709
Graves	37,028	7,487	5,958	501	2,354	1,347	513
Greenup	36,891	7,114	5,389	481	2,372	1,354	498
Hancock	8,392	1,893	921	124	512	288	96
Hardin	94,174	21,255	9,094	1,436	5,598	3,085	943
Henderson	44,829	9,021	5,893	611	2,818	1,590	555
Jefferson	693,604	140,995	93,982	9,305	43,749	24,628	8,611
Jessamine	39,041	8,655	3,717	570	2,359	1,299	394
Kenton	151,464	33,492	16,769	2,206	9,206	5,114	1,648

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Jefferson County Air Quality Trends



Each bar marks the Weighted Averages for Jefferson County for each period.

Changes for 2003 Report

- Monitoring data are now available for Muhlenberg County, though not enough to grade.
- Monitoring data are no longer available from Lawrence County.
- Bell County's grade improved from an F to a D.
- Jessamine County's grade improved from a D to a C.
- Pike County's grade improved from a C to a B.
- Scott County's grade improved from a D to a B.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Bell	9	0	0	3.0	D	4.0	F	1.7	C	1.7	C
Boone	11	0	0	3.7	F	4.3	F	4.0	F	2.3	D
Boyd	13	0	0	4.3	F	4.0	F	5.2	F	2.8	D
Bullitt	15	0	0	5.0	F	8.7	F	9.5	F	7.2	F
Campbell	19	0	0	6.3	F	7.0	F	6.3	F	5.5	F
Carter	13	0	0	4.3	F	8.3	F	*	*	*	*
Christian	13	2	0	5.3	F	7.0	F	7.0	F	2.3	D
Daviess	11	0	0	3.7	F	5.2	F	7.2	F	5.2	F
Edmonson	24	1	0	8.5	F	11.8	F	11.8	F	6.0	F
Fayette	13	0	0	4.3	F	5.5	F	6.5	F	3.8	F
Graves	12	2	0	5.0	F	6.7	F	6.7	F	2.7	D
Greenup	17	1	0	6.2	F	9.3	F	9.7	F	6.2	F
Hancock	11	0	0	3.7	F	7.5	F	8.8	F	7.2	F
Hardin	15	0	0	5.0	F	4.7	F	4.0	F	1.0	C
Henderson	13	0	0	4.3	F	5.0	F	5.7	F	4.7	F
Jefferson	30	2	0	11.0	F	15.7	F	18.2	F	14.0	F
Jessamine	4	0	0	1.3	C	3.0	D	3.3	F	2.7	D
Kenton	11	0	0	3.7	F	6.5	F	6.2	F	6.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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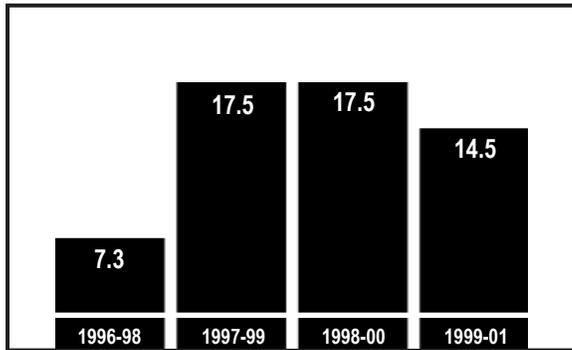
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Lawrence	15,387	3,367	1,894	261	585	830	111
Livingston	9,804	1,803	1,463	121	642	367	136
McCracken	65,514	12,671	10,445	847	4,227	2,417	914
McLean	9,938	1,985	1,438	133	633	361	132
Muhlenberg	31,839	5,876	4,926	398	2,069	1,179	438
Oldham	46,178	10,468	3,247	699	2,760	1,525	439
Perry	29,390	5,784	3,288	396	1,845	1,033	339
Pike	68,736	13,262	8,448	901	4,368	2,457	834
Pulaski	56,217	10,790	8,486	728	3,618	2,062	762
Scott	33,061	7,355	2,936	480	1,991	1,089	318
Simpson	16,405	3,622	2,153	238	1,009	569	200
Trigg	12,597	2,430	2,090	160	823	475	185
Warren	92,522	17,666	9,677	1,183	5,830	3,207	981
TOTAL	2,371,521	487,010	287,918	32,348	147,745	83,066	27,546

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Oldham County Air Quality Trends



Each bar marks the Weighted Averages for Oldham County for each period.

Changes for 2003 Report

- Monitoring data are now available for Muhlenberg County, though not enough to grade.
- Monitoring data are no longer available from Lawrence County.
- Bell County's grade improved from an F to a D.
- Jessamine County's grade improved from a D to a C.
- Pike County's grade improved from a C to a B.
- Scott County's grade improved from a D to a B.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Lawrence	*	*	*	*	*	*	*	*	*	0.7	B
Livingston	24	3	0	9.5	F	13.8	F	16.5	F	10.0	F
McCracken	13	1	0	4.8	F	6.2	F	6.3	F	3.0	D
McLean	16	2	0	6.3	F	7.3	F	8.0	F	2.7	D
Muhlenberg	*	*	*	*	*	*	*	*	*	*	*
Oldham	39	3	0	14.5	F	17.5	F	17.5	F	7.3	F
Perry	1	0	0	0.3	B	0.3	B	0.3	B	0.0	A
Pike	2	0	0	0.7	B	2.0	C	2.0	C	1.3	C
Pulaski	17	0	0	5.7	F	6.7	F	5.3	F	1.0	C
Scott	2	0	0	0.7	B	2.7	D	2.7	D	2.3	D
Simpson	23	0	0	7.7	F	10.5	F	10.7	F	6.0	F
Trigg	11	0	0	3.7	F	4.7	F	5.0	F	2.7	D
Warren	*	*	*	*	*	*	*	*	*	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Louisiana

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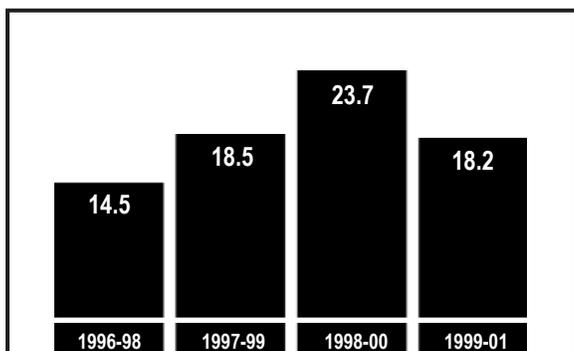
At-Risk Groups

Parish	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Ascension	76,627	19,149	5,892	1,275	2,822	2,389	680
Beauregard	32,986	7,473	3,925	501	1,275	1,121	382
Bossier	98,310	22,870	10,259	1,523	3,754	3,239	1,032
Caddo	252,161	55,392	34,444	3,733	9,873	8,693	3,094
Calcasieu	183,577	41,081	21,759	2,780	7,096	6,184	2,076
East Baton Rouge	412,852	89,006	40,932	5,976	16,125	13,770	4,210
Grant	18,698	4,377	2,375	292	716	633	223
Iberville	33,320	7,138	3,580	483	1,304	1,124	358
Jefferson	455,466	94,694	54,315	6,374	18,107	15,835	5,311
Lafayette	190,503	42,980	18,122	2,882	7,316	6,229	1,880
Lafourche	89,974	20,123	10,143	1,358	3,476	3,010	984

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

East Baton Rouge Parish Air Quality Trends



Each bar marks the Weighted Averages for East Baton Rouge Parish for each period.

Changes for 2003 Report

- Orleans Parish's grade has improved from a B to an A.
- St. Bernard Parish's grade has improved from an F to a D.

High Ozone Days

Parish	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Ascension	12	1	0	4.5	F	7.5	F	6.3	F	6.0	F
Beauregard	4	0	0	1.3	C	2.0	C	1.7	C	1.3	C
Bossier	17	1	0	6.2	F	7.8	F	5.3	F	3.3	F
Caddo	11	0	0	3.7	F	6.0	F	5.3	F	3.7	F
Calcasieu	17	0	0	5.7	F	8.7	F	8.2	F	6.2	F
E. Baton Rouge	44	7	0	18.2	F	23.7	F	18.5	F	14.5	F
Grant	4	0	0	1.3	C	1.3	C	0.7	B	0.3	B
Iberville	41	2	0	14.7	F	18.5	F	18.0	F	17.0	F
Jefferson	24	0	0	8.0	F	9.3	F	6.3	F	4.0	F
Lafayette	10	2	0	4.3	F	5.7	F	3.0	D	2.7	D
Lafourche	13	0	0	4.3	F	5.5	F	4.5	F	2.8	D

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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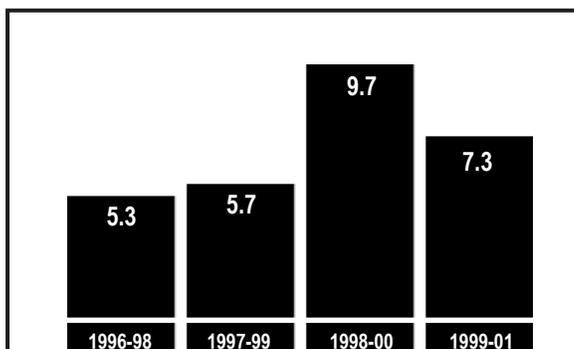
At-Risk Groups

Parish	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Livingston	91,814	22,195	7,812	1,497	3,419	2,928	874
Orleans	484,674	107,398	56,653	7,156	18,888	16,341	5,381
Ouachita	147,250	33,954	17,432	2,275	5,646	4,889	1,628
Pointe Coupee	22,763	4,991	3,160	343	886	787	286
St. Bernard	67,229	13,877	9,262	938	2,687	2,365	838
St. Charles	48,072	11,857	4,308	806	1,772	1,521	464
St. James	21,216	5,057	2,362	346	796	693	230
St. John the Baptist	43,044	11,029	3,356	743	1,562	1,335	390
St. Mary	53,500	13,003	5,899	878	2,001	1,747	581
West Baton Rouge	21,601	4,927	2,097	335	823	709	220
TOTAL	2,845,637	632,571	318,087	42,493	110,345	95,541	31,121

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Livingston Parish Air Quality Trends



Each bar marks the Weighted Averages for Livingston Parish for each period.

Changes for 2003 Report

- Orleans Parish's grade has improved from a B to an A.
- St. Bernard Parish's grade has improved from an F to a D.

High Ozone Days

Parish	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Livingston	19	2	0	7.3	F	9.7	F	5.7	F	5.3	F
Orleans	0	0	0	0.0	A	0.3	B	0.3	B	0.3	B
Ouachita	3	0	0	1.0	C	1.0	C	0.3	B	0.0	A
Pointe Coupee	4	1	0	1.8	C	1.5	C	3.5	F	3.0	D
St. Bernard	7	0	0	2.3	D	4.0	F	2.7	D	3.0	D
St. Charles	11	2	0	4.7	F	5.7	F	3.7	F	2.7	D
St. James	12	0	0	4.0	F	4.7	F	3.7	F	2.3	D
St. John the Baptist	16	0	0	5.3	F	6.3	F	4.3	F	3.2	D
St. Mary	10	0	0	3.3	F	5.8	F	4.8	F	3.3	F
W. Baton Rouge	16	3	0	6.8	F	7.0	F	4.2	F	4.0	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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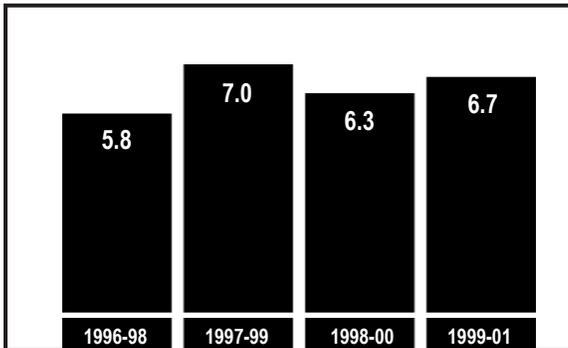
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Cumberland	265,612	51,463	35,324	3,426	19,231	9,541	3,304
Hancock	51,791	9,282	8,285	638	3,756	1,953	743
Kennebec	117,114	22,711	16,605	1,544	8,377	4,245	1,532
Knox	39,618	7,227	6,832	490	2,863	1,506	592
Oxford	54,755	10,642	8,793	732	3,877	2,015	773
Penobscot	144,919	26,877	18,920	1,830	10,566	5,227	1,792
Piscataquis	17,235	3,169	2,995	223	1,224	652	261
Sagadahoc	35,214	7,490	4,334	502	2,461	1,233	426
York	186,742	38,157	25,429	2,559	13,202	6,670	2,381
TOTAL	913,000	177,018	127,517	11,945	65,557	33,044	11,806

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Hancock County Air Quality Trends



Each bar marks the Weighted Averages for Hancock County for each period.

Changes for 2003 Report

- Cumberland County's grade dropped from a D to an F.
- Knox County's grade dropped from a C to a D.
- Penobscot County's grade dropped from a B to a C.
- Sagadahoc County's data are not sufficient to grade it for this report.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Cumberland	9	1	0	3.5	F	2.7	D	5.0	F	5.3	F
Hancock	17	2	0	6.7	F	6.3	F	7.0	F	5.8	F
Kennebec	4	0	0	1.3	C	1.3	C	2.0	C	2.0	C
Knox	6	2	0	3.0	D	1.8	C	4.0	F	3.8	F
Oxford	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Penobscot	6	0	0	2.0	C	0.7	B	0.7	B	0.7	B
Piscataquis	1	0	0	0.3	B	0.3	B	*	*	*	*
Sagadahoc	*	*	*	*	*	3.5	F	5.8	F	5.7	F
York	15	2	0	6.0	F	5.3	F	7.8	F	6.3	F

(6) Emphysema estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Maryland

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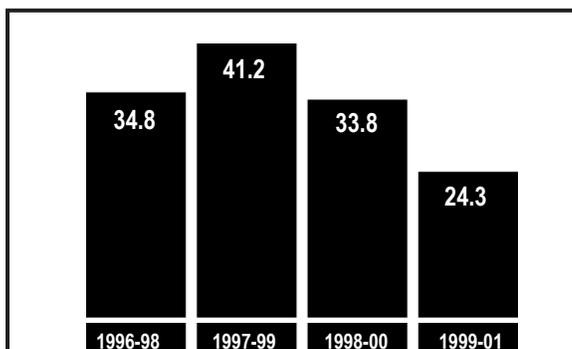
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Anne Arundel	489,656	103,739	48,820	6,837	26,377	16,801	5,268
Baltimore	754,292	148,216	110,335	9,863	40,828	27,268	9,853
Calvert	74,563	18,278	6,627	1,220	3,794	2,413	748
Carroll	150,897	34,873	16,267	2,314	7,833	5,082	1,678
Cecil	85,951	19,944	8,995	1,316	4,467	2,876	932
Charles	120,546	28,811	9,402	1,916	6,228	3,880	1,131
Frederick	195,277	45,217	18,836	2,980	10,185	6,470	2,018
Harford	218,590	51,113	22,160	3,371	11,344	7,295	2,348
Kent	19,197	3,285	3,708	220	1,064	747	303
Montgomery	873,341	186,678	98,157	12,263	46,756	30,294	9,993
Prince George's	801,515	181,768	61,951	11,867	42,553	26,257	7,453
Washington	131,923	25,745	18,690	1,710	7,170	4,752	1,685
Baltimore City	651,154	135,497	85,921	8,923	34,813	22,721	7,782
TOTAL	4,566,902	983,164	509,869	64,800	243,412	156,857	51,193

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire states' sensitive populations.
- (2) City population estimates overlap with county population estimates causing an overestimate of disease. Therefore, city estimates were excluded from total.
- (3) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (4) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 1999 based on national rates (NHIS) applied to county population estimates (US Census).
- (5) **Adult asthma** estimates are for those 18 years and older and represents the estimated number of people who had asthma during 2000 based on state rates (BRFSS) applied to county population estimates (US Census).
- (6) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 1999 based on national rates (NHIS) applied to county

Anne Arundel County Air Quality Trends



Each bar marks the Weighted Averages for Anne Arundel County for each period.

Changes for 2003 Report

- Washington County now has sufficient data to score an F after having no grade in the 2002 report.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Anne Arundel	58	10	0	24.3	F	33.8	F	41.2	F	34.8	F
Baltimore	26	10	0	13.7	F	13.7	F	17.8	F	12.3	F
Calvert	20	0	0	6.7	F	8.3	F	8.0	F	5.7	F
Carroll	29	2	0	10.7	F	13.3	F	14.7	F	12.2	F
Cecil	44	8	2	20.0	F	21.7	F	22.3	F	18.5	F
Charles	39	6	0	16.0	F	23.7	F	27.8	F	18.3	F
Frederick	36	1	0	12.5	F	11.3	F	*	*	*	*
Harford	42	12	2	21.3	F	20.0	F	25.3	F	20.5	F
Kent	33	8	0	15.0	F	15.8	F	20.2	F	14.0	F
Montgomery	27	2	0	10.0	F	13.7	F	17.7	F	13.8	F
Prince George's	45	6	0	18.0	F	21.0	F	27.2	F	22.3	F
Washington	18	0	0	6.0	F	*	*	*	*	*	*
Baltimore City	*	*	*	*	*	*	*	10.0	F	9.0	F

(7) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(9) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(10) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(11) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(12) **Grades** are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Massachusetts

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At-Risk Groups

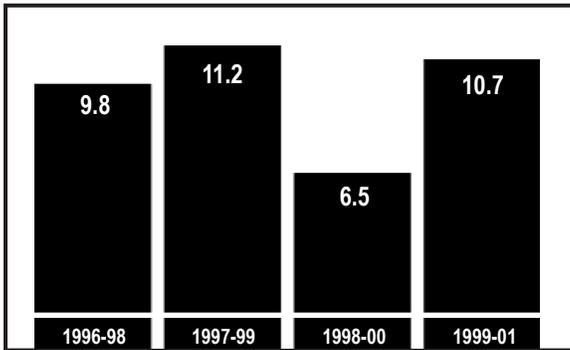
County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Barnstable	222,230	37,618	51,265	2,513	15,877	8,962	3,970
Berkshire	134,953	24,455	24,223	1,669	9,674	5,111	2,026
Bristol	534,678	110,158	75,512	7,284	38,121	18,941	6,735
Essex	723,419	153,569	100,306	10,075	51,096	25,555	9,114
Hampden	456,228	98,538	66,251	6,573	31,788	15,953	5,797
Hampshire	152,251	24,209	18,327	1,651	11,809	5,574	1,776
Middlesex	1,465,396	278,589	187,307	18,198	108,671	52,516	17,579
Suffolk	689,807	117,831	76,163	7,712	53,889	24,343	7,223
Worcester	750,963	161,741	97,969	10,642	53,120	26,041	8,985
TOTAL	5,129,925	1,006,708	697,323	66,317	374,046	182,996	63,205

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

MASSACHUSETTS

Barnstable County Air Quality Trends



Each bar marks the Weighted Averages for Barnstable County for each period.

Changes for 2003 Report

- Berkshire County's grade dropped from a B to an F.
- Suffolk County's grade dropped from a D to an F.
- Barnstable County replaces Bristol County as having the worst record of high ozone days in the state.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Barnstable	21	6	1	10.7	F	6.5	F	11.2	F	9.8	F
Berkshire	17	1	0	6.2	F	0.7	B	0.7	B	1.0	C
Bristol	21	7	0	10.5	F	7.3	F	11.5	F	11.0	F
Essex	18	3	0	7.5	F	6.3	F	8.7	F	7.0	F
Hampden	16	1	0	5.8	F	4.3	F	7.0	F	5.7	F
Hampshire	20	3	0	8.2	F	6.0	F	8.2	F	6.3	F
Middlesex	20	1	0	7.2	F	5.7	F	7.8	F	5.8	F
Suffolk	12	2	0	5.0	F	3.0	D	3.7	F	2.0	C
Worcester	15	0	0	5.0	F	5.3	F	6.7	F	4.0	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Michigan

25900 Greenfield Road, Suite 401

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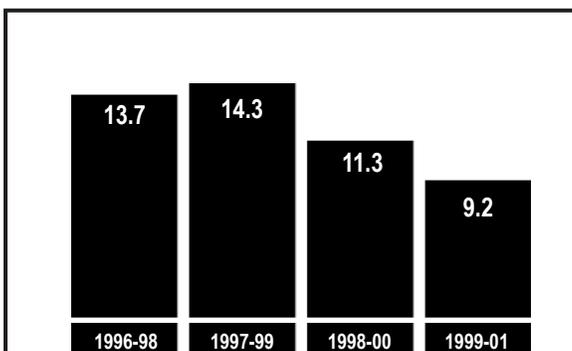
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Allegan	105,665	25,219	11,725	1,686	6,823	3,486	1,155
Benzie	15,998	3,108	2,803	207	1,082	601	239
Berrien	162,453	34,943	23,449	2,339	10,753	5,735	2,106
Cass	51,104	10,680	6,927	722	3,407	1,823	659
Clinton	64,753	14,945	7,034	1,006	4,215	2,181	728
Genesee	436,141	100,365	50,607	6,614	28,696	14,710	4,924
Grand Traverse	77,654	16,155	10,144	1,091	5,217	2,732	958
Huron	36,079	6,996	7,006	484	2,395	1,357	566
Ingham	279,320	54,417	26,251	3,614	19,749	9,511	2,761
Kalamazoo	238,603	48,154	27,148	3,174	16,549	8,256	2,634
Kent	574,335	135,635	59,625	8,973	37,707	18,689	5,863

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Berrien County Air Quality Trends



Each bar marks the Weighted Averages for Berrien County for each period.

Changes for 2003 Report

- Ingham County's grade improved from an F to a D.
- Missaukee County's grade dropped from a D to an F.
- Muskegon County replaces Allegan County as having the worst record of high ozone days.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Allegan	22	3	0	8.8	F	12.0	F	13.3	F	11.8	F
Benzie	20	2	0	7.7	F	7.0	F	7.5	F	4.2	F
Berrien	26	1	0	9.2	F	11.3	F	14.3	F	13.7	F
Cass	23	1	0	8.2	F	8.2	F	9.5	F	8.8	F
Clinton	9	0	0	3.0	D	2.3	D	2.3	D	0.7	B
Genesee	26	1	0	9.2	F	7.0	F	7.3	F	5.0	F
Grand Traverse	*	*	*	*	*	*	*	*	*	*	*
Huron	10	2	0	4.3	F	3.8	F	4.5	F	2.3	D
Ingham	9	0	0	3.0	D	3.3	F	3.3	F	3.0	D
Kalamazoo	16	0	0	5.3	F	5.0	F	6.7	F	4.7	F
Kent	19	0	0	6.3	F	6.3	F	6.0	F	4.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Michigan

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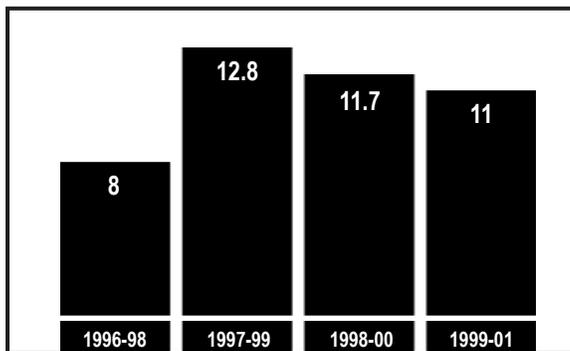
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Lenawee	98,890	20,967	12,523	1,419	6,606	3,443	1,193
Macomb	788,149	159,052	107,651	10,495	53,959	28,057	9,828
Mason	28,274	5,559	4,748	379	1,896	1,047	411
Missaukee	14,478	3,179	2,143	217	942	506	189
Muskegon	170,200	38,765	21,887	2,592	11,127	5,778	2,014
Oakland	1,194,156	252,191	134,959	16,632	81,114	41,461	13,647
Ottawa	238,314	57,152	24,112	3,782	15,551	7,711	2,409
St. Clair	164,235	36,339	20,088	2,432	10,868	5,630	1,928
Washtenaw	322,895	60,056	26,271	3,942	23,349	11,062	3,025
Wayne	2,061,162	490,692	248,982	31,946	134,482	68,731	23,208
TOTAL	7,122,858	1,574,569	836,083	103,746	476,486	242,510	80,445

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Muskegon County Air Quality Trends



Each bar marks the Weighted Averages for Muskegon County for each period.

Changes for 2003 Report

- Ingham County's grade improved from an F to a D.
- Missaukee County's grade dropped from a D to an F.
- Muskegon County replaces Allegan County as having the worst record of high ozone days.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Lenawee	8	0	0	2.7	D	2.3	D	2.0	C	3.3	F
Macomb	25	3	0	9.8	F	9.2	F	11.5	F	10.2	F
Mason	20	4	0	8.7	F	8.3	F	9.2	F	6.8	F
Missaukee	10	0	0	3.3	F	3.0	D	*	*	*	*
Muskegon	28	2	1	11.0	F	11.7	F	12.8	F	8.0	F
Oakland	14	0	0	4.7	F	4.0	F	4.3	F	2.3	D
Ottawa	15	0	0	5.0	F	5.0	F	6.0	F	4.7	F
St. Clair	12	1	0	4.5	F	6.8	F	8.2	F	8.2	F
Washtenaw	14	2	0	5.7	F	3.5	F	3.8	F	3.7	F
Wayne	24	0	0	8.0	F	7.3	F	8.7	F	6.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Minnesota

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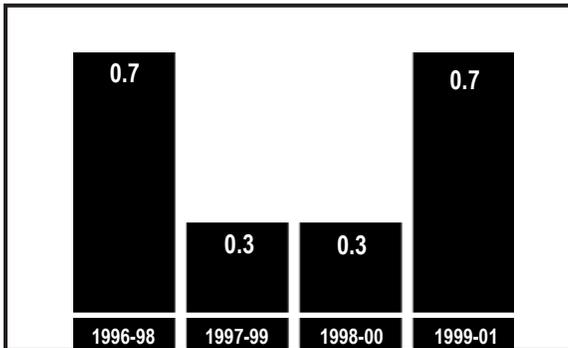
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Anoka	298,084	72,123	21,082	4,768	14,182	9,450	2,634
Carlton	31,671	6,440	4,784	444	1,548	1,131	421
Dakota	355,904	87,181	26,246	5,744	16,844	11,252	3,172
Lake	11,058	1,986	2,211	136	558	430	181
Mille Lacs	22,330	4,822	3,602	333	1,063	787	304
St. Louis	200,528	35,917	32,274	2,479	10,181	7,462	2,803
Washington	201,130	49,329	15,267	3,275	9,510	6,433	1,880
TOTAL	1,120,705	257,798	105,466	17,179	53,886	36,945	11,394

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Washington County Air Quality Trends



Each bar marks the Weighted Averages for Washington County for each period.

Changes for 2003 Report

- Monitoring data are now available for Carlton County.
- Sufficient data are now available for Mille Lacs County to grade it a B, after having no grade in the 2002 report.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Anoka	1	0	0	0.3	B	0.3	B	0.3	B	0.3	B
Carlton	*	*	*	*	*	*	*	*	*	*	*
Dakota	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Lake	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Mille Lacs	1	0	0	0.3	B	*	*	*	*	*	*
St. Louis	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Washington	2	0	0	0.7	B	0.3	B	0.3	B	0.7	B

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

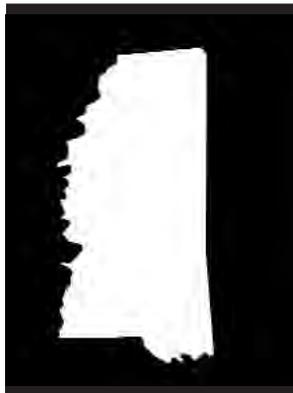
(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Mississippi

P.O. Box 2178
 Ridgeland, MS 39158
 (601) 206-5810
www.lungusa.org/mississippi

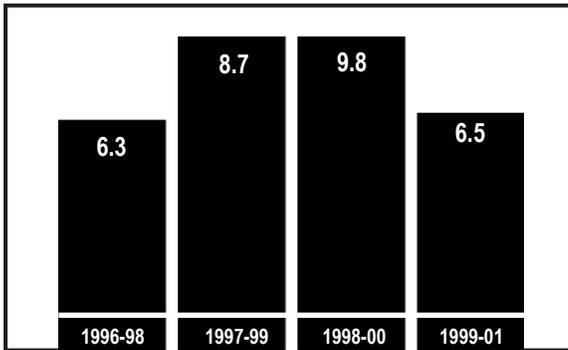
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Adams	34,340	7,492	5,345	508	1,404	1,213	463
Alcorn	34,558	6,848	5,121	456	1,468	1,255	460
Bolivar	40,633	9,732	4,480	666	1,578	1,309	426
DeSoto	107,199	25,617	9,538	1,670	4,283	3,495	1,056
Hancock	42,967	8,968	6,009	597	1,805	1,541	561
Harrison	189,601	41,101	21,002	2,731	7,755	6,415	2,060
Hinds	250,800	57,756	27,513	3,875	9,973	8,251	2,652
Jackson	131,420	30,110	13,547	2,010	5,299	4,383	1,407
Lauderdale	78,161	17,183	11,067	1,150	3,177	2,702	972
Lee	75,755	17,524	8,683	1,159	3,043	2,536	842
Madison	74,674	17,990	7,271	1,182	2,945	2,414	744
Panola	34,274	8,271	4,142	557	1,341	1,125	384
Warren	49,644	11,690	5,788	783	1,976	1,655	560
TOTAL	1,144,026	260,282	129,506	17,346	46,045	38,294	12,587

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

DeSoto County Air Quality Trends



Each bar marks the Weighted Averages for DeSoto County for each period.

Changes for 2003 Report

- Monitoring data are now available for Alcorn County.
- Sufficient data are now available to grade Bolivar County a D and Harrison County an F after having a grade for neither in the 2002 report.
- Adams County's grade improved from a D to a C.
- The grades for Hinds County, Madison County, and Warren County improved from a C to a B.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Adams	6	0	0	2.0	C	3.0	D	2.0	C	2.0	C
Alcorn	*	*	*	*	*	*	*	*	*	*	*
Bolivar	8	0	0	2.7	D	*	*	*	*	*	*
DeSoto	18	1	0	6.5	F	9.8	F	8.7	F	6.3	F
Hancock	16	0	0	5.3	F	6.3	F	5.0	F	2.7	D
Harrison	17	0	0	5.7	F	*	*	*	*	*	*
Hinds	2	0	0	0.7	B	1.3	C	1.0	C	0.7	B
Jackson	12	1	0	4.5	F	8.2	F	9.7	F	9.0	F
Lauderdale	4	0	0	1.3	C	1.7	C	1.3	C	0.7	B
Lee	14	0	0	4.7	F	6.7	F	6.0	F	2.7	D
Madison	2	0	0	0.7	B	2.0	C	2.0	C	1.3	C
Panola	*	*	*	*	*	*	*	*	*	*	*
Warren	1	0	0	0.3	B	1.3	C	1.0	C	1.3	C

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



**American Lung Association
of Eastern Missouri**

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St. Louis, MO 63139-3196
(314) 645-5505
www.lungusa.org/easternmissouri

**American Lung Association
of Western Missouri**

2007 Broadway
Kansas City, MO 64108-2080
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www.lungusa.org/westernmissouri

At-Risk Groups

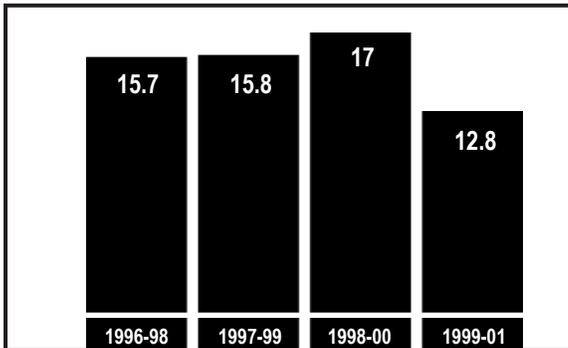
County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Cass	82,092	19,477	9,636	1,289	4,912	2,742	929
Cedar	13,733	2,669	2,855	187	824	522	226
Clay	184,006	39,617	19,848	2,628	11,498	6,262	2,005
Greene	240,391	44,393	32,668	2,959	15,582	8,660	2,958
Jackson	654,880	141,203	81,981	9,333	40,604	22,531	7,623
Jefferson	198,099	45,694	18,199	3,056	12,111	6,511	1,996
Monroe	9,311	1,956	1,637	133	559	339	136
Platte	73,781	15,732	6,505	1,052	4,653	2,502	758
St. Charles	283,883	68,779	24,852	4,548	17,137	9,132	2,746
Ste. Genevieve	17,842	3,840	2,592	263	1,078	625	231
St. Louis	1,016,315	211,384	143,262	14,156	62,888	36,039	12,980
St. Louis City	348,189	75,200	47,842	4,958	21,502	11,938	4,126
TOTAL	3,122,522	669,944	391,877	44,563	193,347	107,804	36,715

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire states' sensitive populations.
- (2) City population estimates overlap with county population estimates causing an overestimate of disease. Therefore, city estimates were excluded from total.
- (3) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (4) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 1999 based on national rates (NHIS) applied to county population estimates (US Census).
- (5) **Adult asthma** estimates are for those 18 years and older and represents the estimated number of people who had asthma during 2000 based on state rates (BRFSS) applied to county population estimates (US Census).
- (6) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 1999 based on national rates (NHIS) applied to county

St. Charles County Air Quality Trends

Changes for 2003 Report



Each bar marks the Weighted Averages for St. Charles County for each period.

■ Platte County's grade improved from an F to a D.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Cass	*	*	*	*	*	*	*	*	*	*	*
Cedar	11	0	0	3.7	F	5.0	F	*	*	*	*
Clay	13	0	0	4.3	F	8.0	F	9.5	F	10.2	F
Greene	3	1	0	1.5	C	1.5	C	1.2	C	0.7	B
Jackson	*	*	*	*	*	*	*	0.8	B	0.0	A
Jefferson	19	2	0	7.3	F	7.8	F	8.7	F	6.3	F
Monroe	8	1	0	3.2	D	3.2	D	3.5	F	2.3	D
Platte	7	0	0	2.3	D	3.3	F	3.7	F	4.0	F
St. Charles	35	1	1	12.8	F	17.0	F	15.8	F	15.7	F
Ste. Genevieve	16	2	0	6.3	F	8.0	F	6.5	F	5.5	F
St. Louis	27	1	0	9.5	F	11.3	F	11.7	F	9.3	F
St. Louis City	11	1	0	4.2	F	4.8	F	3.8	F	4.0	F

(7) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(9) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(10) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(11) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(12) **Grades** are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



**American Lung Association of
the Northern Rockies**

825 Helena Avenue
Helena, MT 59601-3459
(406) 442-6556
www.lungusa/northernrockies

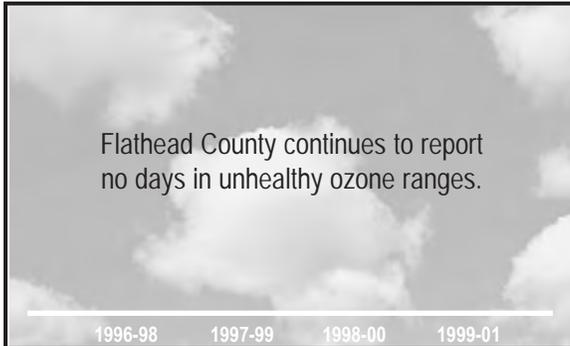
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Flathead	74,471	15,487	9,656	1,067	4,332	2,640	943
TOTAL	74,471	15,487	9,656	1,067	4,332	2,640	943

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Flathead County Air Quality Trends



Changes for 2003 Report

- There were no changes from the 2002 report.
- Flathead County continues to report no days in unhealthy ozone ranges.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Flathead	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Nebraska

7101 Newport Avenue, #303

Omaha, NE 68152

(402) 572-3030

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At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Douglas	463,585	102,584	50,795	6,814	19,785	15,557	4,983
Lancaster	250,291	48,798	26,080	3,253	11,143	8,599	2,611
TOTAL	713,876	151,382	76,875	10,067	30,928	24,155	7,594

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Douglas County Air Quality Trends

Changes for 2003 Report



■ There were no changes from the 2002 report.

Each bar marks the Weighted Averages for Douglas County for each period.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Douglas	2	0	0	0.7	B	0.7	B	0.7	B	0.0	A
Lancaster	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

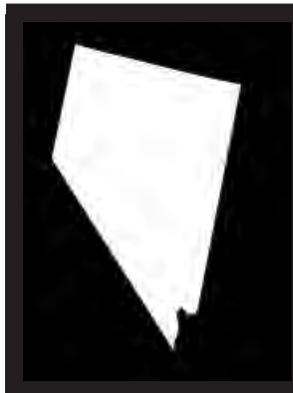
(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Idaho/Nevada

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 Reno, NV 89510
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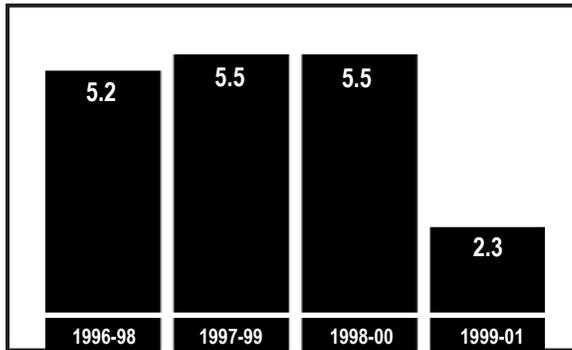
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Clark	1,375,765	300,700	146,899	26,446	66,422	39,096	14,404
Douglas	41,259	8,039	6,257	647	2,132	1,351	575
Washoe	339,486	71,359	35,797	6,346	16,583	9,791	3,619
White Pine	9,181	1,816	1,239	183	492	296	114
Carson City	52,457	10,257	7,837	940	2,717	1,682	691
TOTAL	1,818,148	392,171	198,029	34,561	88,347	52,216	19,404

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire states' sensitive populations.
- (2) City population estimates overlap with county population estimates causing an overestimate of disease. Therefore, city estimates were excluded from total.
- (3) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (4) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 1999 based on national rates (NHIS) applied to county population estimates (US Census).
- (5) **Adult asthma** estimates are for those 18 years and older and represents the estimated number of people who had asthma during 2000 based on state rates (BRFSS) applied to county population estimates (US Census).
- (6) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 1999 based on national rates (NHIS) applied to county

Clark County Air Quality Trends



Each bar marks the Weighted Averages for Clark County for each period.

Changes for 2003 Report

- Clark County's grade improved from an F to a D.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Clark	7	0	0	2.3	D	5.5	F	5.5	F	5.2	F
Douglas	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Washoe	1	0	0	0.3	B	0.3	B	0.3	B	0.0	A
White Pine	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Carson City	0	0	0	0.0	A	0.0	A	0.0	A	*	*

(7) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(9) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(10) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(11) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(12) **Grades** are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



**American Lung Association of
New Hampshire**

9 Cedarwood Drive, Unit 12
Bedford, NH 03110
(603) 669-2411
www.nhlung.org

At-Risk Groups

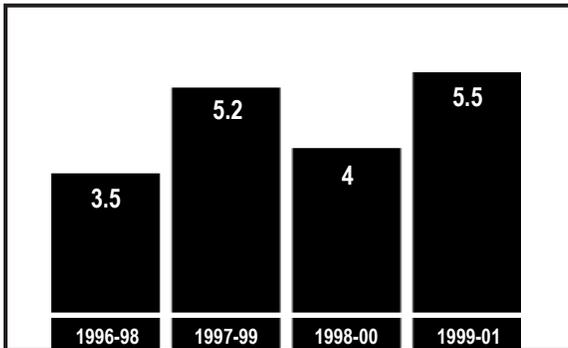
County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Belknap	56,325	10,852	8,496	737	3,593	2,078	777
Carroll	43,666	8,027	7,789	546	2,789	1,673	673
Cheshire	73,825	14,027	10,086	951	4,776	2,670	940
Coos	33,111	6,092	6,113	418	2,109	1,259	510
Grafton	81,743	14,587	10,973	989	5,400	2,990	1,032
Hillsborough	380,841	84,324	40,526	5,542	23,948	12,902	4,137
Merrimack	136,225	28,107	16,923	1,877	8,660	4,790	1,637
Rockingham	277,359	61,499	28,087	4,055	17,402	9,442	3,024
Strafford	112,233	22,020	12,593	1,469	7,330	3,889	1,228
Sullivan	40,458	7,942	6,384	534	2,567	1,493	568
TOTAL	1,235,786	257,477	147,970	17,119	78,575	43,187	14,526

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

NEW HAMPSHIRE

Hillsborough County Air Quality Trends



Each bar marks the Weighted Averages for Hillsborough County for each period.

Changes for 2003 Report

- Merrimack County's grade dropped from an A to a B.
- Strafford County's grade dropped from a B to a C.
- Sufficient data are now available to grade Coos County a C, after having no grade in the 2002 report.
- Hillsborough County replaces Rockingham County as having the worst record of high ozone days.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Baldwin	*	*	*	*	*	*	*	*	*	*	*
Belknap	*	*	*	*	*	*	*	0.3	B	0.3	B
Carroll	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Cheshire	3	0	0	1.0	C	1.0	C	1.0	C	1.0	C
Coos	4	0	0	1.3	C	*	*	*	*	*	*
Grafton	0	0	0	0.0	A	0.0	A	0.0	A	0.3	B
Hillsborough	15	1	0	5.5	F	4.0	F	5.2	F	3.5	F
Merrimack	1	0	0	0.3	B	0.0	A	0.3	B	1.0	C
Rockingham	13	2	0	5.3	F	4.2	F	7.7	F	6.8	F
Strafford	3	0	0	1.0	C	0.7	B	1.2	C	1.2	C
Sullivan	1	0	0	0.3	B	0.3	B	0.3	B	0.7	B

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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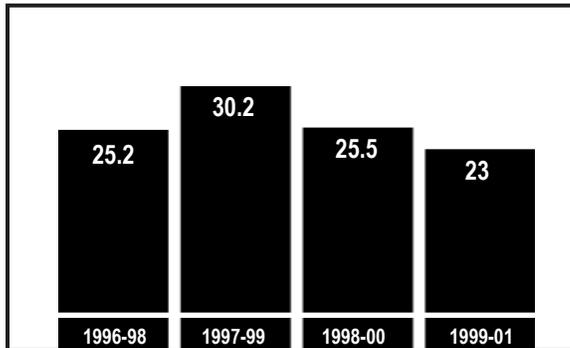
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Atlantic	252,552	53,962	34,437	3,531	11,818	8,860	3,122
Bergen	884,118	171,036	134,820	11,229	42,172	32,537	12,008
Camden	508,932	113,309	63,769	7,529	23,465	17,392	5,964
Cumberland	146,438	30,871	19,087	2,057	6,876	5,090	1,752
Essex	793,633	174,972	94,380	11,444	37,189	27,076	8,984
Gloucester	254,673	55,675	29,678	3,712	11,863	8,701	2,898
Hudson	608,975	115,456	69,271	7,604	30,282	21,265	6,636
Hunterdon	121,989	26,593	12,228	1,735	5,727	4,245	1,380
Mercer	350,761	70,864	44,140	4,664	16,830	12,362	4,169
Middlesex	750,162	149,530	92,590	9,823	36,330	26,358	8,725
Monmouth	615,301	135,509	76,923	8,867	28,519	21,421	7,419
Morris	470,212	99,565	54,530	6,461	22,263	16,553	5,557
Ocean	510,916	100,475	113,260	6,583	23,361	19,514	8,497
Passaic	489,049	108,083	59,033	7,050	22,909	16,687	5,560
TOTAL	6,757,711	1,405,900	898,146	92,290	319,604	238,062	82,670

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Candem County Air Quality Trends



Each bar marks the Weighted Averages for Candem County for each period.

Changes for 2003 Report

- There were no changes in grades or monitors from the 2002 report.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Atlantic	26	0	0	8.7	F	13.0	F	18.3	F	18.3	F
Bergen	*	*	*	*	*	*	*	*	*	3.0	D
Camden	48	14	0	23.0	F	25.5	F	30.2	F	25.2	F
Cumberland	30	5	0	12.5	F	13.2	F	16.7	F	12.8	F
Essex	*	*	*	*	*	*	*	6.2	F	4.8	F
Gloucester	37	8	0	16.3	F	17.8	F	21.8	F	18.0	F
Hudson	20	5	1	9.8	F	10.0	F	12.3	F	7.5	F
Hunterdon	37	6	0	15.3	F	18.2	F	21.8	F	16.2	F
Mercer	35	10	3	18.7	F	19.2	F	21.3	F	15.5	F
Middlesex	38	9	2	18.5	F	17.5	F	19.7	F	14.2	F
Monmouth	21	4	0	9.0	F	12.5	F	15.2	F	15.2	F
Morris	34	6	0	14.3	F	16.8	F	18.8	F	15.2	F
Ocean	40	12	1	20.0	F	22.2	F	25.8	F	22.3	F
Passaic	24	0	0	8.0	F	8.0	F	*	*	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

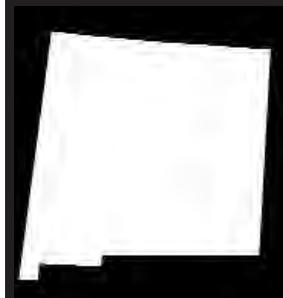
(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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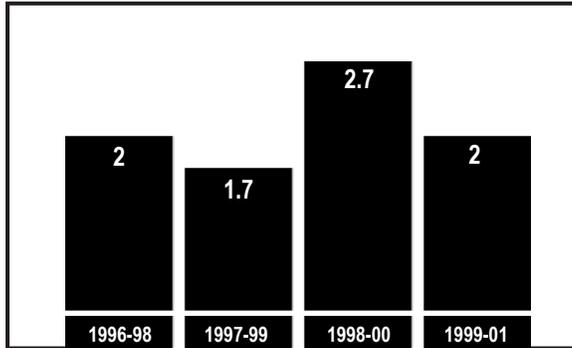
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bernalillo	556,678	117,008	64,156	7,798	28,823	19,180	6,292
Doña Ana	174,682	43,021	18,512	2,870	8,456	5,589	1,783
Eddy	51,658	12,160	7,589	824	2,573	1,762	662
Sandoval	89,908	22,112	9,542	457	1,523	1,020	344
San Juan	113,801	30,217	10,326	1,470	4,405	2,933	962
Valencia	66,152	16,594	6,723	1,102	3,210	2,130	687
TOTAL	1,052,879	241,112	116,848	14,523	48,989	32,614	10,731

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Doña Ana County Air Quality Trends



Each bar marks the Weighted Averages for Doña Ana County for each period.

Changes for 2003 Report

- Doña Ana County's grade improved from a D to a C.

High Ozone Days

County	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Bernalillo	2	0	0	0.7	B	0.3	B	0.3	B	0.0	A
Doña Ana	6	0	0	2.0	C	2.7	D	1.7	C	2.0	C
Eddy	0	0	0	0.0	A	0.0	A	0.0	A	*	*
Sandoval	1	0	0	0.3	B	0.3	B	0.3	B	0.3	B
San Juan	2	0	0	0.7	B	0.7	B	0.0	A	*	*
Valencia	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.


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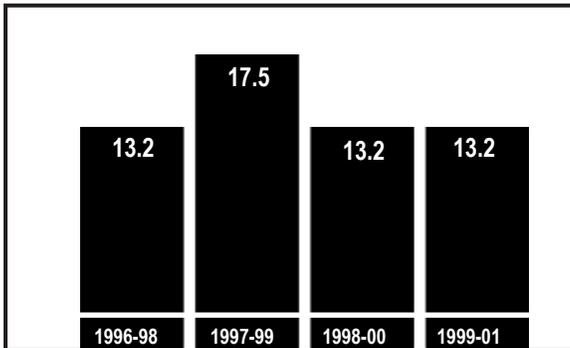
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Albany	294,565	55,025	42,594	3,676	16,863	10,714	3,803
Bronx	1,332,650	337,315	133,948	21,975	69,856	42,260	13,138
Chautauqua	139,750	27,822	22,372	1,893	7,754	5,055	1,910
Chemung	91,070	18,212	14,222	1,228	5,067	3,287	1,227
Dutchess	280,150	58,675	33,690	3,886	15,619	9,760	3,274
Erie	950,265	191,558	151,258	12,749	52,912	34,383	12,917
Essex	38,851	7,172	6,227	490	2,207	1,441	543
Hamilton	5,379	817	1,076	59	315	218	92
Herkimer	64,427	12,736	10,844	868	3,573	2,362	918
Jefferson	111,738	24,792	12,627	1,635	6,121	3,723	1,185
Madison	69,441	14,067	8,661	957	3,874	2,430	825
Monroe	735,343	157,363	95,779	10,411	40,568	25,605	8,877
New York	1,537,195	218,694	186,776	14,263	95,490	57,988	18,217

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

New York County Air Quality Trends



Each bar marks the Weighted Averages for New York County for each period.

Changes for 2003 Report

- Albany County's grade dropped from a C to an F.
- The grades for Essex County, Monroe County, and Saratoga County dropped from a D to an F.
- Ulster County's grade dropped from a C to a D.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Albany	10	0	0	3.3	F	1.3	C	1.7	C	1.3	C
Bronx	8	2	0	3.7	F	3.7	F	5.2	F	3.7	F
Chautauqua	29	1	0	10.2	F	9.8	F	9.7	F	9.8	F
Chemung	5	0	0	1.7	C	1.7	C	1.3	C	1.7	C
Dutchess	18	0	0	6.0	F	6.0	F	7.7	F	6	F
Erie	17	3	0	7.2	F	7.8	F	6.5	F	7.8	F
Essex	11	0	0	3.7	F	2.7	D	2.7	D	2.7	D
Hamilton	4	0	0	1.3	C	1.0	C	1.0	C	1	C
Herkimer	1	0	0	0.3	B	0.3	B	0.0	A	0.3	B
Jefferson	21	3	0	8.5	F	3.7	F	6.0	F	3.7	F
Madison	4	0	0	1.3	C	1.3	C	1.0	C	1.3	C
Monroe	11	0	0	3.7	F	3.0	D	3.7	F	3	D
New York	27	7	1	13.2	F	13.2	F	17.5	F	13.2	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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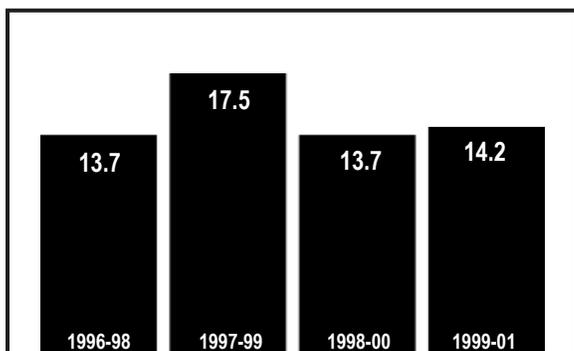
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Niagara	219,846	44,711	33,884	2,999	12,193	7,904	2,942
Oneida	235,469	46,047	38,753	3,110	13,157	8,596	3,273
Onondaga	458,336	98,384	63,294	6,530	25,162	15,995	5,676
Orange	341,367	83,315	35,185	5,483	18,092	11,153	3,590
Putnam	95,745	21,368	9,147	1,403	5,278	3,263	1,034
Queens	2,229,379	426,705	283,042	28,160	127,842	79,251	26,391
Richmond	443,728	94,953	51,433	6,263	24,624	15,352	5,100
Saratoga	200,635	41,909	22,984	2,779	11,215	7,000	2,322
Schenectady	146,555	29,817	24,398	1,972	8,133	5,338	2,052
Suffolk	1,419,369	313,924	167,558	20,465	78,110	48,877	16,414
Ulster	177,749	34,495	23,711	2,310	10,087	6,414	2,246
Wayne	93,765	21,269	11,399	1,422	5,057	3,197	1,101
Westchester	923,459	195,992	128,964	12,763	51,230	32,775	11,737
TOTAL	12,636,226	2,577,137	1,613,826	169,750	710,399	444,340	150,804

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Richmond County Air Quality Trends



Each bar marks the Weighted Averages for Richmond County for each period.

Changes for 2003 Report

- Albany County's grade dropped from a C to an F.
- The grades for Essex County, Monroe County, and Saratoga County dropped from a D to an F.
- Ulster County's grade dropped from a C to a D.

High Ozone Days

County	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Niagara	19	1	0	6.8	F	5.3	F	4.7	F	5.3	F
Oneida	5	0	0	1.7	C	1.0	C	0.7	B	1	C
Onondaga	9	0	0	3.0	D	2.7	D	3.0	D	2.7	D
Orange	20	1	0	7.2	F	5.2	F	6.8	F	5.2	F
Putnam	23	3	0	9.2	F	8.2	F	10.2	F	8.2	F
Queens	15	1	0	5.5	F	7.2	F	9.3	F	7.2	F
Richmond	31	5	2	14.2	F	13.7	F	17.5	F	13.7	F
Saratoga	14	0	0	4.7	F	3.0	D	3.7	F	3	D
Schenectady	4	0	0	1.3	C	1.0	C	1.0	C	1	C
Suffolk	24	8	0	12.0	F	12.7	F	15.3	F	12.7	F
Ulster	7	0	0	2.3	D	1.7	C	2.7	D	1.7	C
Wayne	13	0	0	4.3	F	4.0	F	5.0	F	4	F
Westchester	15	7	0	8.5	F	7.7	F	10.2	F	7.7	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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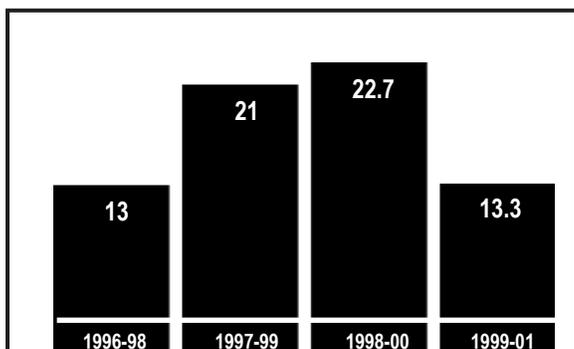
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Alexander	33,603	6,874	3,996	455	1,605	1,173	398
Avery	17,167	2,740	2,698	184	872	647	238
Buncombe	206,330	37,404	31,776	2,496	10,171	7,606	2,827
Caldwell	77,415	15,282	10,259	1,004	3,748	2,769	978
Camden	6,885	1,398	933	93	329	245	88
Caswell	23,501	4,553	3,060	301	1,142	845	298
Chatham	49,329	9,327	7,530	613	2,422	1,809	671
Cumberland	302,963	72,100	23,395	4,678	13,779	9,382	2,580
Davie	34,835	7,085	4,807	468	1,671	1,246	451
Duplin	49,063	10,711	6,316	708	2,289	1,672	583
Durham	223,314	43,847	21,574	2,832	10,831	7,511	2,221
Edgecombe	55,606	12,542	6,963	833	2,554	1,881	661
Forsyth	306,067	61,970	38,549	4,049	14,667	10,661	3,642
Franklin	47,260	10,081	5,194	661	2,230	1,604	523
Granville	48,498	9,726	5,545	641	2,343	1,683	550
Guilford	421,048	84,712	49,476	5,521	20,159	14,490	4,784
Haywood	54,033	9,314	10,272	621	2,708	2,101	861

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Haywood County Air Quality Trends



Each bar marks the Weighted Averages for Haywood County for each period.

Changes for 2003 Report

- Monitoring data are now available for Randolph County.
- Avery County's grade improved from a C to a B
- The grades for Camden County, Martin County, and New Hanover County improved from a D to a C.
- Chatham County's grade improved from an F to a C.
- Swain County's grade improved from a B to an A.
- Sufficient data are now available to grade Jackson County and Union County an F.
- Rowan County replaces Mecklenburg County as having the worst record of high ozone days.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Alexander	16	0	0	5.3	F	9.0	F	7.0	F	6.3	F
Avery	1	0	0	0.3	B	1.3	C	*	*	*	*
Buncombe	10	0	0	3.3	F	4.7	F	2.3	D	1.7	C
Caldwell	24	0	0	8.0	F	10.8	F	9.8	F	*	*
Camden	6	0	0	2.0	C	2.3	D	2.7	D	*	*
Caswell	23	0	0	7.7	F	12.0	F	13.7	F	13.3	F
Chatham	5	0	0	1.7	C	4.7	F	7.3	F	6.7	F
Cumberland	28	0	0	9.3	F	16.3	F	16.3	F	13.7	F
Davie	49	2	1	18.0	F	20.5	F	18.2	F	10.5	F
Duplin	9	0	0	3.0	D	7.0	F	6.7	F	4.0	F
Durham	19	0	0	6.3	F	11.0	F	9.0	F	7.7	F
Edgecombe	16	0	0	5.3	F	6.3	F	7.0	F	4.7	F
Forsyth	38	2	0	13.7	F	16.2	F	17.2	F	13.5	F
Franklin	14	0	0	4.7	F	8.3	F	10.7	F	10.0	F
Granville	14	1	0	5.2	F	9.5	F	11.2	F	14.8	F
Guilford	30	0	0	10.0	F	14.7	F	13.0	F	7.7	F
Haywood	40	0	0	13.3	F	22.7	F	21.0	F	13.0	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.


American Lung Association of North Carolina

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 Raleigh, NC 27611-7985
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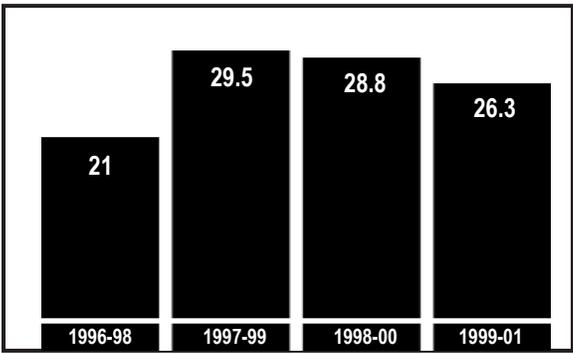
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Jackson	33,121	5,193	4,560	348	1,655	1,218	428
Johnston	121,965	27,146	11,973	1,760	5,719	4,048	1,254
Lenoir	59,648	12,433	8,734	834	2,812	2,112	787
Lincoln	63,780	13,329	7,350	878	3,033	2,206	739
Martin	25,593	5,389	3,894	361	1,200	909	347
Mecklenburg	695,454	148,639	59,724	9,636	32,990	22,830	6,572
New Hanover	160,307	28,124	20,567	1,858	7,947	5,772	1,962
Northampton	22,086	4,415	3,840	297	1,053	809	324
Person	35,623	7,184	4,890	473	1,713	1,267	453
Pitt	133,798	26,568	12,828	1,745	6,322	4,395	1,311
Randolph	130,454	27,461	15,802	1,803	6,190	4,510	1,534
Rockingham	91,928	17,981	13,616	1,188	4,453	3,329	1,229
Rowan	130,340	27,030	18,205	1,779	6,185	4,554	1,632
Swain	12,968	2,580	1,982	174	619	468	177
Union	123,677	29,738	11,148	1,922	5,628	3,974	1,210
Wake	627,846	134,552	46,372	8,715	29,739	20,358	5,555
Yancey	17,774	3,130	3,237	209	884	683	276
TOTAL	4,443,279	920,558	481,065	60,138	211,661	150,767	48,144

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Rowan County Air Quality Trends



Each bar marks the Weighted Averages for Rowan County for each period.

Changes for 2003 Report

- Monitoring data are now available for Randolph County.
- Avery County's grade improved from a C to a B
- The grades for Camden County, Martin County, and New Hanover County improved from a D to a C.
- Chatham County's grade improved from an F to a C.
- Swain County's grade improved from a B to an A.
- Sufficient data are now available to grade Jackson County and Union County an F.
- Rowan County replaces Mecklenburg County as having the worst record of high ozone days.

High Ozone Days

County	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Jackson	10	0	0	3.3	F	*	*	*	*	*	*
Johnston	18	3	0	7.5	F	13.7	F	16.2	F	10.8	F
Lenoir	9	0	0	3.0	D	5.7	F	*	*	*	*
Lincoln	31	1	0	10.8	F	12.8	F	8.7	F	7.7	F
Martin	5	0	0	1.7	C	2.7	D	1.7	C	*	*
Mecklenburg	58	8	1	24.0	F	36.8	F	38.7	F	32.8	F
New Hanover	3	0	0	1.0	C	2.7	D	2.7	D	2.7	D
Northampton	11	0	0	3.7	F	5.3	F	6.7	F	*	*
Person	25	0	0	8.3	F	11.3	F	12.3	F	*	*
Pitt	13	1	0	4.8	F	7.2	F	9.3	F	6.7	F
Randolph	*	*	*	*	*	*	*	*	*	*	*
Rockingham	14	0	0	4.7	F	3.3	F	5.7	F	7.2	F
Rowan	65	8	1	26.3	F	28.8	F	29.5	F	21.0	F
Swain	0	0	0	0.0	A	0.3	B	0.3	B	0.3	B
Union	21	0	0	7.0	F	*	*	*	*	*	*
Wake	36	8	0	16.0	F	26.8	F	30.2	F	22.3	F
Yancey	19	0	0	6.3	F	6.0	F	4.7	F	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

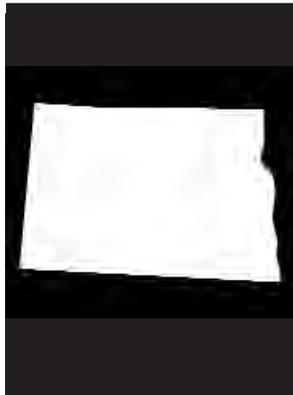
(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of North Dakota

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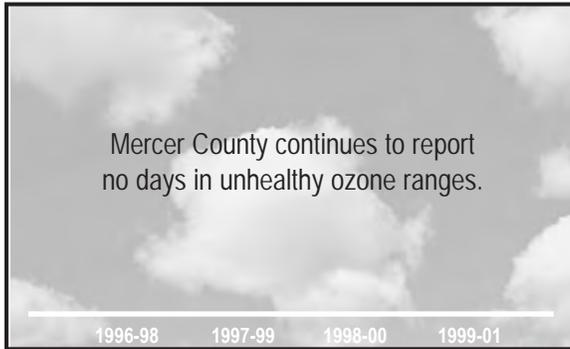
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Billings	888	157	142	12	45	33	13
Cass	123,138	23,995	11,901	1,595	6,625	4,191	1,225
Dunn	3,600	781	625	55	175	130	53
McKenzie	5,737	1,402	900	97	268	197	78
Mercer	8,644	1,932	1,233	139	415	297	112
Oliver	2,065	419	293	31	100	74	29
Steele	2,258	475	442	35	109	82	36
TOTAL	146,330	29,161	15,536	1,964	7,737	5,004	1,546

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Mercer County Air Quality Trends



Changes for 2003 Report

- Sufficient data are now available to grade Dunn County with an A.
- Sufficient data no longer exist to grade Steele County.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Billings	0	0	0	0.0	A	0.0	A	*	*	*	*
Cass	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Dunn	0	0	0	0.0	A	*	*	*	*	*	*
McKenzie	*	*	*	*	*	*	*	*	*	0.0	A
Mercer	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Oliver	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Steele	*	*	*	*	*	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Ohio

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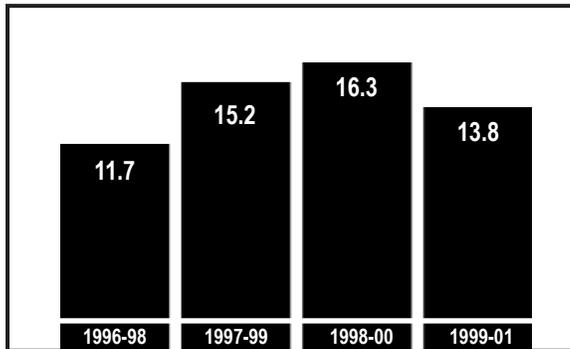
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Allen	108,473	23,207	15,366	1,553	5,867	3,800	1,369
Ashtabula	102,728	22,155	15,051	1,486	5,541	3,626	1,340
Butler	332,807	71,905	35,557	4,772	17,964	11,266	3,576
Clark	144,742	29,974	21,262	2,010	7,917	5,186	1,912
Clermont	177,977	41,424	16,747	2,748	9,350	5,862	1,815
Clinton	40,543	8,876	4,932	592	2,176	1,387	468
Cuyahoga	1,393,978	291,603	217,161	19,244	76,364	49,800	18,561
Delaware	109,989	26,145	9,011	1,718	5,752	3,587	1,067
Franklin	1,068,978	227,531	104,306	14,838	58,286	35,875	10,726
Geauga	90,895	21,303	10,878	1,426	4,758	3,121	1,105
Greene	147,886	28,948	17,492	1,955	8,207	5,216	1,727
Hamilton	845,303	181,089	113,898	12,065	45,745	29,306	10,244
Jefferson	73,894	12,860	13,752	875	4,247	2,853	1,148
Knox	54,500	11,105	7,515	747	2,991	1,930	684
Lake	227,511	45,471	32,044	3,043	12,595	8,204	2,957
Lawrence	62,319	12,494	8,966	844	3,436	2,244	817
Licking	145,491	31,389	17,298	2,092	7,855	5,035	1,703
Logan	46,005	10,116	6,395	679	2,463	1,603	580

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Clinton County Air Quality Trends



Each bar marks the Weighted Averages for Clinton County for each period.

Changes for 2003 Report

- Jefferson County's grade dropped from a D to an F.
- Preble County's grade improved from a D to a C.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Allen	12	0	0	4.0	F	6.0	F	5.7	F	5.8	F
Ashtabula	20	3	0	8.2	F	8.0	F	9.5	F	7.5	F
Butler	30	0	1	10.7	F	15.2	F	16.5	F	15.3	F
Clark	24	2	0	9.0	F	14.2	F	15.3	F	14.3	F
Clermont	28	2	0	10.3	F	14.3	F	13.3	F	7.7	F
Clinton	37	3	0	13.8	F	16.3	F	15.2	F	11.7	F
Cuyahoga	15	0	0	5.0	F	6.2	F	6.5	F	9.0	F
Delaware	21	1	2	8.8	F	11.7	F	12.7	F	*	*
Franklin	22	1	0	7.8	F	10.5	F	11.8	F	10.5	F
Geauga	36	1	0	12.5	F	8.2	F	10.5	F	*	*
Greene	15	1	0	5.5	F	9.7	F	12.2	F	*	*
Hamilton	18	2	0	7.0	F	8.7	F	10.8	F	10.0	F
Jefferson	13	0	0	4.3	F	2.3	D	1.7	C	1.0	C
Knox	21	2	0	8.0	F	8.3	F	7.7	F	7.2	F
Lake	23	2	0	8.7	F	12.2	F	13.7	F	13.7	F
Lawrence	23	0	0	7.7	F	11.8	F	12.5	F	8.3	F
Licking	19	1	0	6.8	F	10.2	F	10.7	F	10.8	F
Logan	*	*	*	*	*	*	*	2.7	D	3.0	D

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Ohio

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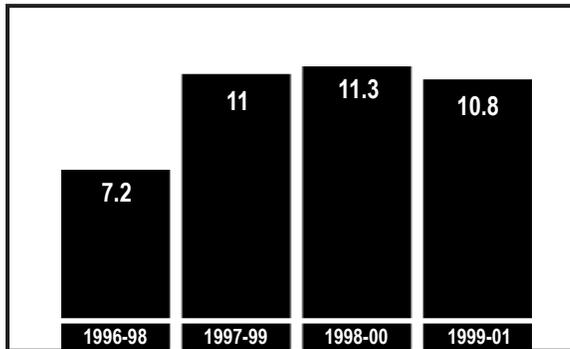
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Lorain	284,664	62,255	35,583	4,123	15,332	9,848	3,390
Lucas	455,054	99,799	59,441	6,607	24,478	15,669	5,432
Madison	40,213	8,159	4,383	549	2,208	1,389	443
Mahoning	257,555	50,547	45,729	3,382	14,355	9,555	3,784
Medina	151,095	34,442	15,913	2,297	7,994	5,105	1,674
Miami	98,868	20,920	13,096	1,418	5,348	3,481	1,241
Montgomery	559,062	115,205	76,697	7,630	30,727	19,801	6,988
Portage	152,061	29,809	16,688	1,997	8,450	5,297	1,679
Preble	42,337	8,939	5,573	610	2,286	1,485	527
Stark	378,098	77,750	57,054	5,195	20,755	13,602	5,053
Summit	542,899	113,663	76,572	7,520	29,701	19,235	6,901
Trumbull	225,116	45,175	35,438	3,032	12,444	8,220	3,118
Union	40,909	9,527	3,941	625	2,157	1,344	413
Warren	158,383	37,239	14,858	2,429	8,340	5,203	1,594
Washington	63,251	12,159	9,463	823	3,533	2,317	855
Wood	121,065	23,247	13,334	1,586	6,730	4,196	1,319
TOTAL	8,744,649	1,846,430	1,151,394	122,510	476,352	305,646	106,211

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Portage County Air Quality Trends



Each bar marks the Weighted Averages for Portage County for each period.

Changes for 2003 Report

- Jefferson County's grade dropped from a D to an F.
- Preble County's grade improved from a D to a C.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Lorain	11	1	0	4.2	F	3.8	F	4.5	F	5.7	F
Lucas	14	2	0	5.7	F	4.3	F	5.3	F	7.5	F
Madison	21	2	0	8.0	F	12.0	F	13.3	F	13.5	F
Mahoning	12	1	0	4.5	F	7.8	F	8.5	F	7.8	F
Medina	17	0	0	5.7	F	6.3	F	7.3	F	7.0	F
Miami	12	0	0	4.0	F	6.7	F	7.3	F	7.5	F
Montgomery	14	2	0	5.7	F	8.0	F	8.8	F	9.5	F
Portage	31	1	0	10.8	F	11.3	F	11.0	F	7.2	F
Preble	5	0	0	1.7	C	2.3	D	4.0	F	4.7	F
Stark	24	2	0	9.0	F	11.5	F	10.8	F	8.5	F
Summit	24	1	0	8.5	F	9.8	F	10.5	F	9.5	F
Trumbull	26	0	0	8.7	F	11.7	F	14.3	F	13.0	F
Union	*	*	*	*	*	*	*	4.2	F	*	*
Warren	20	1	0	7.2	F	11.0	F	12.7	F	11.8	F
Washington	17	1	0	6.2	F	9.0	F	9.0	F	6.5	F
Wood	15	0	0	5.0	F	3.3	F	3.7	F	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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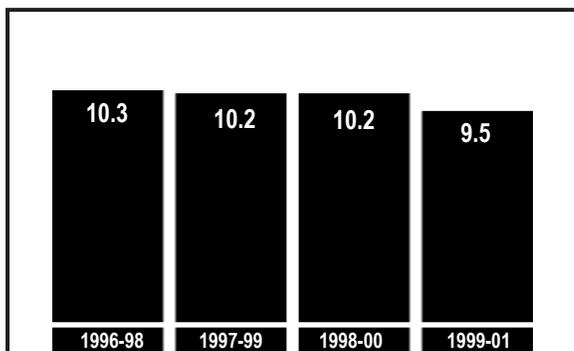
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Carter	45,621	9,820	7,293	661	2,348	1,624	623
Cherokee	42,521	9,079	5,097	617	2,179	1,449	483
Cleveland	208,016	41,460	17,537	2,815	10,905	7,011	2,005
Comanche	114,996	26,625	11,220	1,766	5,740	3,697	1,103
Jefferson	6,818	1,326	1,372	90	361	257	108
Kay	48,080	10,360	8,154	702	2,467	1,718	677
Latimer	10,692	2,232	1,718	152	553	381	145
Love	8,831	1,816	1,428	125	459	321	125
McClain	27,740	6,000	3,321	412	1,416	953	326
Marshall	13,184	2,532	2,576	171	705	502	209
Oklahoma	660,448	140,333	80,716	9,347	34,135	22,688	7,575
Ottawa	33,194	7,006	5,601	472	1,719	1,195	467
Tulsa	563,299	123,696	66,735	8,182	28,866	19,175	6,363
Total	1,783,440	382,285	212,768	25,512	91,855	60,971	20,210

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Tulsa County Air Quality Trends



Each bar marks the Weighted Averages for Tulsa County for each period.

Changes for 2003 Report

- Monitoring data are now available for Carter County and Ottawa County.
- Monitoring data are no longer available for Muskogee County and Okmulgee County.
- The grades for Cleveland County and Comanche County improved from a D for each to a C.
- Latimer County's grade improved from a C to an A.
- McClain County's grade improved from a F to a C.
- Sufficient data are now available to grade Cherokee County, Jefferson County, Kay County, and Marshall County each an F.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Carter	*	*	*	*	*	*	*	*	*	*	*
Cherokee	16	0	0	5.3	F	*	*	*	*	*	*
Cleveland	4	0	0	1.3	C	3.2	D	2.8	D	2.2	D
Comanche	5	0	0	1.7	C	3.0	D	1.7	C	1.7	C
Jefferson	14	0	0	4.7	F	*	*	*	*	*	*
Kay	12	1	0	4.5	F	*	*	*	*	*	*
Latimer	0	0	0	0.0	A	2.0	C	3.0	D	*	*
Love	*	*	*	*	*	*	*	*	*	*	*
McClain	6	0	0	2.0	C	3.3	F	3.0	D	2.0	C
Marshall	13	1	0	4.8	F	*	*	*	*	*	*
Oklahoma	10	0	0	3.3	F	5.0	F	4.7	F	4.3	F
Ottawa	*	*	*	*	*	*	*	*	*	*	*
Tulsa	27	1	0	9.5	F	10.2	F	10.2	F	10.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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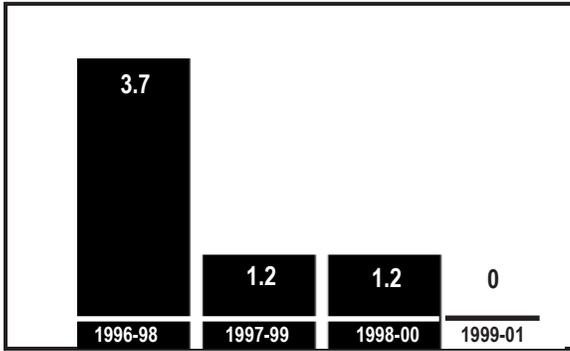
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Clackamas	338,391	73,021	37,428	4,895	20,097	11,753	3,940
Columbia	43,560	9,733	5,063	658	2,551	1,501	518
Jackson	181,269	36,198	28,991	2,448	11,060	6,647	2,549
Lane	322,959	60,325	42,954	4,082	19,974	11,703	4,061
Marion	284,834	64,732	35,206	4,311	16,523	9,609	3,269
Total	1,171,013	244,009	149,642	16,394	70,205	41,214	14,338

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Clackamas County Air Quality Trends



Each bar marks the Weighted Averages for Clackamas County for each period.

Changes for 2003 Report

- The grades for Clackamas County and Jackson County improved from a C to an A.
- The grades for Lane County and Marion County improved from a B to an A.

High Ozone Days

County	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Clackamas	0	0	0	0.0	A	1.2	C	1.2	C	3.7	F
Columbia	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Jackson	0	0	0	0.0	A	1.7	C	1.7	C	2.0	C
Lane	0	0	0	0.0	A	0.3	B	0.3	B	2.3	D
Marion	0	0	0	0.0	A	0.3	B	0.3	B	3.7	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

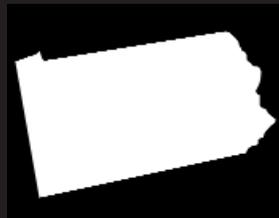
(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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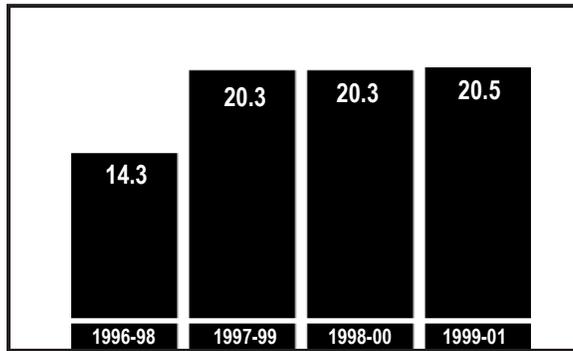
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Allegheny	1,281,666	233,154	228,416	15,549	72,746	48,307	18,852
Armstrong	72,392	13,435	13,053	917	4,047	2,721	1,081
Beaver	181,412	33,767	33,424	2,271	10,160	6,855	2,746
Berks	373,638	76,480	56,190	5,083	20,711	13,370	4,903
Blair	129,144	23,909	22,456	1,619	7,267	4,834	1,883
Bucks	597,635	127,197	74,094	8,488	33,022	20,885	7,194
Cambria	152,598	26,019	30,087	1,774	8,689	5,909	2,413
Centre	135,758	20,319	14,077	1,353	8,434	4,877	1,388
Chester	433,501	94,991	50,677	6,281	23,865	14,939	5,025
Clearfield	83,382	15,500	14,094	1,046	4,702	3,107	1,194
Dauphin	251,798	51,113	35,844	3,380	14,071	9,040	3,255
Delaware	550,864	113,230	85,669	7,567	30,362	19,668	7,302
Erie	280,843	57,688	40,256	3,888	15,528	9,924	3,563
Franklin	129,313	25,666	20,751	1,717	7,188	4,721	1,788
Greene	40,672	7,335	6,193	497	2,333	1,505	549
Lackawanna	213,295	38,063	41,542	2,567	12,036	8,160	3,319

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
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- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Bucks County Air Quality Trends



Each bar marks the Weighted Averages for Bucks County for each period.

Changes for 2003 Report

- Sufficient data are now available to grade Tioga County a D.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Allegheny	39	2	0	14.0	F	19.0	F	23.3	F	19.2	F
Armstrong	33	3	0	12.5	F	13.8	F	13.2	F	*	*
Beaver	25	2	0	9.3	F	11.0	F	12.0	F	11.0	F
Berks	24	4	0	10.0	F	13.5	F	15.8	F	11.5	F
Blair	11	0	0	3.7	F	8.3	F	10.2	F	8.8	F
Bucks	41	11	2	20.5	F	20.3	F	20.3	F	14.3	F
Cambria	20	1	0	7.2	F	10.0	F	10.8	F	8.0	F
Centre	11	0	0	3.7	F	4.7	F	*	*	*	*
Chester	*	*	*	*	*	*	*	*	*	*	*
Clearfield	11	0	0	3.7	F	6.7	F	*	*	*	*
Dauphin	31	3	0	11.8	F	15.2	F	16.8	F	12.0	F
Delaware	34	4	0	13.3	F	15.2	F	19.0	F	14.5	F
Erie	18	1	0	6.5	F	9.5	F	10.8	F	7.3	F
Franklin	38	1	0	13.2	F	16.0	F	16.7	F	10.8	F
Greene	36	3	0	13.5	F	15.2	F	*	*	*	*
Lackawanna	19	1	0	6.8	F	6.5	F	8.3	F	5.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange**: Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red**: Unhealthy (0.105-0.124 ppm ozone), and **Purple**: Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg**: The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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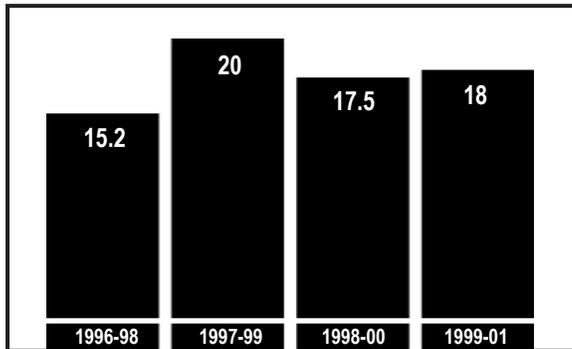
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Lancaster	470,658	104,909	66,060	6,929	25,471	16,293	5,857
Lawrence	94,643	17,840	18,223	1,210	5,244	3,571	1,461
Lehigh	312,090	62,217	49,434	4,130	17,393	11,336	4,244
Luzerne	319,250	54,729	62,740	3,709	18,188	12,351	5,032
Lycoming	120,044	22,825	19,251	1,547	6,742	4,404	1,655
Mercer	120,293	22,869	21,740	1,559	6,675	4,482	1,783
Monroe	138,687	30,710	17,036	2,053	7,550	4,768	1,641
Montgomery	750,097	151,505	111,797	10,017	41,860	27,038	9,891
Northampton	267,066	51,431	42,030	3,443	15,020	9,773	3,640
Perry	43,602	9,085	5,345	615	2,415	1,531	528
Philadelphia	1,517,550	322,998	213,722	21,206	83,819	52,811	18,571
Tioga	41,373	7,836	6,608	543	2,310	1,518	574
Washington	202,897	37,115	36,323	2,488	11,462	7,702	3,048
Westmoreland	369,993	66,502	67,781	4,492	20,921	14,148	5,661
York	381,751	78,064	51,492	5,197	21,304	13,591	4,801
TOTAL	10,057,905	1,998,501	1,556,405	133,134	561,538	364,137	134,842

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
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- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Montgomery County Air Quality Trends



Each bar marks the Weighted Averages for Montgomery County for each period.

Changes for 2003 Report

- Sufficient data are now available to grade Tioga County a D.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Lancaster	33	5	0	13.5	F	17.5	F	23.2	F	17.7	F
Lawrence	5	1	0	2.2	D	2.5	D	3.8	F	2.7	D
Lehigh	26	7	0	12.2	F	15.0	F	17.2	F	12.2	F
Luzerne	17	2	0	6.7	F	6.0	F	8.3	F	6.5	F
Lycoming	3	0	0	1.0	C	1.3	C	1.0	C	1.3	C
Mercer	23	2	0	8.7	F	12.3	F	14.5	F	14.8	F
Monroe	*	*	*	*	*	*	*	*	*	*	*
Montgomery	40	8	1	18.0	F	17.5	F	20.0	F	15.2	F
Northampton	36	7	0	15.5	F	13.3	F	14.3	F	8.3	F
Perry	25	0	0	8.3	F	7.7	F	9.3	F	5.3	F
Philadelphia	29	5	0	12.2	F	11.7	F	15.8	F	15.5	F
Tioga	7	0	0	2.3	D	*	*	*	*	*	*
Washington	26	2	0	9.7	F	19.3	F	23.2	F	19.7	F
Westmoreland	20	1	1	7.8	F	7.8	F	8.5	F	3.3	F
York	22	2	0	8.3	F	11.7	F	13.8	F	11.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Rhode Island

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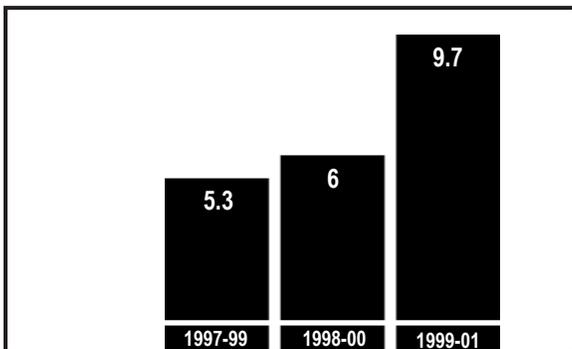
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Kent	167,090	32,363	25,222	2,146	12,033	6,114	2,245
Providence	621,602	125,083	90,659	8,256	45,128	22,026	7,804
Washington	123,546	23,948	15,766	1,597	9,026	4,435	1,519
TOTAL	912,238	181,394	131,647	11,999	66,187	32,574	11,567

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
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- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Washington County Air Quality Trends



Each bar marks the Weighted Averages for Washington County for each period.

Changes for 2003 Report

- Providence County's grade dropped from a D to an F.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Kent	19	6	0	9.3	F	5.5	F	6.5	F	5.3	F
Providence	10	4	0	5.3	F	2.2	D	3.0	D	3.0	D
Washington	21	4	1	9.7	F	6.0	F	5.3	F	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of South Carolina

1817 Gadsden Street
Columbia, SC 29201-2392
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www.lungusa.org/southcarolina

At-Risk Groups

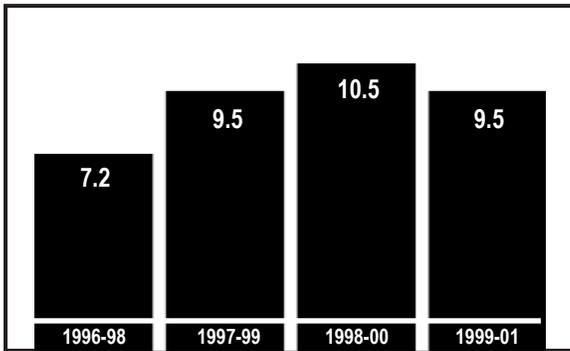
County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Abbeville	26,167	5,487	3,842	366	1,285	933	343
Aiken	142,552	30,894	18,287	2,065	6,884	4,947	1,723
Anderson	165,740	34,162	22,627	2,255	8,190	5,919	2,106
Barnwell	23,478	5,445	2,962	365	1,104	794	277
Berkeley	142,651	33,126	11,261	2,208	6,629	4,593	1,313
Charleston	309,969	61,543	36,858	4,069	15,409	10,863	3,551
Cherokee	52,537	11,431	6,517	750	2,546	1,822	623
Chester	34,068	7,624	4,317	507	1,629	1,175	411
Colleton	38,264	8,659	4,928	581	1,817	1,321	471
Darlington	67,394	14,921	8,158	979	3,244	2,337	802
Edgefield	24,595	4,933	2,669	328	1,213	857	273
Greenville	379,616	78,392	44,573	5,164	18,657	13,232	4,364
Oconee	66,215	12,581	10,311	837	3,363	2,468	929
Pickens	110,757	20,746	12,616	1,365	5,599	3,906	1,231
Richland	320,677	64,134	31,475	4,292	15,754	10,900	3,259
Spartanburg	253,791	52,916	31,740	3,478	12,470	8,923	3,045
Union	29,881	5,907	4,670	394	1,499	1,093	410
Williamsburg	37,217	8,695	4,856	590	1,741	1,263	453
York	164,614	36,153	17,072	2,394	7,883	5,572	1,772
TOTAL	2,390,183	497,749	279,739	32,988	116,916	82,917	27,355

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

SOUTH CAROLINA

Spartanburg County Air Quality Trends



Each bar marks the Weighted Averages for Spartanburg County for each period.

Changes for 2003 Report

- The grades for Berkeley County and Charleston County improved from a D to a C.
- Colleton County's grade improved from a D to a B.
- The grades for Edgefield County, Oconee County, and York County improved from an F to a D.
- Union County's grade improved from an F to a C.
- Spartanburg County replaces Anderson County as having the worst record of high ozone days in the state.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Abbeville	13	0	0	4.3	F	8.3	F	7.3	F	4.7	F
Aiken	16	0	0	5.3	F	12.0	F	10.7	F	11.0	F
Anderson	25	2	0	9.3	F	14.0	F	14.3	F	10.2	F
Barnwell	14	0	0	4.7	F	8.3	F	7.3	F	5.3	F
Berkeley	4	0	0	1.3	C	2.3	D	1.7	C	1.3	C
Charleston	6	0	0	2.0	C	2.3	D	2.3	D	2.0	C
Cherokee	14	0	0	4.7	F	9.5	F	9.8	F	7.5	F
Chester	17	1	0	6.2	F	11.0	F	12.3	F	7.8	F
Colleton	2	0	0	0.7	B	2.3	D	2.0	C	*	*
Darlington	16	0	0	5.3	F	7.7	F	7.7	F	4.3	F
Edgefield	7	0	0	2.3	D	7.2	F	6.8	F	5.2	F
Greenville	*	*	*	*	*	*	*	*	*	*	*
Oconee	8	0	0	2.7	D	5.3	F	4.7	F	3.0	D
Pickens	19	0	0	6.3	F	6.0	F	6.0	F	4.0	F
Richland	27	0	0	9.0	F	12.3	F	11.7	F	8.7	F
Spartanburg	27	1	0	9.5	F	10.5	F	9.5	F	7.2	F
Union	4	1	0	1.8	C	4.2	F	4.2	F	3.0	D
Williamsburg	1	0	0	0.3	B	0.3	B	0.3	B	0.0	A
York	7	0	0	2.3	D	4.3	F	5.0	F	3.0	D

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of South Dakota

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At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Minnehaha	148,281	32,288	16,313	2,145	5,753	4,971	1,574
Pennington	88,565	19,450	10,451	1,303	3,431	3,008	1,002
TOTAL	236,846	51,738	26,764	3,449	9,183	7,979	2,577

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Minnehaha County Air Quality Trends



Changes for 2003 Report

- Sufficient data are now available to grade Minnehaha County an A.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Minnehaha	0	0	0	0.0	A	*	*	*	*	*	*
Pennington	*	*	*	*	*	*	*	*	*	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Tennessee

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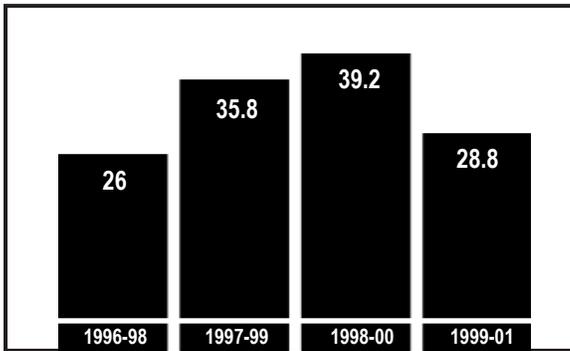
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Anderson	71,330	13,579	11,824	914	3,846	2,661	1,027
Blount	105,823	20,021	14,914	1,334	5,635	3,883	1,391
Davidson	569,891	106,769	63,444	6,993	29,539	20,056	6,244
Dickson	43,156	9,572	5,069	635	2,150	1,474	494
Dyer	37,279	7,939	5,001	531	1,902	1,307	463
Hamblen	58,128	11,255	7,719	748	3,058	2,104	735
Hamilton	307,896	59,422	42,609	3,951	16,242	11,165	3,951
Haywood	19,797	4,491	2,735	298	991	680	244
Jefferson	44,294	8,406	5,703	561	2,331	1,600	549
Knox	382,032	71,201	48,415	4,706	20,117	13,754	4,606
Lawrence	39,926	8,713	5,737	578	2,037	1,401	511
Meigs	11,086	2,294	1,280	154	567	391	133
Montgomery	134,768	32,757	10,499	2,120	6,259	4,207	1,143
Obion	32,450	6,262	4,928	421	1,729	1,193	444
Putnam	62,315	11,477	8,236	768	3,282	2,240	757
Roane	51,910	9,504	8,351	641	2,830	1,962	751
Rutherford	182,023	40,568	13,622	2,661	8,710	5,875	1,591
Sevier	71,170	13,568	8,995	905	3,756	2,588	893
Shelby	897,472	212,781	89,581	14,006	43,059	29,336	9,171
Sullivan	153,048	27,662	24,326	1,848	8,361	5,784	2,183
Sumner	130,449	28,119	13,916	1,899	6,504	4,463	1,454
Williamson	126,638	31,035	9,811	2,065	5,970	4,097	1,230
Wilson	88,809	19,432	8,580	1,289	4,407	3,022	952
TOTAL	3,621,690	756,827	415,295	50,024	183,283	125,245	40,917

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Sevier County Air Quality Trends



Each bar marks the Weighted Averages for Sevier County for each period.

Changes for 2003 Report

- Monitoring data are now available for Dyer County, Hamblen County, and Obion County.
- Monitoring data are no longer available for Coffee County.

High Ozone Days

County	Orange	1999-2001			1998-2000		1997-1999		1996-1998		
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Anderson	30	0	0	10.0	F	12.0	F	9.7	F	5.3	F
Blount	56	5	0	21.2	F	32.3	F	35.3	F	21.8	F
Davidson	24	0	0	8.0	F	11.8	F	13.5	F	9.7	F
Dickson	*	*	*	*	*	*	*	*	*	*	*
Dyer	*	*	*	*	*	*	*	*	*	*	*
Hamblen	*	*	*	*	*	*	*	*	*	*	*
Hamilton	25	5	0	10.8	F	19.7	F	18.2	F	15.2	F
Haywood	28	0	0	9.3	F	12.7	F	10.7	F	6.0	F
Jefferson	36	3	0	13.5	F	20.8	F	23.3	F	21.8	F
Knox	48	3	0	17.5	F	30.7	F	33.5	F	27.7	F
Lawrence	27	2	0	10.0	F	11.7	F	11.3	F	*	*
Meigs	*	*	*	*	*	*	*	*	*	*	*
Montgomery	*	*	*	*	*	*	*	*	*	*	*
Obion	*	*	*	*	*	*	*	*	*	*	*
Putnam	22	1	0	7.8	F	12.2	F	9.8	F	*	*
Roane	*	*	*	*	*	*	*	*	*	*	*
Rutherford	16	1	0	5.8	F	7.2	F	6.8	F	3.7	F
Sevier	79	5	0	28.8	F	39.2	F	35.8	F	26.0	F
Shelby	44	5	0	17.2	F	23.0	F	20.7	F	17.2	F
Sullivan	20	3	0	8.2	F	13.2	F	11.0	F	9.7	F
Sumner	44	3	0	16.2	F	23.5	F	25.7	F	21.8	F
Williamson	23	0	0	7.7	F	12.0	F	13.3	F	10.7	F
Wilson	20	1	0	7.2	F	8.5	F	7.5	F	5.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange**: Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red**: Unhealthy (0.105-0.124 ppm ozone), and **Purple**: Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg.**: The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Texas

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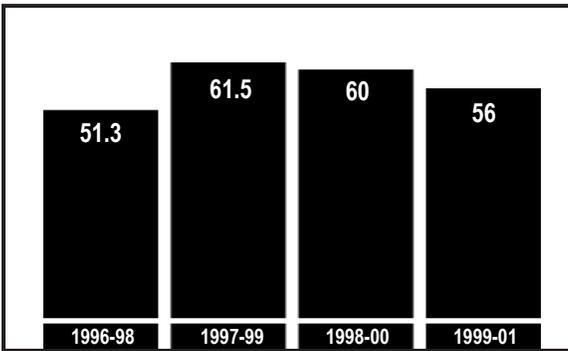
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bexar	1,392,931	331,205	144,398	21,925	60,917	45,271	14,248
Brazoria	241,767	57,333	21,330	3,821	10,563	7,815	2,348
Brewster	8,866	1,568	1,297	109	422	326	117
Cameron	335,227	94,820	37,375	6,265	13,560	10,192	3,400
Collin	491,675	121,201	25,852	7,814	21,448	15,266	3,819
Dallas	2,218,899	522,739	178,872	34,232	97,832	70,616	19,773
Denton	432,976	101,847	21,703	6,642	19,145	13,425	3,202
Ellis	111,360	27,663	10,286	1,861	4,754	3,546	1,099
El Paso	679,622	181,350	66,073	12,023	28,253	20,901	6,503
Galveston	250,158	55,443	27,765	3,698	11,211	8,504	2,800
Gregg	111,379	24,545	14,757	1,647	4,986	3,818	1,335
Harris	3,400,578	828,962	252,895	54,446	147,799	106,958	29,680
Harrison	62,110	13,460	8,134	922	2,778	2,142	755
Hidalgo	569,463	169,732	55,274	11,115	22,512	16,573	5,177
Hood	41,100	7,921	7,349	536	1,919	1,552	626

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
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- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Harris County Air Quality Trends



Each bar marks the Weighted Averages for Harris County for each period.

Changes for 2003 Report

- Monitoring data are now available for Harrison County.
- Cameron County's grade improved from a B to an A.
- El Paso County's grade improved from an F to a D.
- Hidalgo County's grade dropped from an A to a B.
- Victoria County's grade improved from a D to a C.
- Sufficient data are now available to grade Montgomery County an F.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Bexar	14	0	0	4.7	F	7.2	F	7.2	F	4.8	F
Brazoria	14	5	0	7.2	F	6.5	F	7.0	F	4.3	F
Brewster	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Cameron	0	0	0	0.0	A	0.3	B	0.3	B	0.3	B
Collin	46	3	1	17.5	F	20.8	F	20.8	F	17.7	F
Dallas	37	7	0	15.8	F	21.7	F	20.7	F	15.7	F
Denton	48	8	1	20.7	F	24.3	F	27.2	F	22.3	F
Ellis	35	2	0	12.7	F	16.7	F	11.5	F	5.0	F
El Paso	7	0	0	2.3	D	3.5	F	2.8	D	3.2	D
Galveston	27	5	4	14.2	F	19.2	F	23.2	F	13.8	F
Gregg	33	4	0	13.0	F	18.5	F	15.8	F	9.2	F
Harris	80	44	11	56.0	F	60.0	F	61.5	F	51.3	F
Harrison	*	*	*	*	*	*	*	*	*	*	*
Hidalgo	1	0	0	0.3	B	0.0	A	0.0	A	0.0	A
Hood	*	*	*	*	*	*	*	*	*	*	*

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Texas

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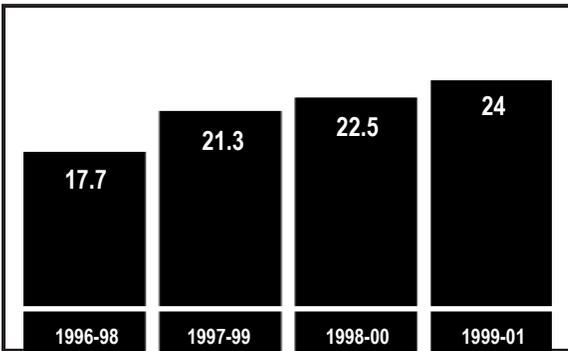
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Jefferson	252,051	53,588	34,269	3,612	11,409	8,719	3,054
Johnson	126,811	30,043	12,645	2,019	5,524	4,151	1,320
Kaufman	71,313	17,050	7,586	1,152	3,088	2,340	768
Marion	10,941	2,007	2,101	135	519	426	178
Montgomery	293,768	72,060	25,548	4,796	12,672	9,478	2,905
Nueces	313,645	73,535	35,005	4,928	13,727	10,344	3,394
Orange	84,966	18,856	10,776	1,282	3,778	2,910	1,017
Parker	88,495	19,965	9,318	1,347	3,925	2,986	978
Rockwall	43,080	10,737	3,686	716	1,844	1,381	424
Smith	174,706	38,414	24,602	2,571	7,835	6,057	2,183
Tarrant	1,446,219	342,240	120,585	22,478	63,595	46,384	13,374
Travis	812,280	163,203	54,824	10,670	37,873	26,634	6,693
Victoria	84,088	20,164	10,059	1,355	3,643	2,779	949
Webb	193,117	59,285	14,656	3,863	7,534	5,422	1,530
TOTAL	14,343,591	3,460,936	1,239,020	227,983	625,066	456,915	133,650

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Tarrant County Air Quality Trends



Each bar marks the Weighted Averages for Tarrant County for each period.

Changes for 2003 Report

- Monitoring data are now available for Harrison County.
- Cameron County's grade improved from a B to an A.
- El Paso County's grade improved from an F to a D.
- Hidalgo County's grade dropped from an A to a B.
- Victoria County's grade improved from a D to a C.
- Sufficient data are now available to grade Montgomery County with an F.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Jefferson	18	2	0	7.0	F	9.7	F	8.7	F	9.7	F
Johnson	*	*	*	*	*	*	*	*	*	*	*
Kaufman	*	*	*	*	*	*	*	*	*	*	*
Marion	19	1	0	6.8	F	6.8	F	*	*	*	*
Montgomery	26	2	0	9.7	F	*	*	*	*	*	*
Nueces	10	0	0	3.3	F	4.0	F	3.3	F	2.7	D
Orange	5	0	0	1.7	C	2.0	C	3.0	D	3.7	F
Parker	*	*	*	*	*	*	*	*	*	*	*
Rockwall	*	*	*	*	*	*	*	*	*	*	*
Smith	28	1	0	9.8	F	12.2	F	12.2	F	6.3	F
Tarrant	57	6	3	24.0	F	22.5	F	21.3	F	17.7	F
Travis	31	0	0	10.3	F	12.0	F	10.3	F	4.0	F
Victoria	5	0	0	1.7	C	2.3	D	2.0	C	0.7	B
Webb	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

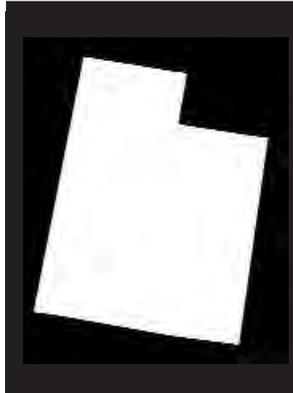
(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Utah

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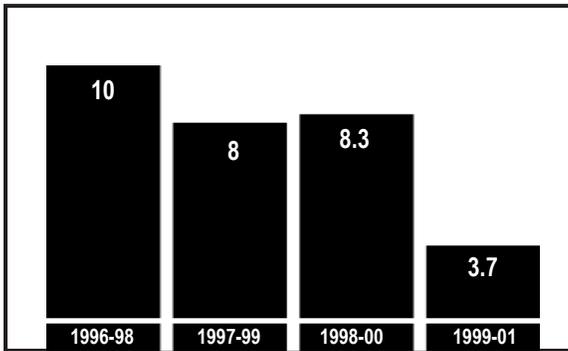
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Box Elder	42,745	12,558	4,443	853	1,908	1,254	414
Cache	91,391	23,763	6,539	1,581	4,384	2,679	686
Davis	238,994	68,962	17,540	4,643	10,931	6,854	1,931
Salt Lake	898,387	226,824	72,680	15,129	43,976	27,618	7,829
San Juan	14,413	4,730	1,214	313	615	396	123
Utah	368,536	105,639	23,503	6,939	16,980	10,289	2,541
Weber	196,533	50,445	20,280	3,369	9,476	6,138	1,936
Total	1,850,999	492,921	146,199	32,829	88,269	55,229	15,460

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Salt Lake County Air Quality Trends



Each bar marks the Weighted Averages for Salt Lake County for each period.

Changes for 2003 Report

- Monitoring data are now available for Box Elder County.
- The grades for Davis County and Utah County improved from an F to a C.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Box Elder	*	*	*	*	*	*	*	*	*	*	*
Cache	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Davis	4	1	0	1.8	C	4.0	F	3.7	F	4.3	F
Salt Lake	8	2	0	3.7	F	8.3	F	8.0	F	10.0	F
San Juan	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Utah	3	0	0	1.0	C	3.7	F	3.7	F	3.0	D
Weber	3	0	0	1.0	C	2.0	C	2.3	D	2.3	D

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Vermont

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At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bennington	36,994	7,113	6,167	484	2,456	1,376	535
Chittenden	146,571	28,692	13,780	1,909	10,114	5,036	1,493
Total	183,565	35,805	19,947	2,393	12,571	6,412	2,028

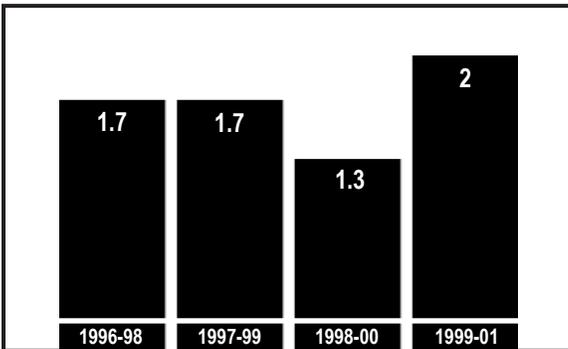
Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Bennington County Air Quality Trends

Changes for 2003 Report

■ There were no changes from the 2002 report.



Each bar marks the Weighted Averages for Bennington County for each period.

High Ozone Days

County	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Bennington	6	0	0	2.0	C	1.3	C	1.7	C	1.7	C
Chittenden	1	0	0	0.3	B	0.3	B	0.3	B	0.3	B

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Virginia

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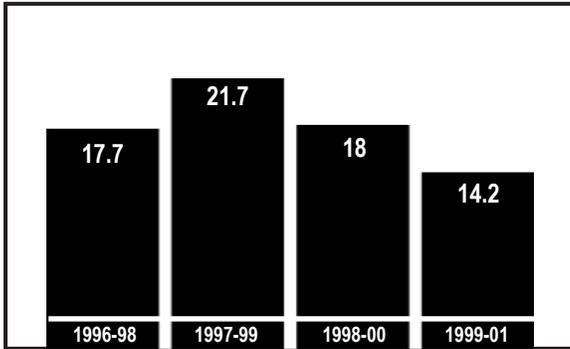
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Arlington	189,453	26,773	17,762	1,728	10,364	6,965	1,942
Caroline	22,121	4,542	2,857	303	1,076	787	275
Charles City	6,926	1,237	874	85	347	257	90
Chesterfield	259,903	60,250	21,007	4,061	12,080	8,545	2,572
Fairfax	969,749	206,401	76,818	13,618	46,928	32,910	9,654
Fauquier	55,139	12,201	5,789	818	2,606	1,892	625
Frederick	59,209	13,008	6,303	863	2,826	2,023	658
Hanover	86,320	19,229	9,159	1,292	4,073	2,937	966
Henrico	262,300	54,652	32,601	3,578	12,840	9,158	3,079
Loudoun	169,599	44,268	9,538	2,796	7,786	5,196	1,325
Madison	12,520	2,440	1,883	167	612	460	172
Page	23,177	4,364	3,644	294	1,153	860	323
Prince William	280,813	72,050	13,473	4,725	12,765	8,518	2,110
Roanoke	85,778	16,045	13,645	1,078	4,266	3,225	1,232
Rockbridge	20,808	3,741	3,259	256	1,042	784	296
Stafford	92,446	24,363	5,474	1,613	4,125	2,803	749
Wythe	27,599	4,917	4,363	333	1,392	1,038	389
Alexandria city	128,283	18,637	11,605	1,191	6,991	4,695	1,297
Hampton city	146,437	29,624	15,143	1,963	7,244	4,993	1,522
Suffolk city	63,677	14,917	7,268	981	2,980	2,136	713
TOTAL	2,962,257	633,659	262,465	41,743	143,497	100,181	29,989

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Fairfax County Air Quality Trends



Each bar marks the Weighted Averages for Fairfax County for each period.

Changes for 2003 Report

- Wythe County's grade improved from an F to a D.
- Sufficient data are now available to grade Page County with an F and Rockbridge County with a C.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Arlington	35	1	0	12.2	F	11.5	F	16.7	F	10.2	F
Caroline	19	0	0	6.3	F	8.3	F	10.0	F	6.0	F
Charles City	19	1	1	7.5	F	11.5	F	16.3	F	11.8	F
Chesterfield	19	0	0	6.3	F	6.5	F	8.5	F	5.5	F
Fairfax	38	3	0	14.2	F	18.0	F	21.7	F	17.7	F
Fauquier	11	0	0	3.7	F	7.3	F	8.0	F	5.7	F
Frederick	12	0	0	4.0	F	5.8	F	6.5	F	5.2	F
Hanover	*	*	*	*	*	*	*	19.3	F	12.8	F
Henrico	26	2	0	9.7	F	10.8	F	12.8	F	8.0	F
Loudoun	16	1	0	5.8	F	8.7	F	*	*	*	*
Madison	24	0	0	8.0	F	13.3	F	14.7	F	10.0	F
Page	12	0	0	4.0	F	*	*	*	*	*	*
Prince William	17	0	0	5.7	F	8.3	F	9.0	F	6.7	F
Roanoke	13	0	0	4.3	F	7.2	F	7.2	F	5.2	F
Rockbridge	3	0	0	1.0	C	*	*	*	*	*	*
Stafford	21	2	0	8.0	F	9.7	F	12.0	F	7.7	F
Wythe	7	0	0	2.3	D	4.0	F	3.7	F	2.3	D
Alexandria City	18	0	0	6.0	F	7.3	F	8.7	F	5.7	F
Hampton City	16	2	0	6.3	F	8.3	F	11.3	F	7.7	F
Suffolk City	16	2	0	6.3	F	8.8	F	12.5	F	9.3	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange**: Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red**: Unhealthy (0.105-0.124 ppm ozone), and **Purple**: Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg**: The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



American Lung Association of Washington

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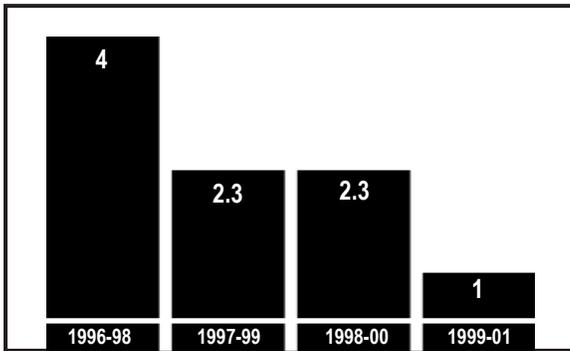
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Clallam	64,525	11,359	13,727	784	3,808	2,542	1,099
Clark	345,238	83,161	32,808	5,474	18,727	11,287	3,530
Cowlitz	92,948	20,604	12,368	1,377	5,166	3,233	1,156
King	1,737,034	326,475	181,772	21,603	102,255	61,285	19,004
Klickitat	19,161	4,200	2,644	287	1,063	678	252
Lewis	68,600	14,594	10,667	1,007	3,821	2,443	936
Pierce	700,820	158,739	71,620	10,538	38,735	23,279	7,317
Skagit	102,979	22,172	15,034	1,498	5,754	3,628	1,340
Spokane	417,939	88,388	51,949	5,945	23,544	14,450	4,909
Thurston	207,355	42,582	23,629	2,905	11,773	7,226	2,405
Whatcom	166,814	33,229	19,400	2,226	9,603	5,828	1,902
TOTAL	3,923,413	805,503	435,618	53,642	224,249	135,879	43,851

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

King County Air Quality Trends



Each bar marks the Weighted Averages for King County for each period.

Changes for 2003 Report

- King County's grade improved from a D to a C.
- Pierce County's grade improved from a C to an B.
- Thurston County's grade improved from a B to an A.
- Sufficient data are no longer available to grade Lewis County.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Clallam	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Clark	0	0	0	0.0	A	0.0	A	0.0	A	1.0	C
Cowlitz	*	*	*	*	*	*	*	*	*	*	*
King	3	0	0	1.0	C	2.3	D	2.3	D	4.0	F
Klickitat	0	0	0	0.0	A	0.0	A	*	*	*	*
Lewis	*	*	*	*	*	0.0	A	*	*	*	*
Pierce	1	0	0	0.3	B	1.8	C	1.8	C	1.8	C
Skagit	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Spokane	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A
Thurston	0	0	0	0.0	A	0.3	B	*	*	*	*
Whatcom	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.


American Lung Association of West Virginia

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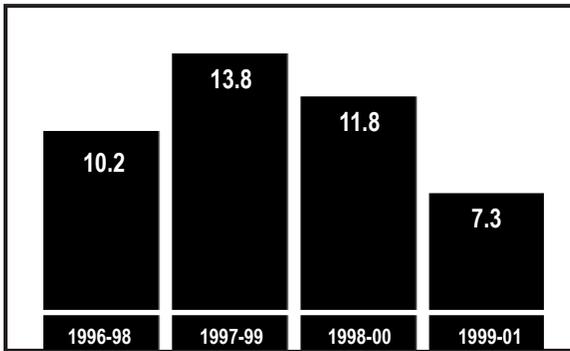
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Berkeley	75,905	16,193	8,466	1,080	5,292	2,613	857
Cabell	96,784	16,030	15,499	1,073	7,228	3,667	1,344
Greenbrier	34,453	6,099	6,101	412	2,512	1,325	525
Hancock	32,667	5,591	6,017	376	2,406	1,269	507
Kanawha	200,073	35,201	33,036	2,358	14,681	7,599	2,890
Monongalia	81,866	12,357	8,765	825	6,307	2,970	873
Ohio	47,427	8,227	8,900	558	3,472	1,821	729
Wood	87,986	16,628	13,608	1,119	6,324	3,262	1,221
TOTAL	657,161	116,326	100,392	7,801	48,220	24,527	8,946

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Cabell County Air Quality Trends



Each bar marks the Weighted Averages for Cabell County for each period.

Changes for 2003 Report

- Monitoring data are now available for Berkeley County.
- Greenbrier County's grade improved from an F to a C.
- Cabell County replaced Wood County as having the worst record of high ozone days in the state

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Berkeley	*	*	*	*	*	*	*	*	*	*	*
Cabell	22	0	0	7.3	F	11.8	F	13.8	F	10.2	F
Greenbrier	5	0	0	1.7	C	5.2	F	6.7	F	6.7	F
Hancock	10	0	0	3.3	F	4.3	F	4.7	F	3.3	F
Kanawha	16	3	0	6.8	F	10.2	F	9.2	F	4.7	F
Monongalia	*	*	*	*	*	*	*	*	*	*	*
Ohio	15	0	0	5.0	F	4.7	F	5.0	F	4.0	F
Wood	18	1	0	6.5	F	12.5	F	12.5	F	9.7	F

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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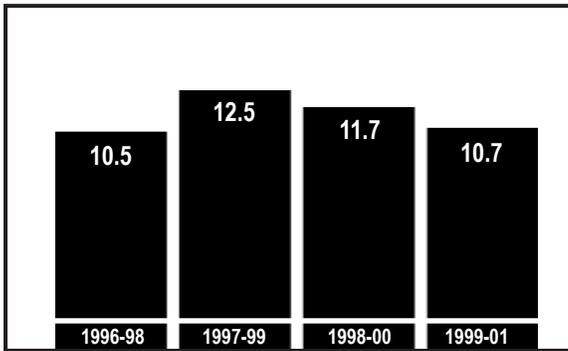
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Brown	226,778	49,140	24,214	3,270	13,464	7,629	2,405
Columbia	52,468	10,772	7,567	731	3,053	1,865	678
Dane	426,526	80,244	39,869	5,323	26,862	14,752	4,304
Dodge	85,897	17,193	11,986	1,176	5,084	3,029	1,069
Door	27,961	4,940	5,235	341	1,634	1,084	444
Florence	5,088	931	889	64	296	193	77
Fond du Lac	97,296	19,760	13,942	1,354	5,695	3,437	1,237
Green	33,647	7,281	4,946	493	1,919	1,180	436
Jefferson	74,021	15,270	9,359	1,032	4,357	2,590	888
Kenosha	149,577	33,833	17,169	2,240	8,705	5,008	1,639
Kewaunee	20,187	4,195	3,077	289	1,160	715	267
Manitowoc	82,887	17,071	13,003	1,167	4,775	2,963	1,119
Marathon	125,834	27,539	16,321	1,864	7,232	4,324	1,511
Milwaukee	940,164	207,587	121,685	13,705	55,058	31,981	10,893
Oneida	36,776	6,618	6,884	454	2,150	1,416	578

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Kenosha County Air Quality Trends



Each bar marks the Weighted Averages for Kenosha County for each period.

Changes for 2003 Report

- Monitoring data are no longer available for Polk County.
- The grades for Brown County, Outagamie County, and Waukesha County dropped from a D to an F.
- The grades for Columbia County and Washington County dropped from a C to a D.
- Oneida County's grade improved from a C to a B.
- St. Croix County's grade dropped from an A to a B.
- Winnebago County's grade dropped from a C to an F.
- Sufficient data are now available to grade Vilas County with a B.
- Sheboygan County replaces Kenosha County as having the worst record of high ozone days in the state.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Brown	11	0	0	3.7	F	2.7	D	2.7	D	3.0	D
Columbia	7	0	0	2.3	D	2.0	C	2.0	C	1.3	C
Dane	6	0	0	2.0	C	1.7	C	2.0	C	1.0	C
Dodge	8	0	0	2.7	D	2.3	D	2.7	D	1.7	C
Door	25	3	0	9.8	F	8.7	F	9.8	F	6.8	F
Florence	6	0	0	2.0	C	2.0	C	2.0	C	0.7	B
Fond du Lac	9	0	0	3.0	D	2.3	D	2.3	D	1.3	C
Green	*	*	*	*	*	*	*	*	*	*	*
Jefferson	14	0	0	4.7	F	4.0	F	3.3	F	1.3	C
Kenosha	29	2	0	10.7	F	11.7	F	12.5	F	10.5	F
Kewaunee	18	0	0	6.0	F	5.0	F	6.0	F	4.2	F
Manitowoc	23	1	0	8.2	F	8.7	F	11.5	F	11.3	F
Marathon	4	0	0	1.3	C	1.7	C	1.3	C	0.3	B
Milwaukee	20	2	0	7.7	F	7.3	F	8.5	F	7.2	F
Oneida	2	0	0	0.7	B	1.0	C	1.0	C	0.3	B

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

(8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).

(9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.

(10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.

(11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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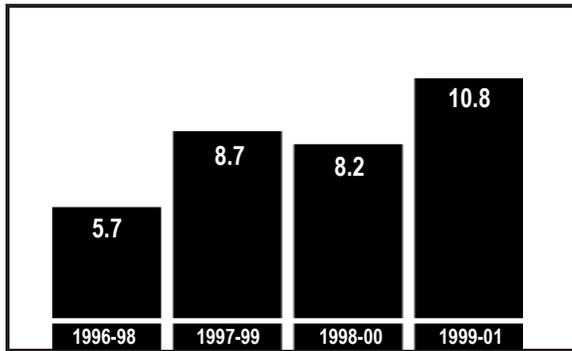
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Outagamie	160,971	36,784	17,585	2,462	9,315	5,328	1,715
Ozaukee	82,317	17,990	10,357	1,213	4,677	2,880	1,019
Polk	39,363	8,775	5,768	576	2,182	1,294	462
Racine	188,831	41,956	23,233	2,818	10,862	6,440	2,203
Rock	152,307	33,551	19,395	2,232	8,813	5,235	1,807
St. Croix	63,155	14,468	6,221	1,591	3,644	2,080	651
Sauk	55,225	11,827	7,993	974	3,180	1,941	709
Sheboygan	112,646	23,521	15,732	577	6,572	3,949	1,408
Vernon	28,056	6,248	4,769	426	1,548	997	398
Vilas	21,033	3,501	4,794	240	1,223	854	380
Walworth	93,759	18,690	11,934	1,253	5,644	3,290	1,109
Washington	117,493	25,881	13,212	1,733	6,809	4,004	1,326
Waukesha	360,767	77,901	43,434	5,248	20,764	12,545	4,319
Winnebago	156,763	30,760	19,663	2,065	9,509	5,503	1,833
TOTAL	4,017,793	854,227	500,236	56,909	236,189	138,506	46,886

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
- (3) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had an asthma attack during 2000 based on national rates (NHIS) applied to county population estimates (US Census).
- (4) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2001 based on state rates (BRFSS) applied to county population estimates (US Census).
- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Sheboygan County Air Quality Trends



Each bar marks the Weighted Averages for Sheboygan County for each period.

Changes for 2003 Report

- Monitoring data are no longer available for Polk County.
- The grades for Brown County, Outagamie County, and Waukesha County dropped from a D to an F.
- The grades for Columbia County and Washington County dropped from a C to a D.
- Oneida County's grade improved from a C to a B.
- St. Croix County's grade dropped from an A to a B.
- Winnebago County's grade dropped from a C to an F.
- Sufficient data are now available to grade Vilas County with a B.
- Sheboygan County replaces Kenosha County as having the worst record of high ozone days in the state.

High Ozone Days

County	1999-2001					1998-2000		1997-1999		1996-1998	
	Orange	Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Outagamie	10	0	0	3.3	F	2.3	D	3.0	D	1.3	C
Ozaukee	29	2	0	10.7	F	10.3	F	10.3	F	6.8	F
Polk	*	*	*	*	*	*	*	*	*	0.3	B
Racine	12	1	0	4.5	F	3.7	F	5.2	F	4.5	F
Rock	14	0	0	4.7	F	5.0	F	5.3	F	4.0	F
St. Croix	1	0	0	0.3	B	0.0	A	0.0	A	0.0	A
Sauk	4	0	0	1.3	C	1.7	C	1.7	C	0.3	B
Sheboygan	25	5	0	10.8	F	8.2	F	8.7	F	5.7	F
Vernon	1	0	0	0.3	B	0.7	B	0.7	B	0.3	B
Vilas	2	0	0	0.7	B	*	*	*	*	*	*
Walworth	10	1	0	3.8	F	3.5	F	4.2	F	2.3	D
Washington	8	0	0	2.7	D	2.0	C	2.7	D	1.7	C
Waukesha	10	0	0	3.3	F	2.7	D	3.7	F	2.0	C
Winnebago	10	0	0	3.3	F	2.0	C	2.3	D	0.7	B

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
 (7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
 (8) **Orange:** Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red:** Unhealthy (0.105-0.124 ppm ozone), and **Purple:** Very Unhealthy (0.125-0.374 ppm ozone).
 (9) **Wgt. Avg:** The weighted average was derived by adding the three years of individual level data (1999-2001), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average.
 (10) * indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis.
 (11) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.



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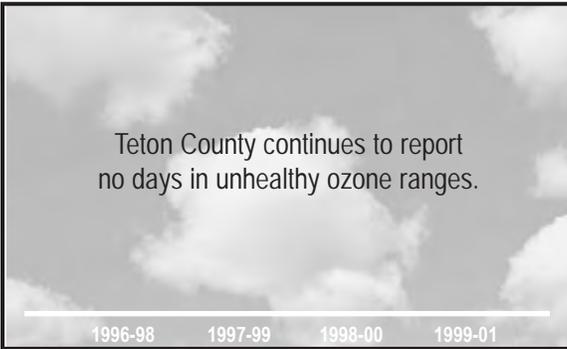
At-Risk Groups

County	Total Pop	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Teton	18,251	2,985	1,264	201	1,227	649	174
TOTAL	18,251	2,985	1,264	201	1,227	649	174

Notes

- (1) Total represents the at-risk populations in counties/cities with ozone monitors- it does not represent the entire state's sensitive populations.
- (2) Those 14 & under and 65 & over are extra sensitive to ozone and are therefore included. They should not be used as population denominators for disease estimates.
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- (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2000 based on national rates (NHIS) applied to county population estimates (US Census).

Teton County Air Quality Trends



Changes for 2003 Report

- There were no changes in grades or monitors from the 2002 report.

High Ozone Days

County	Orange	1999-2001				1998-2000		1997-1999		1996-1998	
		Red	Purple	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade	Wgt. Avg	Grade
Teton	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A

(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).

(7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

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For nearly 100 years, the American Lung Association and Lung Association affiliates throughout the United States have worked together in the fight against lung disease.

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