



STATE OF THE AIR: 2002

TABLE OF CONTENTS

INTRODUCTION	1
EXECUTIVE SUMMARY	2
NATIONWIDE AND REGIONAL ANALYSIS	3
Ozone Coast-to-Coast---and in Between	3
California’s Air Woes Continue	3
The Cleanest Cities for Ozone	4
GRADING THE RISK	
Table 1: Estimated Populations at Risk by Grading Level, 2000-2002.....	5
Table 2: Comparison of Number of Counties and High Ozone Days, 2000-2002	6
Table 3: People at Risk in America’s 25 Most Ozone-Polluted Cities.....	7
Table 4: People at Risk in America’s 25 Most Ozone-Polluted Counties.....	8
Table 5: Counties with the Worst Ozone Air Pollution in Each State.....	9
Table 6a: Cities Deleted from the Lists of the 25 Most Ozone-Polluted Cities and Counties Between 2001 and 2002.....	11
Table 6b: Counties Deleted from the Lists of the 25 Most Ozone-Polluted Cities and Counties Between 2001 and 2002.....	11
Table 7: Metropolitan Areas with the Least Ozone Air Pollution	11
Table 8: Counties with the No Monitored Ozone Air Pollution in Unhealthy Ranges in Each State.....	12
Table 9: Breakdown of High Ozone Days Among Counties with Monitoring Sites.....	14
Table 10: State Comparisons, 2001-2002.....	15
THE HEALTH EFFECTS OF OZONE	18
The Danger of Ozone	18
Children are Vulnerable	18
The Elderly at Risk	19
Ozone and the Air Quality Index	20
FIXING THE NATION’S OZONE PROBLEM	
Overview of Ozone Sources	21
Threats to the Clean Air Act	21
Delays in Enforcing Standards.....	21
Proposed Rollbacks of Protections	22
Other Pollution Control Strategies	23
Power Plants.....	23
New Diesel Regulations.....	24
Nonroad Heavy-Duty Engines.....	25
ENDNOTES	26
APPENDIX A: DESCRIPTION OF METHODOLOGY	27
APPENDIX B: STATE DATA TABLES	31

STATE OF THE AIR: 2002

INTRODUCTION

More than 142 million Americans live in areas where the air they breathe puts them at risk. This finding from the American Lung Association's *State of the Air:2002* report means that 75% of Americans who live in areas with monitors are breathing in unhealthy amounts of ozone, a powerful respiratory irritant, which is the primary ingredient in the smog that regularly blankets many urban areas during the summer months. A large percentage of those at greatest risk of breathing problems—children, the elderly, and those with chronic lung disease—are living in counties with the highest levels of ozone.

Concern for the health of these millions of Americans drives the American Lung Association to insist that all of the provisions of our nation's Clean Air Act be enforced—and that none of them be weakened. Five years ago, the U.S. Environmental Protection Agency announced tighter standards for ozone and particulate air pollution, in order to prevent thousands of premature deaths, tens of thousands of hospitalizations and other illnesses for respiratory and cardiovascular causes, and millions of days of missed work and school. And yet in the past five years these stricter standards have not been enforced. They have not protected the lungs of a single adult or child. Even more worrisome are proposals to roll back existing provisions of the Clean Air Act, which would result in thousands of extra tons of pollution in the air, risking thousands of lives as a result.

In 2000, the American Lung Association initiated its *State of the Air* annual assessment to provide citizens with easy-to-understand air pollution summaries of the quality of the air in their communities that are based on concrete data and sound science. Cities and counties are assigned grades ranging from "A" through "F" based on how often their air quality crosses into the "unhealthful" categories of the U.S. Environmental Protection Agency'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, 80 parts per billion 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 specific areas, and do not reflect an assessment of efforts to implement controls that improve air quality.

EXECUTIVE SUMMARY

State of the Air: 2000 focused on the years 1996-1998; *State of the Air: 2001* looked at 1997-1999, and *State of the Air: 2002* includes data from 1998-2000. 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.

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 to 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, with a 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 three years of quality-controlled samples had not yet been returned.

State of the Air: 2002 finds that ozone continues to be a very serious problem in the United States:

- Three-quarters of the nation's population who reside in areas with ozone monitors—a total of 142,668,846 Americans—are breathing in unhealthy amounts of ozone pollution. This year's report includes data from an additional 18 counties, and finds an increase of 875,000 Americans living in counties that received an "F" rating compared with last year's report.
- An estimated 58% of monitored counties received an "F" rating for the second year in a row.
- The overall number of high-ozone days in unhealthy ranges dipped 3.5% from 2001 to 2002 in monitored counties, but the number jumped 18.5% between 2000 and 2002.
- Of the 10.2 million American adults with asthma who live in counties with ozone monitors, 7.6 million—more than 70%—lived in counties that received an "F" rating in ozone pollution. Of the 2.6 million children living in counties with monitors who had an asthma attack last year, 1.9 million—more than 70%—live in counties receiving an "F" rating.
- Of the almost 2 million Americans with emphysema living in those monitored counties, 1.5 million live in counties with an "F" rating in ozone pollution, while of the 6.3 million Americans with chronic bronchitis, 4.7 million live in "F"-rated counties.
- Of the nation's over-65 population who live in these monitored counties, almost three quarters live in counties that received an "F" rating in ozone pollution.

NATIONWIDE AND REGIONAL ANALYSIS

In this third year of the report, the scores show remarkable, if unfortunate, consistency. California locales continued to top the list of the most ozone-polluted cities and counties (see section below). There have been some changes since last year's report; however, those changes come from shifting in the relative positions among cities. Four cities and five counties came off the list of the 25 most ozone-polluted between 2001 and 2002. The metropolitan areas of Pittsburgh and Lancaster, Pennsylvania; Richmond-Petersburg, Virginia, and Louisville, Kentucky, as well as the counties of Camden, New Jersey; Imperial, California, Charles and Prince George's, Maryland; and Denton, Texas, all dropped off the roster. However, those localities have nothing to cheer about: they all continued to receive an "F" grade.

Four counties on the list of the 25 most ozone-polluted counties this year were not on the list last year: DeKalb and Fayette Counties, Georgia; Sacramento, California; and Maricopa, Arizona. Among the 25 most ozone-polluted cities this year, two—Birmingham, Alabama, and Macon, Georgia—were not on last year's list (Macon, at number 26 last year, missed this dubious distinction by just one spot).

Ozone Coast to Coast—and in Between

Not surprisingly, big cities on both coasts are among the 25 most ozone-polluted cities, including Los Angeles, Washington, and New York. But many big, medium and smaller-sized cities in between are also subjected to very dirty air. The Houston metropolitan area is the fifth most ozone-polluted city, for the third time in a row. Atlanta is number six for the second year. Some medium and smaller cities suffer more ozone pollution than the nation's largest city; Phoenix, Arizona; Knoxville, Tennessee; and Charlotte, North Carolina all had higher levels of ozone than New York City. Nashville and Chattanooga, Tennessee; Baton Rouge, Louisiana; Birmingham, Alabama; Raleigh-Durham-Chapel Hill, North Carolina; and Macon, Georgia are among the others on the list.

Some cities produce their own high levels of ozone pollution from local traffic and industry, while many also suffer from pollution blown in from other communities or large power plants outside their region. Even some suburban or rural areas without major industry or large populations are subjected to pollution blown in from other communities.

California's Air Woes Continue

For the third straight year, the top four most ozone-polluted metropolitan areas were in California: Los Angeles-Riverside-Orange County; Bakersfield; Fresno; and Visalia-Tulare-Porterville. The state also has the five most ozone-polluted counties: San Bernadino has been number 1 three years in a row; Kern, comes in at number 2 this year, after claiming the number 3 spot for the previous two years; Fresno moves up to number 3 after two years as the fourth-most polluted county, Riverside is number 4, after two years as the second-most polluted county; and Tulare, number five for the second year in a row. There is one bright spot on the California

horizon: Salinas, which continues to rank among the least ozone-polluted cities in the nation. (See the section below.)

The Cleanest Cities for Ozone

With the exception of Des Moines, Iowa, which dropped off the list, the rest of the metropolitan areas with the least ozone air pollution last year continued to claim that distinction. In the following metropolitan areas, all of the counties with monitoring sites received a grade of A (they are listed in alphabetical order; not ranking): Bellingham, Washington; Colorado Springs, Colorado; Duluth-Superior, Minnesota/Wisconsin; Fargo-Moorhead, North Dakota/Minnesota; Flagstaff, Arizona/Utah; Honolulu, Hawaii; Laredo, Texas; Lincoln, Nebraska; McAllen-Edinburg-Mission, Texas; Salinas, California; and Spokane, Washington.

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

		Chronic Diseases				Age Groups			Total Population	Number of Counties	Number of High Ozone Days		
		Adult Asthma	Pediatric Asthma	Chronic Bronchitis	Emphysema	Under 14	Over 65	Over 65			Orange	Red	Purple
Grade A (0.0)	2000	(1)	(1)	(1)	(1)	2,296,548	1,251,960	10,477,773	62	0	0	0	
	2001	(2)	116,835	284,546	93,808	1,824,279	1,015,492	8,453,938	55	0	0	0	
	2002	465,195	115,930	280,766	88,531	1,823,326	1,027,969	8,542,407	56	0	0	0	
Grade B (0.3-0.9)	2000	(1)	(1)	(1)	(1)	1,865,757	1,179,695	8,582,029	48	68	0	0	
	2001	(2)	131,951	312,045	102,872	2,059,705	1,096,632	9,343,164	41	57	1	0	
	2002	425,752	111,256	254,036	79,264	1,745,726	907,336	7,856,880	39	51	0	0	
Grade C (1.0-2.0)	2000	(1)	(1)	(1)	(1)	2,692,794	1,824,144	12,856,894	59	256	3	0	
	2001	(2)	134,775	351,792	115,972	2,112,737	1,514,827	10,269,797	58	254	4	0	
	2002	600,264	149,867	393,101	135,050	2,347,471	1,683,397	11,588,825	61	266	5	0	
Grade D (2.1-3.2)	2000	(1)	(1)	(1)	(1)	2,206,390	1,453,631	10,459,616	54	414	12	0	
	2001	(2)	132,024	333,759	110,029	2,067,946	1,334,036	9,821,670	41	314	12	0	
	2002	600,649	138,900	353,148	114,780	2,192,859	1,376,837	10,578,028	48	357	10	0	
Grade F (3.3+)	2000	(1)	(1)	(1)	(1)	29,045,221	15,944,372	132,494,679	333	9,519	1,335	219	
	2001	(2)	1,944,477	4,785,438	1,577,613	30,680,052	17,120,347	141,793,488	382	12,180	1,488	209	
	2002	7,661,492	1,936,210	4,684,114	1,474,141	30,742,058	17,191,083	142,668,846	391	11,952	1,373	182	
National Population	2000	(1)	(1)	(1)	(1)	40,343,997	22,992,964	185,164,054	678	10,257	1,350	219	
	2001	(2)	2,567,435	6,337,115	2,089,149	40,423,987	23,103,750	187,627,908	660	12,805	1,505	209	
	2002	10,213,597	2,575,376	6,272,713	1,992,034	40,779,165	23,362,199	190,463,367	678	12,626	1,388	182	

(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 their 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. Similarly, pediatric and adult asthma disease estimates for 2002 **CANNOT BE SUMMED**, also because they represent different types of prevalence estimates. The 2002 pediatric asthma disease estimates use the National Health Interview Survey as well.

Table 2: Comparison of Number of Counties and High Ozone Days, 2000-2002

Grade	Counties						High Ozone Days in Unhealthy Ranges									
	2000			2001			2000			2001			2002			
	Number	%		Number	%		Number	%		Number	%		Number	%		
*	122	18.0		83	12.6		83	12.2		*	*	*	*	*	*	*
A	62	9.1		55	8.3		56	8.3		0	0	0	0	0	0	0
B	48	7.1		41	6.2		39	5.8		68	58	51	-12.1	-25.0		
C	59	8.7		58	8.8		61	9.0		259	258	271	5.0	4.6		
D	54	8.0		41	6.2		48	7.1		426	326	367	12.6	-13.8		
F	333	49.1		382	57.9		391	57.7		11,073	13,877	13,325	-4.0	20.3		
TOTAL	678	100.0		660	100.0		678	100.0		11,826	14,519	14,014	-3.5	18.5		

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

Table 3: People at Risk In America's 25 Most Ozone-Polluted Cities

Metropolitan Statistical Areas	2002		2001		2000		Total		14 and		65 and		Pediatric		Adult		Chronic	
	Rank	Rank	Rank	Rank	Rank	Rank	Population	Under	Over	Asthma	Over	Asthma	Over	Asthma	Bronchitis	Asthma	Bronchitis	Emphysema
Los Angeles-Riverside-Orange County, CA, CMSA	1	1	1	1	1	1	16,036,587	3,738,291	1,660,426	232,942	853,412	505,220	147,267					
Bakersfield, CA, MSA	2	2	2	2	2	2	642,495	176,191	60,497	10,792	32,057	19,015	5,473					
Fresno, CA, MSA	3	3	3	3	3	3	879,829	241,605	93,868	14,852	43,910	26,188	7,982					
Visalia-Tulare-Porterville, CA, MSA	4	4	4	4	4	4	358,470	106,677	35,631	6,571	17,123	10,260	3,115					
Houston-Galveston-Brazoria, TX, CMSA	5	5	5	5	5	5	4,493,741	1,084,166	357,283	68,232	207,826	138,053	36,856					
Atlanta, GA, MSA	6	6	6	6	6	6	3,857,097	841,030	299,343	52,690	178,391	122,543	31,634					
Merced, CA, MSA	7	13	10	10	10	10	200,746	61,578	17,976	3,775	9,484	5,616	1,625					
Knoxville, TN, MSA	8	9	12	12	12	12	672,087	124,896	89,807	7,934	38,070	23,339	7,672					
Charlotte-Gastonia-Rock Hill, NC-SC, MSA	9	8	8	8	8	8	1,417,217	309,105	150,696	19,324	72,764	46,221	13,867					
Sacramento-Yolo, CA, CMSA	10	12	11	11	11	11	1,741,002	396,483	199,682	24,551	92,901	56,201	17,369					
Washington-Baltimore, DC-MD-VA-WV, PMSA	11	7	7	7	7	7	7,359,044	1,517,953	774,031	95,316	406,241	243,053	71,529					
Phoenix-Mesa, AZ, MSA	12	17	19	19	19	19	3,013,696	709,839	368,305	44,252	187,771	96,449	30,977					
Raleigh-Durham-Chapel Hill, NC, MSA	13	10	17	17	17	17	1,105,535	229,660	101,497	14,224	57,545	35,996	9,775					
Philadelphia-Willington-Atlantic City, PA-NJ-DE-MD, CMSA	14	10	13	13	13	13	5,999,034	1,262,386	833,773	79,426	292,422	201,167	67,805					
San Diego, CA, MSA	15	17	6	6	6	6	2,820,844	615,339	323,420	38,207	154,524	91,318	27,361					
Dallas-Fort Worth, TX, CMSA	16	14	14	14	14	14	4,909,523	1,129,046	410,351	70,824	232,174	154,155	41,681					
Baton Rouge, LA, MSA	17	24	N/A	N/A	N/A	N/A	578,946	127,604	54,990	8,218	21,429	18,387	5,209					
Nashville, TN, MSA	18	16	18	18	18	18	1,171,755	246,075	119,885	15,446	62,588	38,430	11,207					
Memphis, TN-AR-MS, MSA	19	22	23	23	23	23	1,105,058	254,154	110,518	15,969	56,557	35,014	10,193					
New York-Northern New Jersey-Long Island, CT-NJ-NY, CMS	20	15	16	16	16	16	20,436,735	4,156,651	2,711,221	260,594	1,112,663	692,219	227,969					
Birmingham, AL, MSA	21	33	24	24	24	24	915,077	181,543	117,123	11,431	42,090	31,008	9,952					
Redding, CA, MSA	21	21	15	15	15	15	164,530	38,228	24,189	2,402	8,550	5,429	1,953					
Greensboro--Winston-Salem--High Point, NC, MSA	21	25	N/A	N/A	N/A	N/A	1,179,384	235,547	154,640	14,833	63,338	40,152	13,179					
Macon, GA MSA	24	26	N/A	N/A	N/A	N/A	321,586	71,329	36,163	4,515	14,632	10,427	3,223					
Chattanooga, TN-GA MSA	24	25	N/A	N/A	N/A	N/A	452,034	89,215	61,288	5,700	24,055	15,474	5,198					

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 1999 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 2000 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 1999 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 4: People at Risk In America's 25 Most Ozone Polluted Counties

County	2002		2001		2000		Total Population	At-Risk Groups					Number of High Ozone Days in Unhealthy Ranges, 1998-2000					Avg	Grade
	ST	Rank	Rank	Rank	Rank	Rank		65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple				
San Bernardino	CA	1	1	1	1	1,669,934	460,466	145,865	28,236	83,267	48,884	13,509	165	55	50	115.8	F		
Kern	CA	2	3	3	3	642,495	176,191	60,497	10,792	32,057	19,015	5,473	186	60	4	94.7	F		
Fresno	CA	3	4	4	4	763,069	212,397	78,770	13,036	37,895	22,530	6,771	176	50	5	87.0	F		
Riverside	CA	4	2	2	2	1,530,653	392,961	188,281	24,084	78,218	47,472	15,304	142	42	15	78.3	F		
Tulare	CA	5	5	6	6	358,470	106,677	35,631	6,571	17,123	10,260	3,115	199	23	0	77.8	F		
Harris	TX	6	6	8	8	3,250,404	778,347	249,813	48,892	151,423	99,789	26,060	82	44	16	60.0	F		
Fulton	GA	7	7	13	13	744,827	151,013	66,479	9,494	35,387	24,315	6,541	86	22	9	45.7	F		
Los Angeles	CA	8	8	5	5	9,329,989	2,123,255	968,972	132,626	501,276	295,737	85,655	72	29	9	44.5	F		
Merced	CA	9	23	16	16	200,746	61,578	17,976	3,775	9,484	5,616	1,625	95	16	1	40.3	F		
Sevier	TN	10	12	19	19	65,783	12,308	8,805	794	3,737	2,290	768	98	13	0	39.2	F		
Kings	CA	11	21	9	9	123,241	31,945	8,910	1,955	6,388	3,629	885	98	9	0	37.2	F		
Mecklenburg	NC	12	11	12	12	648,400	142,086	59,252	8,762	33,083	20,869	5,759	86	15	1	36.8	F		
Rockdale	GA	13	9	14	14	68,968	15,612	6,549	990	3,106	2,203	641	65	24	3	35.7	F		
El Dorado	CA	14	18	17	17	161,358	36,493	20,069	2,261	8,482	5,299	1,733	84	11	2	34.8	F		
Anne Arundel	MD	15	10	11	11	480,483	101,636	47,939	6,454	26,224	15,713	4,598	76	17	0	33.8	F		
Blount	TN	16	13	25	25	102,785	18,989	13,931	1,218	5,846	3,587	1,200	82	10	0	32.3	F		
DeKalb	GA	17	27	29	29	596,853	118,231	48,097	7,480	28,500	19,460	4,997	60	19	3	31.5	F		
Douglas	GA	18	19	N/A	N/A	91,175	21,103	6,887	1,332	4,112	2,842	745	71	14	1	31.3	F		
Knox	TN	19	15	18	18	376,039	69,261	47,737	4,368	21,218	12,998	4,119	71	14	0	30.7	F		
Sacramento	CA	20	33	20	20	1,184,586	272,405	135,259	16,854	63,012	38,037	11,697	66	13	2	29.8	F		
Ventura	CA	21	14	7	7	745,063	175,737	78,164	11,004	39,165	23,509	7,026	75	6	2	29.3	F		
Rowan	NC	22	19	N/A	N/A	126,585	27,021	17,797	1,684	6,713	4,277	1,474	68	11	1	28.8	F		
Fayette	GA	23	N/A	N/A	N/A	92,378	21,120	8,225	1,346	4,109	2,935	841	55	15	3	27.8	F		
Maricopa	AZ	24	31	26	26	2,861,395	671,347	344,988	41,843	178,478	91,582	29,182	81	0	0	27.0	F		
Wake	NC	25	16	24	24	586,940	124,233	44,862	7,646	30,118	18,830	4,733	61	13	0	26.8	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 & 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 1999 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 2000 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 1999 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 (0.065-0.104 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 (1998-2000), 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=0.3-1.2, C=1.3-2.5, D=2.6-4.0, F=4.1+.

Table 5: Counties with the Worst Ozone Air Pollution in Each State

Location			Number of High Ozone Days in the Unhealthy Ranges, 1998-2000				
County	ST	Metropolitan Statistical Area	Orange	Red	Purple	Weighted Avg (1)	Grade (2)
Shelby	AL	Birmingham, AL, MSA	48	9	0	20.5	F
Maricopa	AZ	Phoenix-Mesa, AZ, MSA	81	0	0	27.0	F
Crittenden	AR	Memphis, TN-AR-MS, MSA	26	1	0	9.2	F
San Bernardino	CA	Riverside-San Bernardino, CA, PMSA	165	55	50	115.8	F
Jefferson	CO	Denver, CO, PMSA	12	0	0	4.0	F
Fairfield	CT	Bridgeport, CT, PMSA; Danbury, CT, PMSA	38	10	1	18.3	F
New Castle	DE	Wilmington-Newark, DE-MD, PMSA	39	7	0	16.5	F
Sussex	DE	N/A	45	3	0	16.5	F
Washington	DC	Washington, DC-MD-VA-WV, PMSA	46	4	0	17.3	F
Escambia	FL	Pensacola, FL, MSA	33	4	0	13.0	F
Fulton	GA	Atlanta, GA, MSA	86	22	9	45.7	F
Madison	IL	St. Louis, MO-IL, MSA	19	1	0	6.8	F
Clark	IN	Louisville, KY-IN, MSA	34	2	1	13.0	F
Scott	IA	Davenport-Molina-Rock Island, IA-IL, MSA	5	0	0	1.7	C
Wyandotte	KS	Kansas City, MO-KS, MSA	9	1	0	3.5	F
Oldham	KY	Louisville, KY-IN, MSA	45	5	0	17.5	F
East Baton Rouge	LA	Baton Rouge, LA, MSA	51	12	1	23.7	F
Hancock	ME	N/A	13	4	0	6.3	F
Anne Arundel	MD	Baltimore, MD, PMSA	76	17	0	33.8	F
Bristol	MA	Providence-Fall River-Warwick, RI-MA, MSA; Boston, MA-NH, PMSA; Brockton, MA, PMSA; New Bedford, MA, PMSA	16	4	0	7.3	F
Allegan	MI	Grand Rapids-Muskegon-Holland, MI, MSA	27	6	0	12.0	F
DeSoto	MS	Memphis, TN-AR-MS, MSA	28	1	0	9.8	F
Saint Charles	MO	St. Louis, MO-IL, MSA	46	2	1	17.0	F
Clark	NV	Las Vegas, NV-AZ, MSA	15	1	0	5.5	F
Rockingham	NH	Boston, MA-NH, PMSA; Manchester, NH, PMSA; Portsmouth-Rochester, NH-ME, PMSA; Lawrence, MA-NH, PMSA	11	1	0	4.2	F
Camden	NJ	Philadelphia, PA-NJ, PMSA	60	11	0	25.5	F
Dona Ana	NM	Las Cruces, NM, MSA	8	0	0	2.7	D
Richmond	NY	New York, NY, PMSA	31	4	2	13.7	F
Mecklenburg	NC	Charlotte-Gastonia-Rock Hill, NC-SC, MSA	86	15	1	36.8	F
Clinton	OH	N/A	46	2	0	16.3	F
Tulsa	OK	Tulsa, OK, MSA	29	1	0	10.2	F
Jackson	OR	Medford-Ashland, OR, MSA	5	0	0	1.7	C
Bucks	PA	Philadelphia, PA-NJ, PMSA	45	8	2	20.3	F
Washington	RI	Providence-Fall River-Warwick, RI-MA, MSA; New London-Norwich, CT-RI, MSA	13	2	1	6.0	F

Table 5: Counties with the Worst Ozone Air Pollution in Each State, cont'd.

Location			Number of High Ozone Days in the Unhealthy Ranges, 1998-2000				
County	ST	Metropolitan Statistical Area	Orange	Red	Purple	Weighted Avg (1)	Grade (2)
Anderson	SC	Greenville_Spartanburg-Anderson, SC, MSA	36	4	0	14.0	F
Sevier	TN	Knoxville, TN, MSA	98	13	0	39.2	F
Harris	TX	Houston, TX, PMSA	82	44	16	60.0	F
Salt Lake	UT	Salt Lake City-Ogden, UT, MSA	22	2	0	8.3	F
Bennington	VT	N/A	4	0	0	1.3	C
Fairfax	VA	Washington, DC-MD-VA-WV, PMSA	45	6	0	18.0	F
King	WA	Seattle-Bellevue-Everett, WA, PMSA	4	2	0	2.3	D
Wood	WV	Parkersburg-Marietta, WV-OH, MSA	36	1	0	12.5	F
Kenosha	WI	Kenosha, WI, PMSA	32	2	0	11.7	F

Notes:

- 1) The weighted average was derived by adding the three years of individual level data (1998-2000), 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 A or B.

Table 6a: Cities Deleted from the Lists of the 25 Most Ozone-Polluted Cities and Counties Between 2001 and 2002

City	2001 Rank	2001 Grade	2002 Grade
Pittsburgh, PA, MSA	19	F	F
Lancaster, PA, MSA	20	F	F
Richmond-Petersburg, VA, MSA	23	F	F
Louisville, KY-IN, MSA	25	F	F

Table 6b: Counties Deleted from the Lists of the 25 Most Ozone-Polluted Cities and Counties Between 2001 and 2002

County	2001 Rank	2001 Grade	2002 Grade
Camden, NJ	16	F	F
Imperial, CA	22	F	F
Charles, MD	23	F	F
Prince George's, MD	25	F	F
Denton, TX	25	F	F

Table 7: Metropolitan Areas with the Least Ozone Air Pollution

Metropolitan Area	Population
Bellingham, WA, MSA	160,310
Colorado Springs, CO, MSA	499,994
Duluth Superior, MN-WI, MSA	236,400
Fargo-Moorhead, ND-MN, MSA	170,122
Flagstaff, AZ-UT, MSA	120,652
Honolulu, HI, MSA	864,571
Laredo, TX, MSA	193,180
Lincoln, NE, MSA	237,657
McAllen-Edinburg-Mission, TX, MSA	534,907
Salinas, CA, MSA	371,756
Spokane, WA, MSA	409,736

Table 8: Counties with the No Monitored Ozone Air Pollution in Unhealthy Ranges in Each State

County	ST	Metropolitan Statistical Area
Sumter	AL	N/A
Yukon-Koyukuk	AK	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 Mateo	CA	San Francisco, CA, PMSA
Santa Cruz	CA	Santa Cruz-Watsonville, CA, PMSA
Siskiyou	CA	N/A
El Paso	CO	Colorado Springs, CO, MSA
Montezuma	CO	N/A
Weld	CO	Greeley, CO, PMSA
Honolulu	HI	Honolulu, HI, MSA
Butte	ID	N/A
Rock Island	IL	Davenport-Moline-Rock Island, IA-IL, MSA
Palo Alto	IA	N/A
Polk	IA	Des Moines, IA, MSA
Story	IA	N/A
Oxford	ME	N/A
Dakota	MN	Minneapolis-St. Paul, MN-WI, MSA
Lake	MN	N/A
Saint Louis	MN	Duluth Superior, MN-WI, MSA
Flathead	MT	N/A
Lancaster	NE	Lincoln, NE, MSA
Douglas	NV	N/A
White Pine	NV	N/A
Carson City	NV	N/A
Carroll	NH	N/A
Grafton	NH	N/A
Merrimack	NH	N/A
Eddy	NM	N/A
Valencia	NM	Albuquerque, NM, MSA
Billings	ND	N/A
Cass	ND	Fargo-Moorhead, ND-MN, MSA
Mercer	ND	N/A
Oliver	ND	N/A

Table 8: Counties with the No Monitored Ozone Air Pollution in Unhealthy Ranges in Each State (cont'd)

County	ST	Metropolitan Statistical Area
Steele	ND	N/A
Columbia	OR	Portland-Vancouver, OR-WA, PMSA
Brewster	TX	N/A
Hidalgo	TX	McAllen-Edinburg-Mission, TX, MSA
Webb	TX	Laredo, TX, MSA
Cache	UT	N/A
San Juan	UT	N/A
Clallam	WA	N/A
Clark	WA	Portland-Vancouver, OR-WA, PMSA
Klickitat	WA	N/A
Lewis	WA	N/A
Skagit	WA	N/A
Spokane	WA	Spokane, WA, MSA
Whatcom	WA	Bellingham, WA, MSA
Saint Croix	WI	Minneapolis-St. Paul, MN-WI, MSA
Teton	WY	N/A

N/A means "Not Applicable"

Table 9: Breakdown of High Ozone Days Among Counties with Monitoring Sites

Category	Number of Counties 2002	Number of Counties 2001	Number of Counties 2000
Monitoring Sites	678	660	678
Monitoring Sites with Incomplete Data (that were excluded in the analysis)	83	83	122
Monitoring Sites with Complete Data	595	577	556
Monitoring Sites that had at least 1 day of high ozone in the Unhealthy, Moderate, and Good Ranges	539	522	494
Monitoring Sites that had zero days of high ozone in the Unhealthy Ranges but had at least 1 day of high ozone in the Moderate and Good Ranges	45	48	62
Monitoring Sites that had zero days of high ozone in the Unhealthy Ranges plus zero days of high ozone in the Moderate Range but had at least 1 day of high ozone in the Good Range.	11	7	7

Table 10: State Comparisons, 2001-2002

State	County Additions	County Subtractions	Grade Changes ¹			Miscellaneous
			County Name	2001	2002	
AL	Baldwin Morgan		Elmore	D	F	
AZ			Yavapai	*	D	
AR			Pulaski	D	F	
CA			Butte	C	F	
CO	La Plata		Arapahoe	B	C	
			Larimer	B	C	
DE						Sussex joins New Castle as worst county.
FL	Bay Columbia Lake Santa Rosa		Baker	*	B	Dade County is now called Miami-Dade.
			Holmes	*	C	
			Manatee	D	F	
			Marion	*	C	
			Osceola	F	D	
			Pasco	D	F	
GA	Murray		Dawson	*	F	
			Fannin	C	*	
			Fayette	*	F	
			Sumter	*	F	
HI	Hawaii					
IL			McHenry	F	D	Madison replaces Cook as worst county.
			Macoupin	C	D	
			Saint Clair	C	D	
			Sangamon	B	C	
IN	Boone Greene Hendricks Huntington Jackson Shelby	Lawrence	Elkhart	D	B	
			Perry	*	F	
IA	Bremer		Linn	B	C	
			Warren	A	B	
KS	Trego	Miami Pawnee	Linn	*	D	
			Sedgwick	D	C	
			Wyandotte	D	F	
KY	Warren		Bell	C	F	Oldham replaces Jefferson as worst county.
			Carter	*	F	
			Jessamine	F	D	

Table 10: State Comparisons, 2001-2002, cont'd.

State	County Additions	County Subtractions	Grade Changes ¹			Miscellaneous
			County Name	2001	2002	
LA			Grant	B	C	
			Lafayette	D	F	
			Ouachita	B	C	
			Pointe Coupe	F	C	
			Saint Bernard	D	F	
ME			Cumberland	F	D	Hancock replaces York as worst county.
			Knox	F	C	
			Piscataquis	*	B	
			Sagadahoc	F	D	
MD			Frederick	*	F	
			Baltimore City	F	*	
MA		Plymouth	Suffolk	F	D	
MI	Grand Traverse	Manistee Mecosta Roscommon Tuscola	Lenawee	C	D	Allegan replaces Berrien as worst county.
			Missaukee	*	D	
MS		Choctaw Sharkey	Adams	C	D	DeSoto replaces Jackson as worst county.
MO	Cass		Cedar	*	F	
			Jackson	B	*	
			Monroe	F	D	
NH			Belknap	B	*	
			Merrimack	B	A	
			Strafford	C	B	
NJ		Union	Essex	F	*	
			Passaic	*	F	
NM			Dona Ana	C	D	
			San Juan	A	B	
NY			Herkimer	A	B	Richmond is the worst county. New York was tied with Richmond last year.
			Monroe	F	D	
			Oneida	B	C	
			Saratoga	F	D	
			Ulster	D	C	
NC			Avery	*	C	
			Buncombe	D	F	
			Lenoir	*	F	
			Martin	C	D	
ND			Billings	*	A	
OH			Jefferson	C	D	Clinton replaces Butler as worst county.
			Logan	D	*	
			Preble	F	D	
			Union	F	*	

Table 10: State Comparisons, 2001-2002, cont'd.

State	County Additions	County Subtractions	Grade Changes ¹			Miscellaneous
			County Name	2001	2002	
OK			Comanche	C	D	
			Latimer	D	C	
			McClain	D	F	
PA	Chester		Centre	*	F	Bucks replaces Allegheny as worst county.
			Clearfield	*	F	
			Greene	*	F	
			Lawrence	F	D	
SC	Greenville		Berkeley	C	D	
			Colleton	C	D	
SD	Pennington					
TN	Meigs Montgomery	Bradley Hamblen Humphreys				
TX	Hood Johnson Kaufman Parker Rockwall		El Paso	D	F	
			Marion	*	F	
			Orange	D	C	
			Victoria	C	D	
UT		Washington	Weber	D	C	
VA		Henry	Hanover	F	*	
			Loudoun	*	F	
WA		Snohomish	Klickitat	*	A	
			Lewis	*	A	
			Thurston	*	B	
WV	Monongalia					Wood replaces Cabell as worst county.
WI	Green	Taylor	Washington	D	C	Kenosha replaces Manitowoc as worst county.
			Waukesha	F	D	
			Winnebago	D	C	

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

(1) The "grade changes" column represents counties that have either increased or decreased by a grade within the past year, i.e. going from a B to an A or a C to a D. This column does not include counties that had increases or decreases in their weighted averages but did not change an actual grade level.

HEALTH EFFECTS OF OZONE

The American Lung Association *State of the Air* reports focus on ozone, one of the most hazardous of the common air pollutants. Ozone poses health dangers for millions of people across the country, in both big and small metropolitan areas.

Dangers of Ozone

Ozone is an intensely irritating gas. At levels routinely 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.

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.¹

Ozone levels generally rise during the May through September period when higher temperatures and the increased amount of sunlight combine with the stagnant atmospheric conditions that are associated with ozone air pollution episodes.

Recently, 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.² Additional evidence 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.³

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

Children are Vulnerable

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 recent study of 1,150 children followed for three years suggests that long-term ambient ozone exposure might negatively affect the growth of human lung function. The researchers observed small but consistent decrements in lung function in the children that were associated with ambient ozone exposure.⁴

Researchers have found that when air pollution worsens, more children stay home sick from school due to respiratory illness. University of Southern California researchers found that school absences due to sore throat, coughs, asthma attacks and similar problems increase in the three to five days after a significant rise in ozone.⁵ Another study of schoolchildren in Nevada also found that increases in ozone levels were associated with an increase in the school absentee rate.⁶

Children with asthma are particularly susceptible to ozone. 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.⁷ Another recent study found asthmatic children who had a low birthweight or a premature birth are especially susceptible to the effects of summer ozone.⁸

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 alternate work hours. The result: large and significant decreases in ozone concentrations. During this period, researchers found significant reductions in the number of urgent care visits, emergency care visits, and hospitalizations for asthma among children ages 1-16.⁹

A new 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.¹⁰

The Elderly at Risk

For most people, breathing ability diminishes 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 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 temperature and ozone levels in Belgium confirms the deadly potential of ozone for senior citizens. The study found an association between daily mortality in the elderly and ambient ozone concentration during the hot summer of 1994.¹¹ 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 the U.S. Environmental Protection Agency, 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 defines sensitive groups for ozone to include children, the elderly, people with lung disease including asthma, outdoor workers, and healthy adults who exercise outdoors.

State of the Air: 2002 finds only slight reductions in the number of Orange, Red and Purple days compared with last year's report. This year, with 18 more counties being monitored compared with last year's report, there was a total of 12,626 "Orange" days in counties being monitored for ozone—179 fewer days than the previous year. The number of "Red" days dropped from 1,505 to 1,388 during the same period. Purple days decreased from 209 in the 2001 report to 182 in this year's report. That's still more than 14,000 high-ozone days—2,370 more than two years before, when the same number of counties were monitored.

FIXING THE NATION'S OZONE PROBLEM

Overview of Ozone Sources

Ozone is a highly reactive gas that is a form of oxygen. It is the main component of the air pollution known as smog. Ozone reacts chemically ("oxidizes") with internal body tissues that it comes in contact with, such as those in the lung.

Ozone is formed when sunlight and warm temperatures interact with chemicals known as hydrocarbons (or volatile organic compounds) and nitrogen oxides (NO_x) —both emitted in motor vehicle exhaust. Nitrogen oxides also are emitted from the combustion of fossil fuels in power plants and factories.

Since the enactment of the Clean Air Act, 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.¹²

Wind can carry NO_x hundreds of miles, so people who don't live in areas with high levels of 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.¹³

Threats to the Clean Air Act

Since the passage of the Clean Air Act in 1970, the United States has moved steadily toward cleaner air. Human exposure to many dangerous pollutants has declined markedly because of federal, state, and local enforcement of the Act. The Clean Air Act has been one of our nation's most successful environmental laws.¹⁴ Unfortunately, as this report documents, the air we breathe is still too polluted in too many places, risking public health.

If not for decades of work driven by the Clean Air Act throughout the country, the air we breathe would pose an even greater health risk. 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. Some cities that have made great strides have had the greatest levels of intractable pollution to remove. Furthermore, the short time frame of this series of reports prevents any evaluation of the progress any community has made.

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

Delay in Enforcing the Standards. In 1997, the U.S. Environmental Protection Agency issued a new, final National Ambient Air Quality Standard for ozone. This standard resulted

from the most strenuous review of the science ever undertaken by the agency, and included more than 3,000 studies. The new ozone standard averaged ozone exposure 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 the 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 removing those peak periods.

The EPA had not changed the ozone standard since 1979 despite the evidence of thousands of studies and despite the requirements of the Clean Air Act mandating the agency to review these standards every five years. In fact, to force the EPA to carry out its duty to review the standards, the American Lung Association has sued the agency three times in the last 11 years. The Lung Association's constant pressure resulted in the new 8-hour standard adopted in July 18, 1997. Several industry groups sued EPA to challenge the standards. All the cases were consolidated in the U.S. Court of Appeals for the D.C. Circuit, which ruled in May 1999 that EPA's interpretation of the Clean Air Act was unconstitutional.

The American Lung Association supported EPA's appeal of 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 to the Court of Appeals 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 ruled in favor of EPA, upholding the 1997 air pollution standards themselves, effectively ending the 5-year legal battle.

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 or local air pollution office is to begin work on a plan to reduce air pollution by a specified goal date.

To date, the EPA has not designated any such area, despite years of monitoring data documenting that many such areas exist, including evidence in the American Lung Association's *State of the Air* reports. Consequently, nearly five years after the tougher standards were adopted, the states are still relying on the same weaker standards they've used since 1979.

The EPA identified many annual health benefits of this more protective standard in 1997. Among them were these: 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. Today, nearly five years later, hundreds of thousands of people still suffer because the protection of the Clean Air Act is on hold. It is time the EPA began providing this protection.

Proposed Rollback of Protections. The most explicit threats to the Clean Air Act come from proposals to roll back key protections of the Act. In February 2002, the Bush Administration proposed changes to the Act that would have preempted the authority of the states to target large, out-of-state polluters whose emissions were degrading the air within their states. Northeastern states had used this provision of the Act to challenge coal-fired power plants in the Midwest and South for their contributions to their high ozone levels. That challenge led to sweeping cuts underway in NO_x emissions from these facilities. Without that legal authority, the states would not have been able to require the utilities to clean up these plants.

The EPA is considering scrapping a provision of the 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 emission 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 "grandfathered" these old plants under the Act, assuming 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 January 15, 2002, the Justice Department confirmed EPA's authority to enforce the NSR provision.

Rolling back the New Source Review protections would be the greatest attempt to weaken the Clean Air Act since its enactment. The American Lung Association has and will continue to work to prevent that step. The Lung Association opposes any effort to dilute the current level of protections.

Other Pollution Control Strategies

Power Plants. In part because of their special grandfathered status, power plants have become the biggest single cause of our unhealthy air. The death, disease, and environmental destruction caused by power plant pollution continue to mount as the emissions of nitrogen oxides and sulfur dioxide have increased and the emissions of mercury and carbon dioxide have 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 so called "grandfathered" power plants are permitted to emit as much as 10 times more nitrogen oxides 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 only unregulated source of toxic mercury 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. For instance, between 1992 and 1998, there was a dramatic 15.8 percent increase in the amount of electricity generated from grandfathered coal-fired power plants.¹⁵

No other single source of pollution causes so many adverse health and environmental conditions as do coal-burning power plants. The American Lung Association supports legislation that has been introduced in Congress that would finally close the 30-year-old loophole that lets power plants off the hook and that would set reasonable and achievable caps on the four major pollutants. This legislation, known as The Clean Power Act, would force significant cuts in emissions of nitrogen oxides, sulfur dioxide, mercury and carbon dioxide, ensuring that the old plants would finally have to meet the same emissions requirements as new ones.

The last two years have also seen a new “Oklahoma Land Rush” in the filing of proposals to construct new power plants in many states. Spurred on by the electricity shortfalls in California, many companies have proposed scores of new plants in states across the nation. The number of new plants proposed dwarfs estimates of future electricity demand, so most of the plants may not be constructed. Many are proposed as natural gas facilities, although many would use coal as a primary fuel or diesel as a back-up fuel. Few, if any, propose to replace old, coal-fired facilities in the state. Lung Associations will be working to ensure that if these plants are built, they use the state-of-the-art pollution controls and, wherever possible, replace existing dirtier facilities.

New Diesel Regulations. In January 2001, the Environmental Protection Agency issued new regulations that will help millions of Americans, especially children with asthma, breathe easier. The regulations significantly limit tailpipe emissions from heavy-duty diesel vehicles.

The new rule will cap sulfur levels in diesel fuel at 15 parts per million (ppm) and impose tough new emissions standards on all heavy-duty vehicles. This will result in a more than 90 percent reduction in emissions of harmful pollutants like particulate matter (PM) and nitrogen oxides (NOx). 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.¹⁶

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 sulfur in diesel fuel regulations, the National Petroleum Refiners Association filed a lawsuit

challenging the new EPA regulations in February 2001. The American Lung Association has intervened in this lawsuit to support the EPA heavy-duty diesel regulations.

Nonroad Heavy Duty Engines. While new rules to regulate emissions of onroad heavy-duty diesels 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 nonroad heavy-duty diesel engines and fuel to the same degree as onroad diesel vehicles..

In fact, nonroad heavy-duty diesel engines are a more significant source of emissions than onroad heavy-duty diesels. Fine particle (PM₁₀) emission from nonroad vehicles and engines accounted for 64% of transportation source emissions and 16% of total emissions; for NO_x, they account for 40% of transportation source emissions and 22% of total emissions.

Nonroad heavy-duty diesel equipment can benefit from the technological advances that will occur in order to meet the 2007 on-road standards—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 nonroad heavy-duty diesels and fuel that are equivalent to those for on-road heavy-duty diesels, and in the same time frame.

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APPENDIX A DESCRIPTION OF METHODOLOGY

STATISTICAL METHODOLOGY

The Air Quality Data. The data on air quality throughout the United States was obtained from the US Environmental Protection Agency's Aerometric Information Retrieval System (AIRS) database. The American Lung Association used A.S.L. & Associates to analyze data on ozone monitoring for the three-year period 1998–2000. The 1998, 1999, and 2000 AIRS hourly ozone data was used to calculate the daily eight-hour maximum concentration for each ozone-monitoring site. The data are examined over a three-year period for the same reason that EPA uses three years of data to determine compliance with the ozone standard: to prevent a situation in any single year, where anomalies of weather or other factors create air pollution levels which inaccurately reflect the normal conditions. The highest eight-hour daily maximum concentration in each county for 1998, 1999, and 2000, based on the EPA-defined ozone season, was then determined.

Using these results, A.S.L. & Associates prepared a table that summarized for each of the three years the number of days the ozone level was within the unhealthy ranges identified by EPA as orange, red and purple days, 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)

The number of days within each of these categories was then summed to establish the number of days each monitored county experienced air quality designated as orange, red or purple.

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

Description of County Grading System. A weighted average was used to determine the grades of each county. The calculation for the weighted average was as follows: The number of orange days experienced by each county was assigned a factor of 1; red days, a factor of 1.5 and purple days, 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 were 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.

This year the grading methodology changed slightly from the 2001 report because of the addition of several more counties and the desire to remain consistent to the national 8-hour ozone standard. Counties were ranked by weighted average.

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 (corresponding to 1 to 2 orange days) received a “B.” Counties receiving a “C” had only 3 to 6 days over the standard, 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 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.

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 levels, 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 self-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 1999. The Census Bureau also estimated the age specific breakdown of the population by county.

PREVALENCE ESTIMATES

Chronic Bronchitis, Emphysema and Pediatric Asthma. In 1999, the National Health Interview Survey (NHIS) estimated the nationwide annual prevalence of diagnosed chronic bronchitis at 8.8 million; the nationwide lifetime prevalence of emphysema was estimated at 2.8 million. The NHIS estimates the prevalence of diagnosed pediatric asthma to be close to 3.8 million under age 18. 1999 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 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 1999 NHIS to age-specific county-level resident populations obtained from the U.S. Bureaus 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 2000, the Behavioral Risk Factor Surveillance System (BRFSS) survey indicated that approximately 7.2% of adults residing in the United States reported having asthma. This is the first state-specific asthma prevalence data available for all 50 states. 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 2000 BRFSS to age-specific county-level resident populations obtained from the U.S. Bureaus 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 errors 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 exposures) 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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APPENDIX B
STATE DATA TABLES

ALABAMA

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



At-Risk Groups								Number of High Ozone Days in the Unhealthy Ranges					
County	Total Population	14 and Under		65 and Over		Pediatric Asthma	Adult Asthma	Chronic Bronchitis	1998-2000				
		14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple	Wgt. Avg	Grade	
Baldwin	135,820	27,198	20,828	1,738	6,264	4,690	1,682	*	*	*	*	*	
Clay	14,012	2,615	2,386	171	663	495	185	23	0	0	7.7	F	
Elmore	63,488	12,879	6,618	829	2,878	2,100	623	9	1	0	3.5	F	
Geneva	24,968	4,782	3,978	310	1,171	874	319	*	*	*	*	*	
Jefferson	657,422	126,578	92,872	7,977	30,621	22,625	7,573	39	6	0	16.0	F	
Lawrence	33,795	6,825	4,091	443	1,548	1,133	362	14	0	0	4.7	F	
Madison	280,381	53,483	30,735	3,347	13,081	9,530	2,841	33	1	0	11.5	F	
Mobile	399,652	88,519	47,555	5,593	17,752	13,006	4,110	24	1	0	8.5	F	
Montgomery	215,813	45,433	25,328	2,881	9,750	7,085	2,180	22	2	0	8.3	F	
Morgan	109,665	22,046	13,652	1,399	5,016	3,710	1,196	*	*	*	*	*	
Shelby	146,392	32,337	11,424	2,000	6,404	4,651	1,203	48	9	0	20.5	F	
Sumter	15,615	3,696	2,033	238	684	491	161	0	0	0	0.0	A	
Total	2,097,023	426,391	261,500	26,926	95,833	70,391	22,436						

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 1999 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 2000 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 1999 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 (1998-2000), 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+.

ALASKA



At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Yukon-Koyukuk	6,188	2,114	575	133	260	163	52
Total	6,188	2,114	575	133	260	163	52

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
0	0	0	0.0	A

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 1999 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 2000 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 1999 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 (1998-2000), 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+.



ARIZONA

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Cochise	112,754	26,737	16,119	1,708	7,017	3,643	1,290
Coconino	114,498	30,390	7,069	1,919	6,552	3,293	779
Gila	49,051	10,697	9,770	687	3,214	1,707	719
Maricopa	2,861,395	671,347	344,988	41,843	178,478	91,582	29,182
Pima	803,618	177,367	115,949	11,075	50,927	26,584	9,116
Yavapai	152,957	28,072	35,022	1,779	10,628	5,702	2,503
Yuma	135,614	35,434	20,591	2,214	7,987	4,231	1,536
Total	4,229,887	980,044	549,508	61,226	264,803	136,742	45,126

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
0	0	0	0.0	A
0	0	0	0.0	A
*	*	*	*	*
81	0	0	27.0	F
1	0	0	0.3	B
7	0	0	2.3	D
6	0	0	2.0	C

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 1999 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 2000 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 1999 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 (1998-2000), 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+.



ARKANSAS

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Crittenden	50,138	12,883	5,089	814	2,310	1,526	461
Montgomery	8,740	1,592	1,706	103	445	319	129
Newton	8,226	1,855	1,188	119	394	274	99
Pulaski	349,232	74,349	40,849	4,719	17,130	11,417	3,514
Total	416,336	90,679	48,832	5,755	20,279	13,537	4,203

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
26	1	0	9.2	F
1	0	0	0.3	B
3	0	0	1.0	C
23	1	0	8.2	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 1999 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 2000 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 1999 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 (1998-2000), 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+.

CALIFORNIA

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(page 1 of 2)



Number of High Ozone Days in the Unhealthy Ranges

County	At-Risk Groups							1998-2000				
	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple	Wgt. Avg	Grade
Alameda	1,415,582	291,263	149,069	18,194	78,229	46,623	13,540	12	4	0	6.0	F
Amador	34,153	5,536	6,175	349	1,987	1,263	474	48	7	0	19.5	F
Butte	195,220	41,336	31,817	2,561	10,810	6,623	2,391	12	0	0	4.0	F
Calaveras	40,051	8,298	7,001	522	2,132	1,411	553	57	6	0	22.0	F
Colusa	18,844	5,124	2,160	320	928	569	184	2	0	0	0.7	B
Contra Costa	933,141	198,095	107,272	12,386	50,463	30,966	9,654	11	3	0	5.2	F
El Dorado	161,358	36,493	20,069	2,261	8,482	5,299	1,733	84	11	2	34.8	F
Fresno	763,069	212,397	78,770	13,036	37,895	22,530	6,771	176	50	5	87.0	F
Glenn	26,328	7,109	3,469	443	1,297	808	279	3	0	0	1.0	C
Imperial	145,287	40,101	14,220	2,530	7,140	4,233	1,244	32	3	0	12.2	F
Inyo	17,958	3,653	3,255	227	967	635	249	2	0	0	0.7	B
Kern	642,495	176,191	60,497	10,792	32,057	19,015	5,473	186	60	4	94.7	F
Kings	123,241	31,945	8,910	1,955	6,388	3,629	885	98	9	0	37.2	F
Lake	55,405	11,836	10,969	730	2,945	1,954	806	0	0	0	0.0	A
Los Angeles	9,329,989	2,123,255	968,972	132,626	501,276	295,737	85,655	72	29	9	44.5	F
Madera	116,760	29,208	15,098	1,817	6,015	3,658	1,210	30	2	0	11.0	F
Marin	236,768	36,915	32,634	2,335	13,778	8,649	2,855	0	0	0	0.0	A
Mariposa	15,605	2,964	2,840	184	861	565	221	51	1	0	17.5	F
Mendocino	84,085	19,553	11,602	1,223	4,372	2,747	948	0	0	0	0.0	A
Merced	200,746	61,578	17,976	3,775	9,484	5,616	1,625	95	16	1	40.3	F
Mono	10,512	2,223	752	136	580	338	83	*	*	*	*	*
Monterey	371,756	91,186	40,795	5,642	19,452	11,507	3,428	0	0	0	0.0	A
Napa	120,962	24,269	20,364	1,519	6,643	4,205	1,555	2	0	0	0.7	B
Nevada	92,014	18,906	16,728	1,179	4,932	3,232	1,265	70	3	0	24.8	F
Orange	2,760,948	585,872	279,144	36,991	151,486	89,617	25,774	9	2	0	4.0	F
Placer	239,485	53,674	28,742	3,346	12,654	7,870	2,543	60	8	0	24.0	F
Plumas	20,370	4,375	3,480	273	1,075	708	275	0	0	0	0.0	A
Riverside	1,530,653	392,961	188,281	24,084	78,218	47,472	15,304	142	42	15	78.3	F
Sacramento	1,184,586	272,405	135,259	16,854	63,012	38,037	11,697	66	13	2	29.8	F
San Benito	51,276	14,260	4,323	881	2,530	1,496	415	7	0	0	2.3	D
San Bernardino	1,669,934	460,466	145,865	28,236	83,267	48,884	13,509	165	55	50	115.8	F
San Diego	2,820,844	615,339	323,420	38,207	154,524	91,318	27,361	56	11	1	24.8	F
San Francisco	746,777	102,422	113,902	6,570	44,973	27,680	9,168	0	0	0	0.0	A
San Joaquin	563,183	147,896	60,419	9,163	28,451	17,106	5,236	18	2	0	7.0	F
San Luis Obispo	236,953	45,631	35,473	2,839	13,519	8,133	2,736	20	1	0	7.2	F

At-Risk Groups								Number of High Ozone Days in the Unhealthy Ranges				
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Empysema	1998-2000				
								Orange	Red	Purple	Wgt. Avg	Grade
San Mateo	702,102	131,627	92,344	8,242	39,470	24,300	7,863	0	0	0	0.0	A
Santa Barbara	391,071	81,089	51,665	5,029	21,893	13,028	4,165	7	3	0	3.8	F
Santa Clara	1,647,419	339,267	167,720	21,243	90,975	54,158	15,550	11	2	0	4.7	F
Santa Cruz	245,201	52,419	25,542	3,266	13,493	7,927	2,263	0	0	0	0.0	A
Shasta	164,530	38,228	24,189	2,402	8,550	5,429	1,953	55	3	1	20.5	F
Siskiyou	43,570	9,736	7,524	612	2,277	1,482	574	0	0	0	0.0	A
Solano	385,723	95,218	35,850	5,887	19,958	11,875	3,344	15	1	0	5.5	F
Sonoma	439,970	95,178	57,202	5,901	23,728	14,567	4,733	6	1	0	2.5	D
Stanislaus	436,790	119,768	46,340	7,356	21,677	13,075	4,018	46	4	1	18.0	F
Sutter	78,423	19,269	9,424	1,204	4,033	2,493	820	16	0	0	5.3	F
Tehama	54,012	12,829	8,630	802	2,779	1,793	679	26	5	0	11.2	F
Tulare	358,470	106,677	35,631	6,571	17,123	10,260	3,115	199	23	0	77.8	F
Tuolumne	53,764	10,076	9,517	629	2,992	1,917	722	76	1	0	25.8	F
Ventura	745,063	175,737	78,164	11,004	39,165	23,509	7,026	75	6	2	29.3	F
Yolo	155,573	33,911	15,612	2,091	8,753	4,994	1,398	13	0	0	4.3	F
Total	32,878,019	7,495,764	3,615,076	466,424	1,759,688	1,050,942	315,317					

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 1999 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 2000 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 1999 based on national rates (NHIS) applied to county population estimates (US Census).
- (6) **Empysema** 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 (1998-2000), 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.
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COLORADO

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Adams	331,045	81,059	25,550	5,124	15,164	10,223	2,813
Arapahoe	482,089	104,017	44,341	6,693	23,152	15,623	4,515
Boulder	273,112	52,133	23,097	3,318	13,525	9,077	2,420
Denver	499,775	99,128	59,482	6,204	24,601	16,925	5,282
Douglas	156,860	40,143	5,209	2,533	7,375	4,637	1,014
El Paso	499,994	113,160	44,127	7,212	23,362	15,850	4,457
Jefferson	509,222	105,034	54,671	6,788	24,586	16,975	5,264
La Plata	41,148	8,757	3,876	557	1,943	1,339	384
Larimer	236,849	49,667	23,562	3,169	11,254	7,722	2,232
Montezuma	22,672	5,564	3,152	356	1,007	733	266
Weld	165,805	39,916	15,519	2,538	7,465	5,172	1,513
Total	3,218,571	698,578	302,586	44,492	153,434	104,277	30,160

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
2	0	0	0.7	B
4	0	0	1.3	C
6	0	0	2.0	C
4	0	0	1.3	C
3	0	0	1.0	C
0	0	0	0.0	A
12	0	0	4.0	F
*	*	*	*	*
4	0	0	1.3	C
0	0	0	0.0	A
0	0	0	0.0	A

Notes:

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- (4) **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).
- (5) **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 population estimates (US Census).
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- (9) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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.
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CONNECTICUT



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Fairfield	841,334	174,603	116,804	10,998	49,732	28,560	9,762
Hartford	829,671	174,379	125,049	10,934	49,208	28,071	9,850
Litchfield	182,399	39,659	25,925	2,481	10,612	6,104	2,108
Middlesex	151,461	30,802	20,449	1,946	9,064	5,116	1,694
New Haven	793,208	168,920	119,006	10,544	47,126	26,662	9,286
New London	246,049	54,762	33,589	3,387	14,499	8,108	2,706
Tolland	132,668	28,120	14,492	1,758	8,081	4,337	1,285
Total	3,176,790	671,245	455,314	42,048	188,323	106,957	36,691

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
38	10	1	18.3	F
14	1	0	5.2	F
26	0	0	8.7	F
21	4	1	9.7	F
26	8	1	13.3	F
13	3	1	6.5	F
19	2	0	7.3	F

Notes:

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- (9) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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.
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DELAWARE

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Kent	126,048	28,193	14,278	1,780	6,548	4,064	1,249
New Castle	487,182	97,230	57,458	6,128	26,326	16,289	4,978
Sussex	140,308	26,980	26,399	1,707	7,212	4,976	1,940
Total	753,538	152,403	98,135	9,615	40,086	25,329	8,167

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
30	5	0	12.5	F
39	7	0	16.5	F
45	3	0	16.5	F

Notes:

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- (5) **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 population estimates (US Census).
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DISTRICT OF COLUMBIA

At-Risk Groups								Number of High Ozone Days in the Unhealthy Ranges				
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	1998-2000				
								Orange	Red	Purple	Wgt. Avg	Grade
Washington	519,000	82,140	72,102	5,022	33,157	18,823	6,071	46	4	0	17.3	F
Total	519,000	82,140	72,102	5,022	33,157	18,823	6,071					

Notes:

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FLORIDA

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



Number of High Ozone Days in the Unhealthy Ranges

County	At-Risk Groups						
	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Alachua	198,484	39,371	20,168	2,460	9,069	6,479	1,760
Baker	21,181	5,595	1,824	356	828	628	178
Bay	147,958	32,947	19,766	2,085	6,226	4,880	1,652
Brevard	470,365	89,058	93,832	5,578	20,801	16,963	6,829
Broward	1,535,468	295,728	258,033	18,550	67,184	53,709	19,580
Columbia	53,738	12,547	7,577	802	2,214	1,745	613
Duval	738,483	173,672	77,976	10,828	30,582	23,353	6,976
Escambia	282,432	61,383	38,526	3,877	12,129	9,359	3,152
Hillsborough	940,484	204,616	119,047	12,861	39,921	30,928	9,982
Holmes	18,761	3,977	2,691	260	797	630	223
Lake	209,812	36,708	58,805	2,324	9,427	8,061	3,879
Lee	400,542	70,519	102,530	4,412	18,012	15,170	6,914
Leon	215,926	43,830	19,116	2,763	9,705	6,951	1,800
Manatee	243,531	44,031	62,538	2,748	10,869	9,146	4,174
Marion	245,975	46,479	62,122	2,933	10,841	9,130	4,184
Miami-Dade	2,175,634	450,096	310,642	28,461	93,785	73,423	25,049
Orange	817,206	178,804	87,878	11,182	34,867	26,393	7,786
Osceola	150,596	34,685	20,265	2,169	6,277	4,910	1,659
Palm Beach	1,049,420	187,678	253,796	11,690	46,770	38,988	17,050
Pasco	330,704	57,896	87,190	3,649	14,896	12,619	5,873
Pinellas	878,499	144,232	203,070	9,160	40,019	33,173	14,152
Polk	457,347	97,085	87,873	6,157	19,531	15,838	6,377
Saint Johns	119,685	23,394	20,428	1,483	5,233	4,202	1,575
Saint Lucie	181,850	36,704	42,441	2,291	7,857	6,551	2,883
Santa Rosa	120,952	28,747	13,272	1,806	4,971	3,866	1,219
Sarasota	306,546	42,676	98,225	2,717	14,419	12,528	6,296
Seminole	357,390	79,333	40,206	5,042	14,929	11,561	3,570
Volusia	425,601	75,268	95,869	4,759	19,202	15,744	6,674
Total	13,094,570	2,597,059	2,305,706	163,402	571,363	456,926	172,061

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
11	0	0	3.7	F
1	0	0	0.3	B
*	*	*	*	*
5	1	0	2.2	D
4	0	0	1.3	C
*	*	*	*	*
12	2	0	5.0	F
33	4	0	13.0	F
22	3	0	8.8	F
6	0	0	2.0	C
*	*	*	*	*
8	0	0	2.7	D
2	0	0	0.7	B
10	2	0	4.3	F
5	0	0	1.7	C
13	0	0	4.3	F
15	1	0	5.5	F
9	0	0	3.0	D
3	0	0	1.0	C
10	0	0	3.3	F
15	1	0	5.5	F
10	1	0	3.8	F
*	*	*	*	*
1	0	0	0.3	B
*	*	*	*	*
14	1	0	5.2	F
7	0	0	2.3	D
4	0	0	1.3	C

Notes :

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002

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Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bibb	155,441	33,401	19,956	2,125	7,110	5,123	1,668
Chatham	225,662	49,687	29,361	3,093	10,316	7,430	2,429
Cherokee	141,686	34,023	9,537	2,084	6,333	4,344	1,064
Cobb	583,541	122,851	41,839	7,662	27,262	18,670	4,623
Coweta	89,401	21,245	7,253	1,336	3,999	2,798	775
Dawson	15,945	3,590	1,413	227	722	511	146
DeKalb	596,853	118,231	48,097	7,480	28,500	19,460	4,997
Douglas	91,175	21,103	6,887	1,332	4,112	2,842	745
Fannin	18,945	3,403	3,552	219	889	692	275
Fayette	92,378	21,120	8,225	1,346	4,109	2,935	841
Fulton	744,827	151,013	66,479	9,494	35,387	24,315	6,541
Glynn	67,945	14,271	10,070	901	3,106	2,304	811
Gwinnett	545,632	128,842	31,673	7,940	24,529	16,568	3,745
Henry	113,443	26,019	8,370	1,626	5,148	3,585	951
Murray	33,922	7,973	2,782	503	1,528	1,061	292
Muscogee	182,058	40,478	21,430	2,545	8,345	5,893	1,832
Paulding	79,587	20,020	4,133	1,238	3,533	2,375	544
Richmond	190,310	41,767	20,512	2,632	8,819	6,122	1,809
Rockdale	68,968	15,612	6,549	990	3,106	2,203	641
Sumter	31,362	7,538	3,867	479	1,392	987	319
Total	4,069,081	882,187	351,985	55,256	188,247	130,218	35,047

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
42	10	1	19.7	F
4	0	0	1.3	C
*	*	*	*	*
*	*	*	*	*
*	*	*	*	*
24	0	0	8.0	F
60	19	3	31.5	F
71	14	1	31.3	F
*	*	*	*	*
55	15	3	27.8	F
86	22	9	45.7	F
3	0	0	1.0	C
43	11	1	20.5	F
*	*	*	*	*
*	*	*	*	*
28	1	0	9.8	F
49	6	0	19.3	F
24	4	0	10.0	F
65	24	3	35.7	F
10	0	0	3.3	F

Notes:

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- (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 (1998-2000), 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.
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HAWAII

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Hawaii	142,390	33,251	19,080	2,077	7,445	4,661	1,603
Honolulu	864,571	169,445	120,105	10,674	48,424	29,632	9,904
Total	1,006,961	202,696	139,185	12,751	55,868	34,292	11,507

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
*	*	*	*	*
0	0	0	0.0	A

Notes:

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IDAHO

At-Risk Groups								Number of High Ozone Days in the Unhealthy Ranges				
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	1998-2000				
								Orange	Red	Purple	Wgt. Avg	Grade
Butte	3,012	737	389	50	160	95	34	0	0	0	0.0	A
Total	3,012	737	389	50	160	95	34					

Notes:

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Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups								1998-2000				
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple	Wgt. Avg	Grade
Adams	66,951	14,189	11,565	901	3,937	2,292	873	3	0	0	1.0	C
Champaign	170,272	31,908	16,962	1,984	11,137	5,634	1,494	8	0	0	2.7	D
Cook	5,192,326	1,130,940	636,888	70,929	304,153	170,403	54,177	17	0	0	5.7	F
DuPage	892,547	197,264	84,017	12,334	51,458	28,693	8,138	1	0	0	0.3	B
Effingham	33,786	8,512	4,792	530	1,868	1,072	378	7	0	0	2.3	D
Hamilton	8,583	1,717	1,641	110	506	303	122	6	0	0	2.0	C
Jersey	21,573	4,692	2,946	303	1,249	714	244	19	0	0	6.3	F
Kane	402,622	104,783	32,998	6,533	21,919	12,046	3,280	1	0	0	0.3	B
Lake	617,975	145,183	55,113	9,026	35,077	19,407	5,414	12	1	0	4.5	F
McHenry	246,812	60,806	20,816	3,792	13,598	7,597	2,100	7	0	0	2.3	D
Macon	113,219	23,769	17,500	1,516	6,643	3,844	1,385	5	0	0	1.7	C
Macoupin	49,020	10,367	8,432	668	2,859	1,675	640	8	0	0	2.7	D
Madison	259,434	54,685	36,681	3,479	15,200	8,727	3,005	19	1	0	6.8	F
Peoria	181,126	39,035	25,887	2,484	10,621	6,034	2,082	4	0	0	1.3	C
Randolph	33,600	6,690	5,150	428	2,018	1,147	402	4	0	0	1.3	C
Rock Island	147,522	31,246	22,447	1,976	8,663	4,998	1,784	0	0	0	0.0	A
Saint Clair	260,050	61,982	33,632	3,921	14,675	8,293	2,760	7	0	0	2.3	D
Sangamon	191,306	40,938	26,024	2,568	11,174	6,387	2,143	3	0	0	1.0	C
Will	478,392	119,541	41,532	7,537	26,331	14,567	4,065	8	0	0	2.7	D
Winnebago	268,126	58,411	35,151	3,702	15,543	8,857	2,940	1	0	0	0.3	B
Total	9,635,242	2,146,658	1,120,174	134,721	558,631	312,690	97,427					

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INDIANA

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Allen	316,471	71,809	37,121	4,529	18,261	10,176	3,182
Boone	44,835	9,907	5,391	631	2,554	1,470	476
Clark	95,121	19,241	12,047	1,246	5,653	3,191	1,037
Elkhart	174,680	40,862	19,635	2,565	10,060	5,569	1,730
Floyd	72,243	15,373	8,785	985	4,226	2,387	767
Gibson	32,230	6,666	5,040	424	1,911	1,102	399
Greene	33,158	6,769	5,005	437	1,969	1,134	406
Hamilton	172,094	40,622	13,450	2,554	9,523	5,374	1,454
Hancock	55,617	11,831	6,196	770	3,233	1,830	576
Hendricks	98,826	21,320	9,997	1,385	5,702	3,204	959
Huntington	37,377	8,467	5,173	534	2,177	1,223	417
Jackson	41,319	8,929	5,472	577	2,413	1,367	461
Johnson	112,724	24,104	11,936	1,565	6,610	3,658	1,102
Lake	480,619	108,292	62,500	6,921	27,789	15,643	5,212
La Porte	109,939	22,147	14,817	1,421	6,560	3,714	1,235
Madison	130,990	25,287	19,099	1,645	8,011	4,511	1,565
Marion	810,946	172,540	92,625	10,776	48,173	26,595	8,064
Morgan	67,003	14,634	7,101	949	3,901	2,177	670
Perry	19,091	3,926	2,724	254	1,135	642	220
Porter	147,758	32,408	15,741	2,075	8,681	4,777	1,444
Posey	26,292	5,958	3,196	377	1,496	854	276
Saint Joseph	258,537	54,083	35,671	3,403	15,852	8,636	2,868
Shelby	43,630	9,492	5,499	611	2,532	1,434	471
Vanderburgh	167,922	32,614	26,110	2,042	10,406	5,825	2,046
Vigo	104,349	19,708	14,893	1,256	6,755	3,584	1,192
Warrick	52,557	11,698	5,423	758	2,988	1,686	509
Total	3,079,333	671,092	363,051	42,619	180,040	100,601	31,653

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
24	0	0	8.0	F
*	*	*	*	*
34	2	1	13.0	F
2	0	0	0.7	B
21	3	0	8.5	F
*	*	*	*	*
*	*	*	*	*
37	1	0	12.8	F
31	1	0	10.8	F
*	*	*	*	*
*	*	*	*	*
25	0	0	8.3	F
26	1	0	9.2	F
22	2	0	8.3	F
27	2	0	10.0	F
30	0	0	10.0	F
26	0	0	8.7	F
33	1	0	11.5	F
24	3	0	9.5	F
29	2	0	10.7	F
22	0	0	7.3	F
*	*	*	*	*
28	1	0	9.8	F
7	0	0	2.3	D
25	2	0	9.3	F

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Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bremer	23,440	4,470	3,769	296	1,124	813	296
Clinton	49,612	10,227	7,941	670	2,328	1,690	623
Harrison	15,216	3,235	2,650	212	703	519	202
Linn	184,891	36,354	22,900	2,364	8,888	6,224	1,986
Palo Alto	9,917	2,035	2,095	134	462	350	150
Polk	364,672	73,794	40,623	4,718	17,517	12,090	3,646
Scott	159,458	35,432	18,473	2,279	7,382	5,150	1,619
Story	75,373	12,253	7,816	779	3,893	2,568	678
Van Buren	7,873	1,631	1,524	105	369	276	113
Warren	40,614	8,729	4,602	574	1,884	1,321	415
Total	931,066	188,160	112,393	12,131	44,552	31,002	9,728

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
*	*	*	*	*
*	*	*	*	*
1	0	0	0.3	B
3	0	0	1.0	C
0	0	0	0.0	A
0	0	0	0.0	A
5	0	0	1.7	C
0	0	0	0.0	A
1	0	0	0.3	B
1	0	0	0.3	B

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KANSAS



At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Linn	9,296	1,919	1,733	127	524	324	131
Sedgwick	451,684	102,652	51,715	6,533	25,761	14,452	4,482
Sumner	27,173	6,297	4,258	414	1,478	887	331
Trego	3,261	662	785	43	181	117	53
Wyandotte	151,379	34,851	18,696	2,245	8,549	4,839	1,571
Total	642,793	146,381	77,187	9,362	36,493	20,619	6,568

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
9	0	0	3.0	D
6	0	0	2.0	C
*	*	*	*	*
*	*	*	*	*
9	1	0	3.5	F

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KENTUCKY

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bell	29,028	5,876	3,860	389	1,693	972	325
Boone	83,356	19,448	6,935	1,214	4,591	2,619	716
Boyd	48,843	8,508	7,571	552	3,024	1,752	625
Bullitt	60,955	13,388	4,443	877	3,390	1,920	505
Campbell	87,203	18,657	11,009	1,165	5,053	2,901	939
Carter	27,106	5,403	3,316	358	1,595	910	295
Christian	71,941	15,765	7,753	969	4,107	2,312	664
Daviess	91,179	19,039	12,265	1,213	5,327	3,067	1,033
Edmonson	11,595	2,208	1,574	149	697	399	138
Fayette	243,785	43,384	25,401	2,726	14,658	8,297	2,325
Graves	36,254	6,850	5,803	441	2,201	1,277	465
Greenup	36,732	6,766	5,340	447	2,229	1,288	452
Hancock	8,977	1,988	865	131	502	287	85
Hardin	91,567	20,403	8,954	1,292	5,136	2,892	809
Henderson	44,410	9,176	5,720	581	2,593	1,494	490
Jefferson	672,900	126,653	93,743	8,068	40,381	23,296	7,792
Jessamine	37,300	7,966	3,559	505	2,119	1,205	340
Kenton	147,221	32,620	16,214	2,036	8,339	4,777	1,450
Lawrence	15,800	3,397	1,882	223	905	519	168
Livingston	9,481	1,636	1,399	106	589	340	119
McCracken	64,407	12,099	10,238	774	3,900	2,267	818
McLean	9,897	1,894	1,404	123	597	344	119
Oldham	45,821	10,189	3,102	649	2,533	1,445	368
Perry	30,805	6,627	3,328	434	1,743	995	302
Pike	71,526	14,803	8,220	973	4,110	2,355	736
Pulaski	57,110	10,557	8,449	687	3,475	2,005	704
Scott	32,249	6,953	2,880	441	1,838	1,042	291
Simpson	16,587	3,451	2,120	222	965	555	182
Trigg	12,593	2,146	2,211	142	794	461	177
Warren	87,683	16,363	9,631	1,048	5,274	2,965	874
Total	2,284,311	454,213	279,189	28,932	134,361	76,956	24,308

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
12	0	0	4.0	F
13	0	0	4.3	F
12	0	0	4.0	F
26	0	0	8.7	F
21	0	0	7.0	F
25	0	0	8.3	F
18	2	0	7.0	F
14	1	0	5.2	F
34	1	0	11.8	F
15	1	0	5.5	F
17	2	0	6.7	F
22	4	0	9.3	F
21	1	0	7.5	F
14	0	0	4.7	F
15	0	0	5.0	F
41	4	0	15.7	F
9	0	0	3.0	D
18	1	0	6.5	F
*	*	*	*	*
34	5	0	13.8	F
17	1	0	6.2	F
19	2	0	7.3	F
45	5	0	17.5	F
1	0	0	0.3	B
6	0	0	2.0	C
20	0	0	6.7	F
8	0	0	2.7	D
30	1	0	10.5	F
14	0	0	4.7	F
*	*	*	*	*

Notes: **EMBARGOED FOR RELEASE UNTIL MAY 1, 2002**

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- (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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- (4) **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).
- (5) **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 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 (1998-2000), 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.
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LOUISIANA

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



Number of High Ozone Days in the Unhealthy Ranges

County	At-Risk Groups							1998-2000				
	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple	Wgt. Avg	Grade
Ascension	74,049	18,481	5,593	1,186	2,602	2,228	593	19	1	1	7.5	F
Beauregard	32,265	7,054	3,758	461	1,195	1,048	334	6	0	0	2.0	C
Bossier	93,374	20,667	10,529	1,329	3,459	3,025	945	22	1	0	7.8	F
Caddo	241,502	52,418	33,143	3,387	9,030	7,985	2,730	18	0	0	6.0	F
Calcasieu	180,607	40,181	20,734	2,580	6,693	5,863	1,857	26	0	0	8.7	F
East Baton Rouge	393,294	82,569	39,731	5,318	14,829	12,706	3,643	51	12	1	23.7	F
Grant	19,211	4,441	2,252	287	701	618	201	4	0	0	1.3	C
Iberville	31,357	7,023	3,371	449	1,158	1,003	302	51	3	0	18.5	F
Jefferson	447,790	90,466	53,353	5,877	17,059	14,926	4,705	28	0	0	9.3	F
Lafayette	187,403	42,361	17,697	2,680	6,906	5,925	1,670	14	2	0	5.7	F
Lafourche	89,463	20,423	9,400	1,309	3,284	2,846	859	15	1	0	5.5	F
Livingston	91,182	21,857	7,691	1,415	3,251	2,805	784	26	2	0	9.7	F
Orleans	460,913	97,914	55,977	6,356	17,295	15,047	4,754	1	0	0	0.3	B
Ouachita	146,672	32,924	16,840	2,150	5,393	4,689	1,472	3	0	0	1.0	C
Pointe Coupee	23,440	5,433	3,024	349	857	756	254	3	1	0	1.5	C
Saint Bernard	65,406	13,183	9,216	854	2,506	2,218	760	12	0	0	4.0	F
Saint Charles	48,640	12,056	3,880	756	1,729	1,489	406	14	2	0	5.7	F
Saint James	21,197	5,174	2,240	326	763	663	203	14	0	0	4.7	F
Saint John the Baptist	42,494	11,394	3,654	709	1,462	1,257	349	19	0	0	6.3	F
Saint Mary	56,795	14,068	5,884	899	2,018	1,758	539	16	1	0	5.8	F
West Baton Rouge	20,421	4,697	1,975	299	747	647	189	15	4	0	7.0	F
Total	2,767,475	604,784	309,942	38,975	102,936	89,502	27,548					

Notes:

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- (4) **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).
- (5) **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 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).
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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) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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.
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MAINE



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Cumberland	256,437	45,369	33,776	2,941	18,060	8,909	2,861
Hancock	49,670	8,909	7,542	577	3,453	1,754	614
Kennebec	115,224	21,622	16,123	1,412	7,922	3,974	1,341
Knox	38,193	6,949	6,410	452	2,634	1,354	499
Oxford	54,288	10,595	8,608	691	3,656	1,883	686
Penobscot	144,432	26,140	18,452	1,717	10,071	4,976	1,595
Piscataquis	18,077	3,427	3,144	229	1,216	635	243
Sagadahoc	36,267	7,216	4,309	462	2,468	1,216	379
York	177,588	34,730	23,783	2,249	12,075	6,031	1,993
Total	890,176	164,957	122,147	10,730	61,554	30,733	10,211

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
5	2	0	2.7	D
13	4	0	6.3	F
4	0	0	1.3	C
4	1	0	1.8	C
0	0	0	0.0	A
2	0	0	0.7	B
1	0	0	0.3	B
6	3	0	3.5	F
13	2	0	5.3	F

Notes:

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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) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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.
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MARYLAND



Number of High Ozone Days in the Unhealthy Ranges

County	At-Risk Groups						
	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Anne Arundel	480,483	101,636	47,939	6,454	26,224	15,713	4,598
Baltimore	723,914	135,787	114,397	8,547	40,150	25,399	8,988
Calvert	73,748	17,955	6,884	1,135	3,782	2,286	662
Carroll	152,468	34,866	16,250	2,197	8,031	4,891	1,488
Cecil	84,238	19,756	8,731	1,267	4,390	2,658	807
Charles	120,946	30,607	9,298	1,934	6,227	3,637	969
Frederick	190,869	43,999	17,858	2,763	10,198	6,022	1,706
Harford	217,908	50,966	21,640	3,196	11,397	6,915	2,047
Kent	19,089	3,382	3,580	217	1,084	692	268
Montgomery	852,174	174,031	99,341	10,917	46,446	28,451	8,765
Prince George's	781,781	166,732	62,253	10,502	43,664	24,972	6,471
Washington	127,791	25,034	18,591	1,590	7,047	4,394	1,508
Baltimore (city)	632,681	138,008	83,124	8,597	34,316	20,826	6,779
Total	3,825,409	804,751	426,762	50,719	208,639	126,029	38,277

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
76	17	0	33.8	F
29	8	0	13.7	F
25	0	0	8.3	F
37	2	0	13.3	F
47	8	3	21.7	F
56	10	0	23.7	F
31	2	0	11.3	F
43	10	1	20.0	F
37	7	0	15.8	F
38	2	0	13.7	F
51	8	0	21.0	F
*	*	*	*	*
*	*	*	*	*

Notes:

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- (2) City population estimates overlap with county population estimates causing an overestimate of disease. Therefore, city estimates were excluded from **total**.
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- (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 population estimates (US Census).
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MASSACHUSETTS



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Barnstable	212,519	38,182	49,205	2,380	13,484	7,880	3,388
Berkshire	132,218	25,143	23,732	1,611	8,435	4,667	1,778
Bristol	520,258	109,764	75,564	6,956	32,603	17,497	6,062
Essex	704,407	148,018	99,836	9,242	44,424	23,759	8,096
Hampden	438,279	98,403	66,643	6,130	26,955	14,543	5,165
Hampshire	150,892	25,829	17,969	1,628	10,471	5,189	1,512
Middlesex	1,426,606	259,900	190,581	16,376	94,501	49,555	15,990
Suffolk	641,695	126,023	74,159	7,770	42,540	21,413	6,274
Worcester	738,629	160,439	98,521	10,004	46,287	24,432	8,050
Total	4,965,503	991,701	696,210	62,098	319,701	168,935	56,315

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
13	3	1	6.5	F
2	0	0	0.7	B
16	4	0	7.3	F
13	4	0	6.3	F
13	0	0	4.3	F
15	2	0	6.0	F
14	2	0	5.7	F
9	0	0	3.0	D
13	2	0	5.3	F

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Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups								1998-2000						
County	Total Population	14 and Under	65 and Over	Pediatric		Adult		Chronic		Orange	Red	Purple	Wgt. Avg	Grade
				Asthma	Asthma	Bronchitis	Emphysema							
Allegan	103,406	25,599	11,011	1,622	5,305	3,208	987	27	6	0	12.0	F		
Benzie	15,257	2,966	2,630	189	846	540	206	18	2	0	7.0	F		
Berrien	159,709	34,890	23,287	2,230	8,548	5,319	1,873	31	2	0	11.3	F		
Cass	50,129	10,732	7,139	689	2,708	1,682	589	23	1	0	8.2	F		
Clinton	64,054	14,641	6,417	943	3,412	2,041	614	7	0	0	2.3	D		
Genesee	437,349	98,481	50,098	6,291	23,417	14,135	4,461	18	2	0	7.0	F		
Grand Traverse	75,352	16,701	9,670	1,053	3,985	2,457	797	*	*	*	*	*		
Huron	35,283	7,619	6,562	489	1,861	1,207	481	10	1	0	3.8	F		
Ingham	285,123	58,281	28,137	3,659	16,156	9,228	2,510	10	0	0	3.3	F		
Kalamazoo	229,867	46,155	26,550	2,916	12,969	7,639	2,304	15	0	0	5.0	F		
Kent	550,388	131,617	59,211	8,175	28,840	17,288	5,180	19	0	0	6.3	F		
Lenawee	99,780	22,176	12,092	1,449	5,302	3,216	1,035	7	0	0	2.3	D		
Macomb	792,082	148,836	113,369	9,602	44,503	27,455	9,354	23	3	0	9.2	F		
Mason	27,966	5,942	4,656	381	1,500	954	359	19	4	0	8.3	F		
Missaukee	14,151	3,471	2,049	219	727	457	165	9	0	0	3.0	D		
Muskegon	168,037	38,999	21,635	2,453	8,838	5,430	1,799	30	2	1	11.7	F		
Oakland	1,179,978	234,856	135,513	15,014	65,398	39,632	12,254	12	0	0	4.0	F		
Ottawa	230,261	55,806	23,692	3,503	12,075	7,161	2,122	15	0	0	5.0	F		
Saint Clair	161,755	36,189	19,718	2,330	8,618	5,249	1,704	19	1	0	6.8	F		
Washtenaw	306,073	55,379	25,783	3,474	18,012	10,167	2,541	9	1	0	3.5	F		
Wayne	2,106,495	467,161	265,899	29,608	112,679	68,725	22,317	22	0	0	7.3	F		
Total	7,092,495	1,516,497	855,118	96,291	385,700	233,189	73,651							

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(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+. **EMBARGOED FOR RELEASE UNTIL MAY 1, 2002**

MINNESOTA

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Anoka	298,948	70,710	25,816	4,571	15,160	9,216	2,558
Dakota	349,131	84,875	24,577	5,386	17,457	10,572	2,682
Lake	10,765	1,901	2,176	128	594	395	164
Mille Lacs	21,350	4,965	3,540	321	1,098	706	272
Saint Louis	193,433	37,359	31,395	2,467	10,676	6,688	2,445
Washington	202,606	48,878	13,273	3,174	9,992	6,150	1,577
Total	1,076,233	248,688	100,777	16,046	54,977	33,727	9,698

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
1	0	0	0.3	B
0	0	0	0.0	A
0	0	0	0.0	A
*	*	*	*	*
0	0	0	0.0	A
1	0	0	0.3	B

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 1999 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 2000 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 1999 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 (1998-2000), 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+.



MISSISSIPPI

Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Adams	33,657	7,296	5,162	467	1,670	1,129	408
Bolivar	39,826	10,265	4,378	663	1,890	1,191	364
DeSoto	102,131	22,795	9,322	1,457	5,052	3,267	937
Hancock	41,518	8,807	6,202	564	2,077	1,407	504
Harrison	178,567	39,634	21,304	2,493	8,923	5,794	1,817
Hinds	245,737	52,629	27,110	3,346	12,453	7,956	2,368
Jackson	133,120	29,794	13,383	1,931	6,551	4,257	1,274
Lauderdale	75,978	16,385	10,334	1,050	3,808	2,505	839
Lee	75,211	16,683	8,404	1,060	3,731	2,432	749
Madison	74,562	17,466	7,197	1,096	3,654	2,319	650
Panola	33,913	8,403	3,920	542	1,611	1,049	335
Warren	49,148	11,358	5,819	730	2,388	1,568	501
Total	1,083,368	241,515	122,535	15,399	53,807	34,873	10,745

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
9	0	0	3.0	D
*	*	*	*	*
28	1	0	9.8	F
19	0	0	6.3	F
*	*	*	*	*
4	0	0	1.3	C
20	3	0	8.2	F
5	0	0	1.7	C
20	0	0	6.7	F
6	0	0	2.0	C
*	*	*	*	*
4	0	0	1.3	C

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.
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- (5) **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 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 (1998-2000), 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+.

MISSOURI



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Cass	83,099	19,268	9,287	1,241	4,328	2,645	830
Cedar	13,395	2,525	2,865	166	712	487	208
Clay	180,111	37,341	19,768	2,387	9,873	5,937	1,796
Greene	227,002	41,875	31,243	2,702	13,199	7,785	2,531
Jackson	654,484	139,147	84,918	8,815	35,478	21,649	7,038
Jefferson	198,116	47,725	17,747	3,034	10,351	6,115	1,723
Monroe	9,137	2,079	1,608	132	467	307	120
Platte	71,688	14,940	6,875	961	3,915	2,334	667
Saint Charles	280,448	68,480	24,096	4,297	14,599	8,587	2,343
Sainte Genevieve	17,462	3,878	2,584	250	909	578	206
Saint Louis	996,181	196,859	143,022	12,584	54,527	34,063	11,641
Saint Louis (city)	333,960	74,584	47,214	4,702	17,911	10,897	3,677
Total	2,731,123	574,117	344,013	36,569	148,359	90,486	29,105

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
*	*	*	*	*
15	0	0	5.0	F
21	2	0	8.0	F
3	1	0	1.5	C
*	*	*	*	*
19	3	0	7.8	F
8	1	0	3.2	D
10	0	0	3.3	F
46	2	1	17.0	F
21	2	0	8.0	F
31	2	0	11.3	F
13	1	0	4.8	F

Notes:

- (1) **Total** represents the at-risk populations in counties 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 population estimates (US Census).
- (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) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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+.



MONTANA

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Flathead	72,773	14,947	9,317	983	4,501	2,456	831
Total	72,773	14,947	9,317	983	4,501	2,456	831

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
0	0	0	0.0	A

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 1999 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 2000 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 1999 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 (1998-2000), 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+.



NEBRASKA

At-Risk Groups								Number of High Ozone Days in the Unhealthy Ranges 1998-2000				
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple	Wgt. Avg	Grade
Douglas	446,277	96,629	49,517	6,213	21,900	14,435	4,385	2	0	0	0.7	B
Lancaster	237,657	46,192	25,881	2,949	12,283	7,875	2,273	0	0	0	0.0	A
Total	683,934	142,821	75,398	9,162	34,182	22,310	6,658					

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 1999 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 2000 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 1999 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 (1998-2000), 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+.



NEVADA

At-Risk Groups								Number of High Ozone Days in the Unhealthy Ranges 1998-2000				
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple	Wgt. Avg	Grade
Clark	1,217,155	279,268	136,605	17,363	73,744	39,409	12,315	15	1	0	5.5	F
Douglas	37,602	8,551	5,726	527	2,290	1,258	455	0	0	0	0.0	A
Washoe	319,816	69,764	34,259	4,341	19,640	10,454	3,147	1	0	0	0.3	B
White Pine	9,843	2,339	1,200	145	588	318	104	0	0	0	0.0	A
Carson City	50,046	10,037	8,072	631	3,202	1,736	632	0	0	0	0.0	A
Total	1,584,416	359,922	177,790	22,376	96,263	51,439	16,021					

Notes:

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- (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 population estimates (US Census).
- (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).
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- (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) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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+A877, C=1.0-2.0, D=2.1-3.2, F=3.3+.



NEW HAMPSHIRE

Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Belknap	53,680	11,048	8,777	724	3,363	1,819	669
Carroll	40,184	7,899	7,111	503	2,597	1,407	535
Cheshire	72,401	14,626	9,870	936	4,539	2,438	808
Coos	32,725	6,422	6,011	424	2,100	1,143	448
Grafton	78,570	15,046	10,537	958	4,962	2,670	859
Hillsborough	367,233	78,955	39,247	5,029	22,501	11,897	3,532
Merrimack	129,931	27,534	15,717	1,757	8,028	4,268	1,342
Rockingham	275,488	59,508	28,200	3,774	16,898	8,902	2,596
Strafford	110,667	22,107	12,735	1,399	6,880	3,674	1,100
Sullivan	40,255	8,356	6,380	541	2,531	1,365	496
Total	1,201,134	251,501	144,585	16,044	74,401	39,583	12,385

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
*	*	*	*	*
0	0	0	0.0	A
3	0	0	1.0	C
*	*	*	*	*
0	0	0	0.0	A
12	0	0	4.0	F
0	0	0	0.0	A
11	1	0	4.2	F
2	0	0	0.7	B
1	0	0	0.3	B

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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 1999 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 2000 based on state rates (BRFSS) applied to county population estimates (US Census).
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- (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) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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.
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NEW JERSEY



Number of High Ozone Days in the Unhealthy Ranges

County	At-Risk Groups						
	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Atlantic	239,626	49,877	34,313	3,103	11,249	8,090	2,744
Bergen	857,052	153,185	134,265	9,676	40,783	30,684	10,936
Camden	503,093	120,751	62,772	7,468	22,432	16,087	5,244
Cumberland	140,112	32,565	19,242	2,039	6,297	4,551	1,551
Essex	747,355	159,979	91,844	10,049	34,890	24,669	7,840
Gloucester	250,492	59,903	28,609	3,707	11,242	7,965	2,490
Hudson	552,819	110,046	67,493	6,904	26,477	18,615	5,807
Hunterdon	124,553	26,105	12,464	1,634	5,718	4,131	1,225
Mercer	333,861	67,441	43,653	4,208	15,998	11,293	3,659
Middlesex	717,949	138,289	92,598	8,651	34,871	24,513	7,803
Monmouth	611,444	132,059	77,185	8,270	27,818	20,338	6,656
Morris	463,545	90,930	54,651	5,765	21,702	15,819	5,015
Ocean	497,533	101,677	113,451	6,331	22,655	17,729	7,665
Passaic	485,064	107,398	58,557	6,715	22,504	15,825	5,001
Total	6,524,498	1,350,205	891,097	84,521	304,636	220,310	73,636

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
39	0	0	13.0	F
*	*	*	*	*
60	11	0	25.5	F
35	3	0	13.2	F
*	*	*	*	*
43	7	0	17.8	F
22	4	1	10.0	F
47	5	0	18.2	F
41	7	3	19.2	F
41	5	2	17.5	F
33	3	0	12.5	F
46	3	0	16.8	F
51	9	1	22.2	F
24	0	0	8.0	F

Notes:

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- (4) **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).
- (5) **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 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 (1998-2000), 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+.

NEW MEXICO



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Bernalillo	523,472	109,010	60,335	6,943	27,098	17,317	5,361
Dona Ana	170,361	41,653	16,989	2,666	8,469	5,236	1,542
Eddy	53,122	12,805	7,612	827	2,565	1,710	616
Sandoval	90,253	23,789	9,522	1,482	4,274	2,728	831
San Juan	109,899	31,753	9,909	2,011	4,944	3,146	927
Valencia	65,095	16,300	6,248	1,041	3,098	2,005	602
Total	1,012,202	235,310	110,615	14,970	50,448	32,141	9,878

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
1	0	0	0.3	B
8	0	0	2.7	D
0	0	0	0.0	A
1	0	0	0.3	B
2	0	0	0.7	B
0	0	0	0.0	A

Notes:

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NEW YORK



At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Albany	292,006	54,106	43,202	3,387	17,359	10,157	3,420
Bronx	1,194,099	299,208	129,829	18,491	64,408	37,060	11,323
Chautauqua	137,431	29,718	21,900	1,866	7,756	4,639	1,688
Chemung	91,738	19,815	13,972	1,241	5,175	3,088	1,098
Dutchess	268,237	54,837	32,459	3,425	15,484	8,999	2,826
Erie	925,957	183,892	148,132	11,515	53,668	32,106	11,545
Essex	37,507	7,574	5,900	476	2,152	1,293	464
Hamilton	5,190	879	1,075	57	311	195	81
Herkimer	63,354	13,815	10,422	874	3,540	2,142	799
Jefferson	109,920	26,169	11,940	1,608	6,083	3,442	1,010
Madison	71,127	15,450	8,571	965	4,074	2,334	733
Monroe	712,419	152,635	93,327	9,443	40,549	23,701	7,721
New York	1,551,844	239,248	195,533	14,914	96,302	55,985	17,262
Niagara	216,164	45,834	34,300	2,868	12,246	7,361	2,671
Oneida	229,714	47,135	37,597	2,954	13,168	7,871	2,856
Onondaga	456,215	96,427	63,676	5,976	26,096	15,303	5,126
Orange	334,199	81,318	34,166	5,028	18,187	10,460	3,103
Putnam	94,844	20,441	9,295	1,286	5,364	3,100	910
Queens	2,000,642	372,615	287,434	23,379	118,107	69,810	23,543
Richmond	413,280	88,336	48,988	5,549	23,445	13,665	4,307
Saratoga	199,733	43,350	22,848	2,718	11,268	6,545	2,025
Schenectady	143,871	28,359	24,414	1,772	8,329	5,022	1,853
Suffolk	1,383,847	287,004	163,323	18,288	79,152	46,190	14,644
Ulster	167,293	33,204	23,016	2,070	9,712	5,721	1,900
Wayne	95,521	22,973	11,350	1,422	5,200	3,054	983
Westchester	905,572	170,560	131,050	10,692	53,377	31,738	10,894
Total	12,101,724	2,434,902	1,607,719	152,264	700,512	410,981	134,784

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
4	0	0	1.3	C
8	2	0	3.7	F
25	3	0	9.8	F
5	0	0	1.7	C
18	0	0	6.0	F
22	1	0	7.8	F
8	0	0	2.7	D
3	0	0	1.0	C
1	0	0	0.3	B
11	0	0	3.7	F
4	0	0	1.3	C
9	0	0	3.0	D
30	5	1	13.2	F
16	0	0	5.3	F
3	0	0	1.0	C
8	0	0	2.7	D
14	1	0	5.2	F
23	1	0	8.2	F
20	1	0	7.2	F
31	4	2	13.7	F
9	0	0	3.0	D
3	0	0	1.0	C
26	8	0	12.7	F
5	0	0	1.7	C
12	0	0	4.0	F
14	6	0	7.7	F

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- (9) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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.
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NORTH CAROLINA

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Alexander	31,984	6,810	3,845	434	1,672	1,064	344
Avery	15,844	3,077	2,608	198	868	553	204
Buncombe	196,274	38,359	31,925	2,435	10,684	6,850	2,502
Caldwell	76,429	15,476	10,179	989	4,084	2,601	875
Camden	6,866	1,410	939	89	367	235	81
Caswell	22,436	4,281	3,159	277	1,217	775	264
Chatham	46,503	9,106	7,359	568	2,516	1,619	578
Cumberland	283,650	73,099	23,563	4,460	13,818	8,488	2,226
Davie	32,693	6,565	4,827	423	1,750	1,123	397
Duplin	43,379	9,807	5,850	626	2,231	1,423	488
Durham	204,097	41,910	21,646	2,596	10,689	6,697	1,913
Edgecombe	54,659	13,293	6,095	837	2,709	1,721	540
Forsyth	288,810	56,826	38,563	3,553	15,574	9,881	3,242
Franklin	45,612	9,841	5,310	622	2,367	1,503	474
Granville	44,546	9,160	5,255	583	2,344	1,492	473
Guilford	391,380	77,048	47,842	4,828	21,105	13,278	4,172
Haywood	52,002	9,095	10,312	585	2,974	1,920	778
Jackson	30,260	5,358	4,207	344	1,725	1,060	350
Johnston	110,850	24,592	11,495	1,555	5,677	3,604	1,095
Lenoir	58,842	12,778	8,374	826	3,064	1,960	688
Lincoln	58,895	12,735	7,695	803	3,079	1,962	655
Martin	26,133	5,793	3,894	372	1,360	870	313
Mecklenburg	648,400	142,086	59,252	8,762	33,083	20,869	5,759
New Hanover	150,895	29,796	20,129	1,887	8,128	5,134	1,685
Northampton	21,234	4,466	3,727	281	1,144	736	284
Person	33,856	7,245	4,586	457	1,775	1,136	386
Pitt	127,960	27,934	12,791	1,750	6,663	4,097	1,157
Rockingham	90,287	18,482	13,209	1,177	4,823	3,084	1,083
Rowan	126,585	27,021	17,797	1,684	6,713	4,277	1,474
Swain	12,341	2,707	1,814	173	647	413	147
Union	115,144	27,936	10,547	1,753	5,697	3,598	1,046
Wake	586,940	124,233	44,862	7,646	30,118	18,830	4,733
Yancey	16,860	3,201	3,039	206	932	600	232
Total	4,052,646	861,526	456,695	53,778	211,598	133,452	40,637

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
24	2	0	9.0	F
4	0	0	1.3	C
14	0	0	4.7	F
31	1	0	10.8	F
7	0	0	2.3	D
36	0	0	12.0	F
14	0	0	4.7	F
49	0	0	16.3	F
55	3	1	20.5	F
21	0	0	7.0	F
33	0	0	11.0	F
19	0	0	6.3	F
44	3	0	16.2	F
25	0	0	8.3	F
27	1	0	9.5	F
44	0	0	14.7	F
61	2	2	22.7	F
*	*	*	*	*
35	4	0	13.7	F
17	0	0	5.7	F
37	1	0	12.8	F
8	0	0	2.7	D
86	15	1	36.8	F
8	0	0	2.7	D
16	0	0	5.3	F
34	0	0	11.3	F
20	1	0	7.2	F
10	0	0	3.3	F
68	11	1	28.8	F
1	0	0	0.3	B
*	*	*	*	*
61	13	0	26.8	F
18	0	0	6.0	F

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NORTH DAKOTA



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Billings	1,066	245	129	17	52	34	12
Cass	118,405	22,267	11,796	1,447	6,937	3,927	1,092
Dunn	3,457	799	616	51	176	116	46
McKenzie	5,541	1,388	787	91	269	174	63
Mercer	9,210	2,247	1,237	145	447	291	100
Oliver	2,158	509	254	35	104	68	22
Steele	2,182	398	414	28	114	79	33
Total	142,019	27,853	15,233	1,813	8,099	4,688	1,368

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
0	0	0	0.0	A
0	0	0	0.0	A
*	*	*	*	*
*	*	*	*	*
0	0	0	0.0	A
0	0	0	0.0	A
0	0	0	0.0	A

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At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Allen	106,898	23,401	14,831	1,493	6,830	3,523	1,197
Ashtabula	103,344	22,549	15,033	1,459	6,575	3,431	1,211
Butler	333,486	70,879	35,332	4,508	21,428	10,877	3,234
Clark	144,962	29,487	20,990	1,904	9,376	4,927	1,716
Clermont	178,749	42,535	14,926	2,705	11,263	5,531	1,518
Clinton	40,701	9,025	4,964	576	2,579	1,324	425
Cuyahoga	1,371,717	271,896	217,329	17,207	91,010	47,344	16,926
Delaware	103,679	22,756	9,035	1,465	6,684	3,323	938
Franklin	1,027,821	211,788	103,096	13,294	67,761	33,530	9,428
Geauga	89,598	19,352	12,609	1,244	5,752	2,999	1,049
Greene	149,149	29,981	16,641	1,941	9,651	4,964	1,519
Hamilton	840,443	180,852	116,966	11,354	54,413	27,947	9,415
Jefferson	73,662	13,099	13,843	869	4,908	2,652	1,040
Knox	53,903	10,758	7,470	695	3,480	1,829	618
Lake	227,145	44,032	31,956	2,831	15,172	7,806	2,652
Lawrence	64,344	13,463	8,875	885	4,096	2,157	747
Licking	136,485	28,495	16,094	1,831	8,819	4,539	1,446
Logan	46,816	10,406	6,282	673	2,956	1,534	522
Lorain	282,100	61,377	34,779	3,970	18,032	9,199	2,966
Lucas	446,482	96,930	58,425	6,182	28,614	14,639	4,795
Madison	41,348	8,029	4,405	518	2,784	1,375	401
Mahoning	252,597	49,316	45,280	3,187	16,616	8,839	3,388
Medina	147,277	32,659	15,501	2,114	9,433	4,744	1,447
Miami	98,721	20,841	12,722	1,342	6,370	3,299	1,101
Montgomery	565,866	113,864	79,527	7,194	37,319	19,245	6,493
Portage	151,579	29,994	16,542	1,927	9,794	5,027	1,486
Preble	43,472	9,484	5,571	609	2,781	1,435	478
Stark	373,174	74,232	56,731	4,782	24,531	12,801	4,529

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
18	0	0	6.0	F
21	2	0	8.0	F
42	1	1	15.2	F
38	3	0	14.2	F
40	2	0	14.3	F
46	2	0	16.3	F
17	1	0	6.2	F
28	2	2	11.7	F
30	1	0	10.5	F
20	3	0	8.2	F
26	2	0	9.7	F
23	2	0	8.7	F
7	0	0	2.3	D
22	2	0	8.3	F
32	3	0	12.2	F
31	3	0	11.8	F
29	1	0	10.2	F
*	*	*	*	*
10	1	0	3.8	F
10	2	0	4.3	F
33	2	0	12.0	F
22	1	0	7.8	F
19	0	0	6.3	F
20	0	0	6.7	F
21	2	0	8.0	F
31	2	0	11.3	F
7	0	0	2.3	D
30	3	0	11.5	F

OHIO

(page 2 of 2)



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups								1998-2000				
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple	Wgt. Avg	Grade
Summit	537,856	107,289	75,348	6,829	35,574	18,304	6,171	28	1	0	9.8	F
Trumbull	225,339	43,685	35,386	2,847	14,837	7,807	2,816	32	2	0	11.7	F
Union	40,776	8,772	3,821	569	2,650	1,310	374	*	*	*	*	*
Warren	153,292	32,868	14,634	2,099	10,046	4,973	1,435	30	2	0	11.0	F
Washington	63,029	12,594	9,097	818	4,109	2,150	747	24	2	0	9.0	F
Wood	120,292	23,733	13,257	1,524	7,713	3,970	1,160	10	0	0	3.3	F
Total	8,636,102	1,780,421	1,147,298	113,447	563,957	289,351	95,389					

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OKLAHOMA

Number of High Ozone Days in the Unhealthy Ranges 1998-2000

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Cherokee	39,506	8,411	5,042	550	1,876	1,301	429
Cleveland	203,449	43,335	16,636	2,788	9,923	6,448	1,681
Comanche	106,621	25,730	10,948	1,624	4,934	3,304	971
Jefferson	6,518	1,264	1,359	85	303	231	97
Kay	46,448	9,961	8,089	636	2,152	1,586	610
Latimer	10,204	2,240	1,584	144	476	341	124
Love	8,581	1,790	1,331	119	399	290	107
McClain	26,706	5,703	3,425	378	1,246	886	301
Marshall	12,377	2,214	2,511	148	594	451	187
Mayes	38,270	7,990	6,441	520	1,784	1,316	504
Muskogee	70,091	15,281	10,610	989	3,247	2,337	842
Oklahoma	636,539	136,799	79,102	8,704	30,240	20,959	6,744
Okmulgee	38,788	8,334	5,845	546	1,803	1,302	473
Tulsa	548,296	117,639	64,760	7,461	26,125	18,007	5,650
Total	1,792,394	386,691	217,683	24,693	85,102	58,759	18,719

Orange	Red	Purple	Wgt. Avg	Grade
*	*	*	*	*
8	1	0	3.2	D
9	0	0	3.0	D
*	*	*	*	*
*	*	*	*	*
6	0	0	2.0	C
*	*	*	*	*
10	0	0	3.3	F
*	*	*	*	*
*	*	*	*	*
13	0	1	5.0	F
*	*	*	*	*
29	1	0	10.2	F

Notes:

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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) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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.
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OREGON



At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Clackamas	338,251	70,062	38,685	4,548	21,538	11,310	3,619
Columbia	45,368	10,237	5,182	664	2,809	1,479	483
Jackson	175,822	34,798	28,623	2,248	11,338	6,127	2,277
Lane	314,901	60,826	42,333	3,904	20,158	10,774	3,562
Marion	272,760	60,574	33,387	3,870	16,807	8,909	2,897
Total	1,147,102	236,497	148,210	15,233	72,650	38,600	12,837

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
2	1	0	1.2	C
0	0	0	0.0	A
5	0	0	1.7	C
1	0	0	0.3	B
1	0	0	0.3	B

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PENNSYLVANIA

(page 1 of 2)

Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Allegheny	1,256,806	222,513	226,468	14,150	64,414	45,241	17,031
Armstrong	73,001	14,260	13,163	927	3,596	2,556	987
Beaver	182,687	34,762	33,531	2,229	9,103	6,500	2,528
Berks	358,211	70,835	55,807	4,507	17,829	12,364	4,405
Blair	129,937	25,826	22,208	1,671	6,396	4,509	1,697
Bucks	594,047	124,212	74,580	7,913	29,059	19,800	6,416
Cambria	153,766	28,360	29,909	1,866	7,697	5,482	2,177
Centre	132,190	20,214	13,584	1,296	7,393	4,574	1,210
Chester	430,001	88,434	50,712	5,638	21,211	14,338	4,505
Clearfield	80,732	16,032	13,399	1,051	3,959	2,782	1,033
Dauphin	245,576	49,291	35,379	3,123	12,182	8,372	2,861
Delaware	541,502	105,440	86,898	6,675	27,194	18,778	6,721
Erie	276,993	59,550	39,475	3,808	13,485	9,183	3,144
Franklin	128,812	25,188	20,387	1,642	6,372	4,449	1,609
Greene	42,072	8,446	6,259	555	2,070	1,417	491
Lackawanna	206,520	37,080	40,845	2,398	10,472	7,467	2,975
Lancaster	460,035	102,273	64,845	6,450	22,164	15,154	5,187
Lawrence	94,508	18,091	18,147	1,171	4,691	3,358	1,336
Lehigh	299,855	56,840	50,397	3,599	15,105	10,538	3,858
Luzerne	312,000	54,166	62,436	3,527	15,905	11,390	4,560
Lycoming	116,709	23,861	18,449	1,531	5,727	3,985	1,440
Mercer	121,458	22,860	21,823	1,492	6,075	4,291	1,645
Monroe	128,541	27,391	15,923	1,725	6,293	4,259	1,366
Montgomery	724,087	134,207	118,617	8,530	36,614	25,586	9,270
Northampton	259,736	50,891	39,262	3,228	13,023	8,949	3,120
Perry	44,280	9,670	5,188	627	2,123	1,439	456
Philadelphia	1,417,601	303,866	206,580	19,091	69,466	47,290	16,237
Tioga	41,657	8,490	6,545	554	2,039	1,423	519
Washington	204,888	37,391	36,490	2,439	10,310	7,306	2,783
Westmoreland	370,658	66,725	67,344	4,319	18,734	13,325	5,116
York	376,586	75,641	50,383	4,842	18,638	12,756	4,239
Total	9,805,452	1,922,806	1,545,033	122,573	489,336	338,860	120,920

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
48	6	0	19.0	F
40	1	0	13.8	F
27	4	0	11.0	F
36	3	0	13.5	F
25	0	0	8.3	F
45	8	2	20.3	F
27	2	0	10.0	F
14	0	0	4.7	F
*	*	*	*	*
17	2	0	6.7	F
38	5	0	15.2	F
38	5	0	15.2	F
24	3	0	9.5	F
42	4	0	16.0	F
38	5	0	15.2	F
18	1	0	6.5	F
45	5	0	17.5	F
6	1	0	2.5	D
36	6	0	15.0	F
15	2	0	6.0	F
4	0	0	1.3	C
28	6	0	12.3	F
*	*	*	*	*
40	7	1	17.5	F
31	6	0	13.3	F
23	0	0	7.7	F
29	4	0	11.7	F
*	*	*	*	*
46	8	0	19.3	F
20	1	1	7.8	F
32	2	0	11.7	F

Notes: **EMBARGOED FOR RELEASE UNTIL MAY 1, 2002**

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RHODE ISLAND

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Kent	162,120	31,860	26,191	2,029	10,658	5,616	2,031
Providence	574,108	118,178	91,025	7,441	36,866	19,458	6,885
Washington	122,465	25,558	15,673	1,596	7,969	4,070	1,295
Total	858,693	175,596	132,889	11,067	55,494	29,144	10,211

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
15	1	0	5.5	F
5	1	0	2.2	D
13	2	1	6.0	F

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SOUTH CAROLINA

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Abbeville	24,681	4,857	3,661	311	1,282	851	298
Aiken	135,401	28,658	17,250	1,813	6,825	4,519	1,481
Anderson	162,793	31,224	21,839	2,014	8,448	5,626	1,894
Barnwell	21,784	5,110	2,633	326	1,054	695	225
Berkeley	142,300	36,657	10,698	2,270	6,627	4,236	1,087
Charleston	319,921	64,942	39,825	4,002	16,479	10,739	3,351
Cherokee	50,074	10,068	6,344	658	2,550	1,687	554
Chester	34,927	7,465	4,345	479	1,752	1,159	380
Colleton	37,659	8,361	4,673	539	1,858	1,233	408
Darlington	66,488	13,860	8,048	917	3,320	2,192	707
Edgefield	19,989	4,300	2,337	273	998	656	206
Greenville	358,936	69,668	42,535	4,411	18,592	12,220	3,825
Oconee	65,081	12,118	10,281	778	3,424	2,305	836
Pickens	108,126	19,076	13,302	1,218	5,839	3,744	1,154
Richland	307,279	56,811	30,429	3,656	16,054	10,243	2,818
Spartanburg	249,636	47,501	31,603	3,054	12,986	8,569	2,774
Union	30,356	5,676	4,625	368	1,589	1,064	378
Williamsburg	36,840	8,793	4,692	573	1,764	1,165	390
York	158,180	32,191	16,920	2,050	8,068	5,264	1,585
Total	2,330,451	467,336	276,040	29,710	119,509	78,167	24,351

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
25	0	0	8.3	F
36	0	0	12.0	F
36	4	0	14.0	F
25	0	0	8.3	F
7	0	0	2.3	D
7	0	0	2.3	D
27	1	0	9.5	F
30	2	0	11.0	F
7	0	0	2.3	D
23	0	0	7.7	F
20	1	0	7.2	F
*	*	*	*	*
16	0	0	5.3	F
18	0	0	6.0	F
34	2	0	12.3	F
30	1	0	10.5	F
11	1	0	4.2	F
1	0	0	0.3	B
13	0	0	4.3	F

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SOUTH DAKOTA

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Minnehaha	142,821	29,526	16,320	1,904	5,916	4,681	1,422
Pennington	88,117	19,856	10,220	1,262	3,564	2,816	867
Total	140,397	29,468	16,157	1,914	3,600	4,748	1,565

Number of High Ozone Days in the Unhealthy Ranges 1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
*	*	*	*	*
*	*	*	*	*

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TENNESSEE

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Anderson	71,004	13,530	11,175	860	4,063	2,498	902
Blount	102,785	18,989	13,931	1,218	5,846	3,587	1,200
Coffee	46,355	9,605	6,733	605	2,597	1,591	562
Davidson	530,050	100,831	61,248	6,300	29,209	17,961	5,380
Dickson	43,017	9,651	4,925	611	2,288	1,401	444
Hamilton	294,720	56,926	41,529	3,622	16,557	10,167	3,447
Haywood	19,416	4,711	2,677	297	1,006	619	214
Jefferson	45,104	7,646	5,877	505	2,642	1,603	530
Knox	376,039	69,261	47,737	4,368	21,218	12,998	4,119
Lawrence	39,626	8,380	5,672	532	2,194	1,343	471
Meigs	10,134	1,972	1,227	129	564	345	111
Montgomery	129,411	30,215	9,531	1,867	6,550	3,999	1,000
Putnam	59,735	10,832	8,044	687	3,422	2,082	680
Roane	50,008	8,975	8,403	583	2,933	1,799	673
Rutherford	171,401	39,142	12,862	2,451	8,726	5,334	1,355
Sevier	65,783	12,308	8,805	794	3,737	2,290	768
Shelby	873,000	198,542	87,419	12,444	45,147	27,737	8,018
Sullivan	150,231	25,699	23,602	1,680	8,847	5,417	1,947
Sumner	126,009	27,599	13,280	1,760	6,692	4,103	1,251
Williamson	123,793	28,813	10,651	1,809	6,373	3,921	1,109
Wilson	86,496	19,279	7,947	1,213	4,549	2,790	805
Total	3,414,117	702,906	393,275	44,336	185,160	113,587	34,986

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
36	0	0	12.0	F
82	10	0	32.3	F
*	*	*	*	*
34	1	0	11.8	F
*	*	*	*	*
44	10	0	19.7	F
35	2	0	12.7	F
46	11	0	20.8	F
71	14	0	30.7	F
32	2	0	11.7	F
*	*	*	*	*
*	*	*	*	*
35	1	0	12.2	F
*	*	*	*	*
20	1	0	7.2	F
98	13	0	39.2	F
57	8	0	23.0	F
35	3	0	13.2	F
60	7	0	23.5	F
33	2	0	12.0	F
24	1	0	8.5	F

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Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups								1998-2000				
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple	Wgt. Avg	Grade
Bexar	1,372,867	337,114	145,144	21,286	63,671	42,528	12,846	20	1	0	7.2	F
Brazoria	234,303	57,480	20,295	3,610	10,695	7,232	2,034	10	5	1	6.5	F
Brewster	8,793	1,748	1,365	110	449	303	107	0	0	0	0.0	A
Cameron	329,131	95,633	33,831	6,128	14,081	9,378	2,909	1	0	0	0.3	B
Collin	456,612	109,851	23,392	6,967	20,768	13,778	3,178	56	3	1	20.8	F
Dallas	2,062,100	466,808	177,192	29,232	98,344	65,066	17,612	54	6	1	21.7	F
Denton	404,074	94,764	20,076	5,881	19,331	12,198	2,614	56	10	1	24.3	F
Ellis	107,580	27,634	9,818	1,752	4,826	3,269	958	44	4	0	16.7	F
El Paso	701,908	188,192	66,436	11,995	31,345	20,713	6,063	9	1	0	3.5	F
Galveston	248,469	56,063	27,403	3,547	11,674	8,057	2,515	33	7	7	19.2	F
Gregg	113,155	25,354	14,909	1,608	5,371	3,719	1,254	45	7	0	18.5	F
Harris	3,250,404	778,347	249,813	48,892	151,423	99,789	26,060	82	44	16	60.0	F
Hidalgo	534,907	161,899	50,443	10,317	22,573	14,811	4,412	0	0	0	0.0	A
Hood	38,750	7,784	7,459	491	1,866	1,384	563	*	*	*	*	*
Jefferson	241,332	52,032	33,525	3,289	11,595	8,072	2,769	26	2	0	9.7	F
Johnson	122,594	29,022	12,232	1,855	5,653	3,876	1,177	*	*	*	*	*
Kaufman	68,065	16,343	7,313	1,048	3,102	2,155	682	*	*	*	*	*
Marion	10,998	2,148	1,906	141	530	392	154	19	1	0	6.8	F
Montgomery	287,644	69,307	25,113	4,434	13,080	8,972	2,598	*	*	*	*	*
Nueces	315,469	80,170	33,731	5,047	14,309	9,691	2,983	12	0	0	4.0	F
Orange	85,240	19,190	10,459	1,236	3,986	2,798	938	6	0	0	2.0	C
Parker	85,427	19,151	10,060	1,228	3,989	2,799	916	*	*	*	*	*
Rockwall	39,489	9,127	4,206	580	1,810	1,272	398	*	*	*	*	*
Smith	169,693	36,513	23,511	2,331	8,165	5,663	1,945	35	1	0	12.2	F
Tarrant	1,382,442	319,510	116,040	19,926	65,566	43,406	11,737	56	5	2	22.5	F
Travis	727,022	154,137	53,087	9,568	36,625	22,992	5,528	36	0	0	12.0	F
Victoria	82,087	20,764	9,799	1,298	3,718	2,565	837	7	0	0	2.3	D
Webb	193,180	58,933	14,328	3,722	8,184	5,283	1,423	0	0	0	0.0	A
Total	13,673,735	3,295,018	1,202,886	207,519	636,729	422,161	117,210					

Notes: **EMBARGOED FOR RELEASE UNTIL MAY 1, 2002**

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- (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 1999 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 2000 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 1999 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 (1998-2000), 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.
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UTAH



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Cache	87,328	24,283	6,815	1,521	4,560	2,461	619
Davis	239,364	71,595	17,527	4,563	11,778	6,574	1,752
Salt Lake	850,243	225,832	70,223	14,289	44,610	24,842	6,666
San Juan	13,603	4,360	1,115	278	638	364	105
Utah	346,997	97,946	23,660	6,245	17,928	9,549	2,271
Weber	185,469	46,997	19,903	3,017	9,827	5,630	1,721
Total	1,723,004	471,013	139,243	29,914	89,342	49,420	13,135

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
0	0	0	0.0	A
12	0	0	4.0	F
22	2	0	8.3	F
0	0	0	0.0	A
11	0	0	3.7	F
6	0	0	2.0	C

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 1999 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 2000 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 1999 based on national rates (NHIS) applied to county population estimates (US Census).
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- (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 (1998-2000), 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.
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VERMONT

At-Risk Groups								Number of High Ozone Days in the Unhealthy Ranges 1998-2000				
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Orange	Red	Purple	Wgt. Avg	Grade
Bennington	35,965	6,685	5,686	434	1,962	1,268	459	4	0	0	1.3	C
Chittenden	143,947	25,388	13,256	1,651	8,198	4,861	1,316	1	0	0	0.3	B
Total	179,912	32,073	18,942	2,085	10,160	6,129	1,775					

Notes:

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- (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 1999 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 2000 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 1999 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 (1998-2000), 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+.

VIRGINIA

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Arlington	174,848	24,740	18,197	1,529	10,455	6,262	1,698
Caroline	22,075	4,669	2,607	297	1,157	733	234
Charles City	7,240	1,362	865	87	392	249	79
Chesterfield	253,365	61,137	14,133	3,879	12,994	7,657	1,815
Fairfax	945,717	189,300	74,069	12,042	51,358	31,071	8,226
Fauquier	55,206	12,216	5,507	762	2,879	1,800	536
Frederick	56,555	12,353	5,638	779	2,953	1,847	551
Hanover	85,410	16,850	10,823	1,075	4,549	2,916	954
Henrico	244,652	46,534	29,839	2,947	13,306	8,337	2,597
Loudoun	156,284	35,629	9,138	2,218	8,251	4,865	1,157
Madison	12,627	2,599	1,947	164	656	435	158
Page	23,165	4,397	3,691	281	1,228	818	299
Prince William	270,841	69,144	12,128	4,314	13,825	7,906	1,691
Roanoke	81,163	14,299	10,976	940	4,407	2,864	964
Rockbridge	19,542	3,505	2,949	227	1,052	699	250
Stafford	93,160	23,595	5,049	1,477	4,733	2,768	649
Wythe	26,511	4,894	4,207	319	1,411	936	340
Alexandria (city)	117,390	15,732	15,321	982	7,009	4,289	1,277
Hampton (city)	137,193	28,186	15,308	1,763	7,402	4,542	1,358
Suffolk (city)	64,805	14,539	7,352	923	3,324	2,109	668
Total	2,528,361	527,223	211,763	33,336	135,606	82,165	22,197

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
33	1	0	11.5	F
22	2	0	8.3	F
28	3	1	11.5	F
18	1	0	6.5	F
45	6	0	18.0	F
22	0	0	7.3	F
16	1	0	5.8	F
*	*	*	*	*
28	3	0	10.8	F
23	2	0	8.7	F
34	4	0	13.3	F
*	*	*	*	*
22	2	0	8.3	F
20	1	0	7.2	F
*	*	*	*	*
23	4	0	9.7	F
12	0	0	4.0	F
22	0	0	7.3	F
22	2	0	8.3	F
25	1	0	8.8	F

Notes:

- (1) **Total** represents the at-risk populations in counties 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 population estimates (US Census).
- (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) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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+.

WASHINGTON

EMBARGOED FOR RELEASE UNTIL MAY 1, 2002



At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Clallam	64,690	12,286	13,886	788	3,919	2,341	987
Clark	336,268	77,533	31,668	5,005	19,970	10,616	3,108
Cowlitz	91,949	19,944	12,411	1,293	5,508	3,050	1,046
King	1,664,846	307,597	181,913	19,626	106,668	56,651	16,755
Klickitat	19,530	4,607	2,417	299	1,126	624	208
Lewis	68,621	15,498	10,229	1,011	4,008	2,263	823
Pierce	688,807	155,049	71,872	9,801	41,900	22,068	6,575
Skagit	101,180	21,763	14,882	1,394	6,062	3,397	1,206
Spokane	409,736	87,312	50,707	5,635	25,035	13,477	4,342
Thurston	205,459	44,287	23,462	2,870	12,424	6,703	2,100
Whatcom	160,310	32,785	19,060	2,106	10,096	5,307	1,648
Total	3,811,396	778,661	432,507	49,828	236,716	126,498	38,799

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
0	0	0	0.0	A
0	0	0	0.0	A
*	*	*	*	*
4	2	0	2.3	D
0	0	0	0.0	A
0	0	0	0.0	A
4	1	0	1.8	C
0	0	0	0.0	A
0	0	0	0.0	A
1	0	0	0.3	B
0	0	0	0.0	A

Notes:

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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 1999 based on national rates (NHIS) applied to county population estimates (US Census).
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- (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) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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.
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WEST VIRGINIA



Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Cabell	93,562	14,893	15,306	965	6,503	3,426	1,227
Greenbrier	35,310	6,083	6,092	395	2,368	1,282	482
Hancock	33,740	5,372	6,179	359	2,290	1,250	481
Kanawha	199,263	33,818	32,555	2,176	13,468	7,230	2,626
Monongalia	77,006	11,424	8,757	731	5,623	2,720	767
Ohio	47,719	7,733	8,998	498	3,277	1,769	682
Wood	86,337	15,418	13,249	1,000	5,754	3,078	1,098
Total	572,937	94,741	91,136	6,125	39,283	20,755	7,364

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
28	5	0	11.8	F
11	3	0	5.2	F
13	0	0	4.3	F
26	3	0	10.2	F
*	*	*	*	*
14	0	0	4.7	F
36	1	0	12.5	F

Notes:

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- (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 1999 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 2000 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 1999 based on national rates (NHIS) applied to county population estimates (US Census).
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- (9) The **weighted average** was derived by adding the three years of individual level data (1998-2000), 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.
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- (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+.

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Brown	216,522	46,461	23,568	3,008	12,389	6,988	2,096
Columbia	51,788	10,643	7,473	698	2,961	1,748	612
Dane	428,563	78,905	41,277	5,018	26,089	14,291	3,851
Dodge	83,494	17,771	10,805	1,154	4,751	2,760	915
Door	27,079	5,412	4,998	351	1,559	944	370
Florence	5,136	1,043	841	70	290	176	66
Fond du Lac	94,795	19,963	13,921	1,305	5,389	3,162	1,107
Green	33,847	7,199	4,931	472	1,913	1,127	396
Jefferson	74,052	14,956	9,403	984	4,278	2,469	802
Kenosha	146,315	31,770	16,542	2,048	8,318	4,758	1,479
Kewaunee	19,966	4,347	3,030	287	1,114	660	238
Manitowoc	82,726	17,266	13,428	1,119	4,712	2,811	1,038
Marathon	123,584	27,473	15,834	1,787	6,921	4,013	1,329
Milwaukee	906,248	192,916	122,110	12,260	52,122	29,936	9,859
Oneida	36,052	6,526	6,507	425	2,130	1,304	508
Outagamie	158,480	36,036	17,632	2,313	8,886	5,053	1,555
Ozaukee	82,015	16,628	10,533	1,081	4,733	2,771	922
Polk	39,363	8,775	5,768	576	2,182	1,294	462
Racine	185,777	40,863	22,922	2,638	10,484	6,054	1,965
Rock	151,121	32,094	18,946	2,089	8,599	4,991	1,636
Saint Croix	60,273	14,283	5,904	923	3,320	1,875	552
Sauk	54,282	11,629	7,903	757	3,069	1,806	634
Sheboygan	110,136	23,340	15,379	1,521	6,261	3,656	1,251
Vernon	27,707	5,975	4,818	390	1,550	939	364
Vilas	21,703	3,737	4,713	244	1,288	814	348
Walworth	86,548	16,576	11,474	1,075	5,111	2,947	962
Washington	115,717	25,325	12,717	1,648	6,533	3,746	1,161
Waukesha	358,442	72,883	42,257	4,810	20,605	11,954	3,830
Winnebago	150,591	28,908	19,193	1,854	8,934	5,118	1,632
Total	3,932,322	819,703	494,827	52,907	226,490	130,166	41,943

Number of High Ozone Days in the Unhealthy Ranges				
1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
8	0	0	2.7	D
6	0	0	2.0	C
5	0	0	1.7	C
7	0	0	2.3	D
23	2	0	8.7	F
6	0	0	2.0	C
7	0	0	2.3	D
*	*	*	*	*
12	0	0	4.0	F
32	2	0	11.7	F
15	0	0	5.0	F
26	0	0	8.7	F
5	0	0	1.7	C
22	0	0	7.3	F
3	0	0	1.0	C
7	0	0	2.3	D
28	2	0	10.3	F
*	*	*	*	*
8	2	0	3.7	F
15	0	0	5.0	F
0	0	0	0.0	A
5	0	0	1.7	C
20	3	0	8.2	F
2	0	0	0.7	B
*	*	*	*	*
9	1	0	3.5	F
6	0	0	2.0	C
8	0	0	2.7	D
6	0	0	2.0	C

Notes: **EMBARGOED FOR RELEASE UNTIL MAY 1, 2002**

- (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 1999 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 2000 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 1999 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 (1998-2000), 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+.



WYOMING

Number of High Ozone Days in the Unhealthy Ranges

At-Risk Groups							
County	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
Teton	14,532	2,597	1,100	165	995	493	128
Total	14,532	2,597	1,100	165	995	493	128

1998-2000				
Orange	Red	Purple	Wgt. Avg	Grade
0	0	0	0.0	A

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.
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- (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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- (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+.