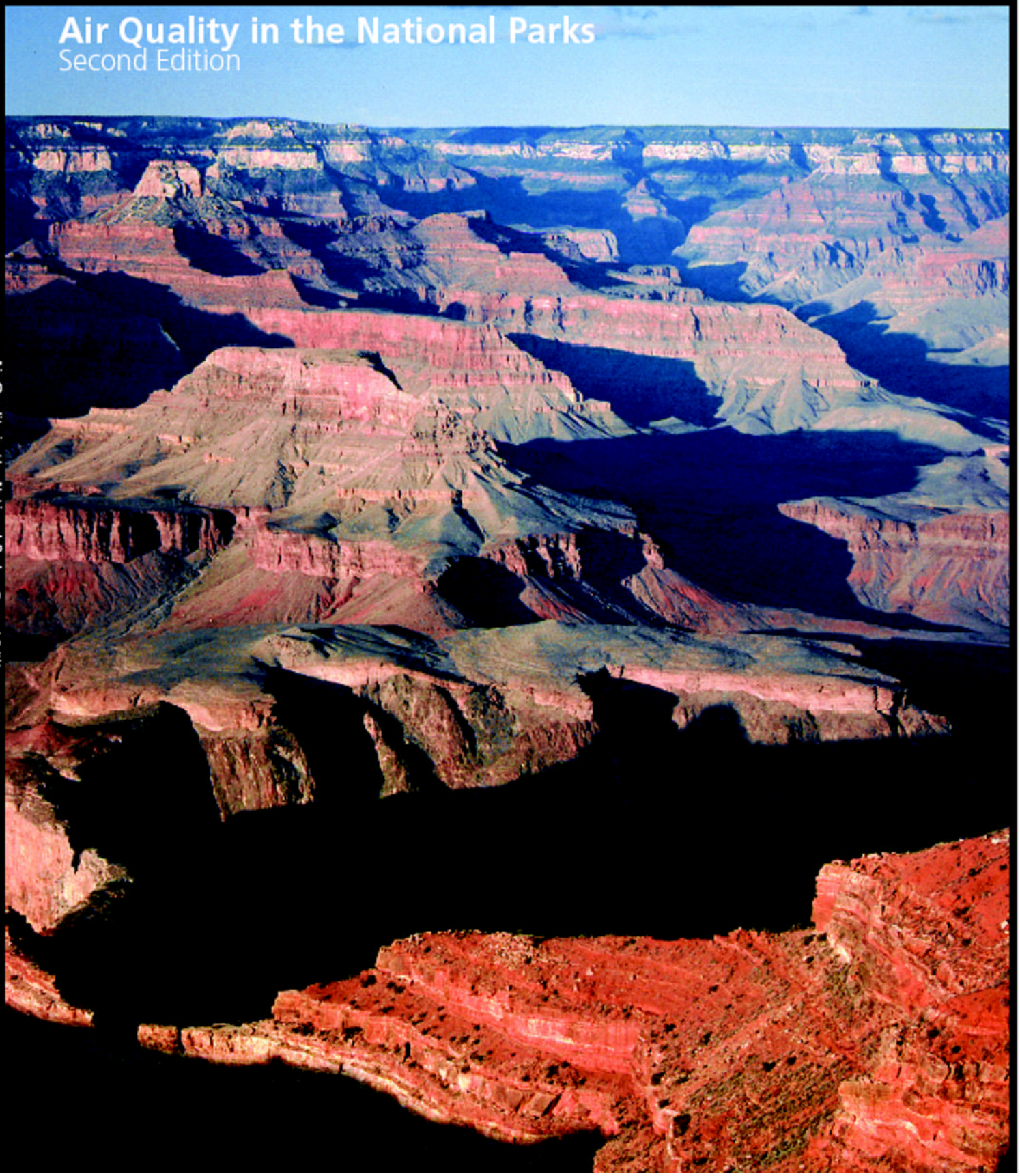
National Park Service
U.S. Department of the Interior

Air Resources Division

Air Quality in the National Parks
Second Edition



Air Quality in the National Parks - Second Edition

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Second Edition

National Park Service Air Resources Division
Lakewood, Colorado

U.S. Department of the Interior
Washington, DC

(Cover) Grand Canyon National Park, Arizona

(Left) Crater Lake National Park, Oregon

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"Mount Rainier is the undisputed icon of the Pacific Northwest and the public is passionate about 'their' park and its protection. Mount Rainier dominates the horizon and can be seen daily by millions of people. When the mountain is out, the people come and they expect clean air and panoramic vistas. The views, however, are often tarnished by the haze generated in the Puget Sound area. Because of this unique position, the quality of the air around Mount Rainier National Park serves to galvanize support among all the interest groups, governments, and the general public into actions that protect the entire region."

Jon Jarvis, Superintendent
Mount Rainier National Park, Washington

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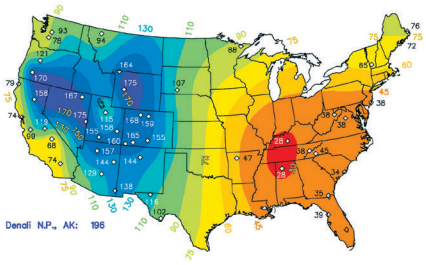

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Haziness Index in U.S. National Parks for the Clearest Days
1990 – 1999: Average of Best 20 percent days, in deciviews (dv)

Park	Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Avg	Status	Trend	Slope, dv/yr
Acadia, ME		10.6	10.7	10.2	10.6	9.8	9.6	9.1	9.7	9.3	8.7	9.8	⊙	↓	-0.20
Badlands, ND		7.6	7.4	7.2	7.4	7.9	6.6	7.9	7.1	7.4	6.6	7.3	○	⇩	-0.07
Bandelier, NM		–	–	–	7	6.7	5.9	6.0	6.3	6.8	6.7	6.5	○	⇧	+0.00
Big Bend, TX		8.4	8.2	7.5	7.7	8.5	7.8	–	6.9	9.3	8.8	8.1	⊙	⇧	+0.06
Bryce Canyon, UT		4.9	5.0	5.7	4.8	4.5	4.3	4.1	4.6	4.5	4.7	4.7	●	↓	-0.07
Canyonlands, UT		5.9	6.2	6.3	6	6.5	5.7	4.9	6.0	5.8	5.8	5.9	⊙	↓	-0.04
Chiricahua, AZ		–	6.8	6.6	6.4	6.6	6.8	6.4	6.7	6.6	6.4	6.6	○	⇩	-0.02
Crater Lake, OR		–	–	5.1	5.1	–	3.7	4.3	4.3	4.1	4.1	4.4	●	↓	-0.14
Denali, AK		–	3.5	3.4	3.7	3.4	3.2	3.7	4.1	3.1	3.2	3.5	●	⇩	-0.03
Glacier, MT		8.0	9.8	8.9	9.0	8.5	7.9	8	7.9	8.3	7.5	8.4	⊙	↓	-0.20
Grand Canyon, AZ		–	–	–	5.7	5.3	3.9	4.0	4.4	4.8	5.2	5.1	●	–	+0.00
Great Basin, NV		5.1	5.5	–	5.1	4.9	5.0	5.1	5.0	5.0	5.3	4.8	●	⇩	-0.02
Great Sand Dunes, CO		6.6	6.7	6.3	6.1	5.4	4.8	4.9	5.3	6.6	5.5	5.8	⊙	↓	-0.17
Great Smoky Mts., TN/NC		15.3	13.8	13.6	14.4	13.8	13.5	15.3	15.1	14.4	15.2	14.4	●	⇧	+0.09
Guadalupe Mts., TX		–	–	7.3	8.0	7.5	8.3	7.8	7.2	7.5	7.6	7.7	○	⇩	-0.01
Lassen Volcanic, CA		4.5	4.3	4.7	5.1	4.4	3.9	4.0	4.4	4.3	4.1	4.4	●	↓	-0.06
Mammoth Cave, KY		–	–	16.3	17.3	–	15.5	16	16.8	16.2	16.1	16.3	●	⇩	-0.03
Mesa Verde, CO		5.5	6.1	5.6	5.7	6.3	4.9	5.0	–	5.9	5.7	5.6	⊙	⇧	+0.01
Mt. Rainier, WA		–	7.0	7.2	7.5	6.3	5.0	5.4	5.5	5.0	5.3	6.0	⊙	↓	-0.28
Petrified Forest, AZ		–	8.0	7.6	6.2	6.2	6.2	6.1	6.9	6.8	6.7	6.7	○	⇩	-0.10
Pinnacles, CA		9.4	9.3	9.1	8.7	9.4	8.3	8.0	8.9	–	8.7	8.9	⊙	↓	-0.12
Point Reyes, CA		9.1	8.8	8.6	9.5	8.1	7.9	8.1	–	8.7	8.9	8.6	⊙	⇩	-0.08
Redwood, CA		6.7	6.8	6.9	6.7	6.3	6.6	5.3	6.1	5.5	6.2	6.3	⊙	↓	-0.10
Rocky Mountain, CO		4.3	4.1	3.9	4.5	5.0	4.3	3.9	4.2	4.8	3.9	4.3	●	–	+0.00
Shenandoah, VA		14.1	13.4	12.6	14.2	12.3	12.8	14.2	13.5	11.8	11.9	13.1	●	↓	-0.15
Tonto, AZ		–	8.2	–	7.7	7.2	7.7	7.7	7.6	7.0	8.1	7.7	○	⇩	-0.04
Yellowstone, WY		–	–	5.9	5.2	4.7	4.8	5	–	–	3.8	4.9	●	↓	-0.23
Yosemite, CA		5.4	5.6	4.8	4.8	4.5	5.3	4.6	5.5	4.7	5.0	5.0	●	⇩	-0.02
	Average	7.7	7.5	7.6	7.5	6.9	6.8	6.8	7.2	7.1	7.0	7.2			

Symbols: "–" indicates insufficient or no data, or no trend

Park Air Quality Status		Trend	
Much Worse than NPS Average	●	Significant Improvement**	↓
Worse than NPS Average	⊙	Improvement	⇩
NPS Average	○	Degradation	⇧
Better than NPS Average	⊙	Significant Degradation**	↑
Much Better than NPS Average	●	No Trend	–

** Statistically significant at a=0.15