

**Table 1. 2020 Site Specifications.**

National Park Unit	Site Name	State	NPS Abbr.	CASTNET Abbr.	AQS ID Number	Latitude (degrees north)	Longitude (degrees west)	Elev. (m)	O <sub>3</sub> Years <sup>a</sup>	SO <sub>2</sub>	CO	NO <sub>x</sub> /NO <sub>y</sub>	PM	WS/WD	TMP	RH	RNF	SOL	Filter Pack <sup>b</sup>
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>																			
Big Bend	K-Bar Ranch Road	TX	BIBE-KB	BBE401	48-043-0101	29.3028	103.1778	1057	31	---	---	---	---	X	X	X	X	X	X
Canyonlands	Island in the Sky	UT	CANY-IS	CAN407	49-037-0101	38.4583	109.8214	1794	29	---	---	---	---	X	X	X	X	X	X
Carlsbad Caverns	Biology Building	NM	CAVE-BB	---	35-015-0010	32.1783	104.4406	1357	2	---	---	---	---	X	X	X	X	X	---
Chaco Culture	Radio Repeater	NM	CHCU-RR	CHC432	35-045-0020	36.0350	107.9042	1965	4	---	---	X	---	X	X	X	X	X	---
Chiricahua	Entrance Station	AZ	CHIR-ES	CHA467	04-003-8001	32.0094	109.3892	1569	30	---	---	---	---	X	X	X	X	X	X
Craters of the Moon	Visitor Center	ID	CRMO-VC	CRM435	16-023-0101	43.4606	113.5622	1815	29	---	---	---	---	X	X	---	---	X	---
Death Valley	Park Village	CA	DEVA-PV	DEV412	06-027-0101	36.5092	116.8481	125	28	---	---	---	---	X	X	---	---	---	---
Denali	Headquarters	AK	DENA-HQ	DEN417	02-068-0003	63.7233	148.9675	663	34	---	---	---	---	X	X	X	X	X	X
Dinosaur	West Entrance Housing	UT	DINO-WE	DIN431	49-047-1002	40.4372	109.3047	1463	20	---	---	---	---	X	X	---	X	X	X
Everglades	Beard Center	FL	EVER-BC	EVE419	12-086-0030	25.3911	80.6808	1	---	---	---	---	---	X	X	X	X	X	X
Glacier	West Glacier Horse Stables	MT	GLAC-WG	GLR468	30-029-8001	48.5103	113.9969	964	29	---	---	---	---	X	X	---	---	X	X
Grand Canyon	The Abyss	AZ	GRCA-AS	GRC474	04-005-8001	36.0586	112.1836	2073	28	---	---	---	---	X	X	X	X	X	X
Grand Teton	Science School	WY	GRTE-SS	GRT434	56-039-0008	43.6708	110.5994	2105	10	---	---	---	---	X	X	X	X	X	---
Great Basin	Maintenance Yard	NV	GRBA-MY	GRB411	32-033-0101	39.0050	114.2158	2058	28	---	---	---	---	X	X	X	X	X	X
Great Smoky Mountains	Cades Cove	TN	GRSM-CC	---	47-009-0102	35.6042	83.7831	564	28	---	---	---	---	X	X	X	X	X	---
Great Smoky Mountains	Clingmans Dome	TN	GRSM-CD	---	47-155-0102	35.5619	83.4981	2021	28	---	---	---	---	X	---	X	X	X	---
Great Smoky Mountains	Cove Mountain	TN	GRSM-CM	---	47-155-0101	35.6967	83.6086	1243	33	---	---	---	---	X	X	X	X	---	---
Great Smoky Mountains	Look Rock NCore	TN	GRSM-LN	GRS420	47-009-0101	35.6336	83.9417	801	---	X	X	X	---	---	---	---	---	---	---
Great Smoky Mountains	Look Rock	TN	GRSM-LR	GRS420	47-009-0101	35.6336	83.9417	801	33	---	---	---	X	X	X	X	X	X	X
<u>Guadalupe Mountains</u>	Maintenance Area	TX	GUMO-MA	---	48-109-0002	31.8914	-104.8097	1701	2	---	---	---	---	X	X	X	X	X	---
Hawaii Volcanoes	Visitor Center	HI	HAVO-VC	---	15-001-0005	19.4308	155.2578	1215	---	X	---	---	X	X	X	X	X	X	---
Joshua Tree	Black Rock	CA	JOTR-BR	JOT403	06-071-9002	34.0694	116.3889	1243	28	---	---	---	---	X	X	X	X	X	X
Joshua Tree	Cottonwood Visitor Center	CA	JOTR-CV	---	06-065-0010	33.7472	115.8201	943	3	---	---	---	X	X	X	X	X	X	---
<u>Joshua Tree</u>	Pinto Wells	CA	JOTR-PW	---	06-065-1004	33.9397	115.4108	326	15	---	---	---	---	X	X	X	---	X	---
Lassen Volcanic	Manzanita Lake Fire Station	CA	LAVO-ML	LAV410	06-089-3003	40.5400	121.5764	1755	34	---	---	---	---	X	X	X	X	X	X
Mammoth Cave	Houchin Meadow	KY	MACA-HM	MAC426	21-061-0501	37.1317	86.1431	230	24	X	X	X	---	X	X	X	X	X	X
Mesa Verde	Resource Management Area	CO	MEVE-RM	MEV405	08-083-0101	37.1983	108.4906	2170	28	---	---	---	---	X	X	X	X	X	X
Minidoka	Maintenance Building	ID	MIIN-MB	---	16-053-0003	42.6800	114.2525	1223	---	---	---	---	X	X	X	X	---	---	---
<u>Mojave</u>	Kelso Mountains	CA	MOJA-KM	---	06-071-1001	35.1019	115.7767	1212	14	---	---	---	---	X	X	X	---	X	---
Petrified Forest	South Entrance	AZ	PEFO-SE	PET427	04-017-0119	34.8225	109.8950	1712	19	---	---	---	---	X	X	---	---	X	X

**Table 1. 2020 Site Specifications (continued).**

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<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>																			
Pinnacles	SW of East Entrance Station	CA	PINN-ES	PIN414	06-069-0003	36.4833	121.1569	317	34	---	---	---	---	X	X	X	X	X	X
Rocky Mountain	Longs Peak	CO	ROMO-LP	ROM406	08-069-0007	40.2710	105.5456	2742	37	---	---	---	---	X	X	X	X	X	X
Sequoia and Kings Canyon	Ash Mountain	CA	SEKI-AS	SEK430	06-107-0009	36.4894	118.8292	510	22	---	---	---	X	X	X	X	X	X	X
Sequoia and Kings Canyon	Lower Kaweah	CA	SEKI-LK	---	06-107-0006	36.5658	118.7772	1890	37	---	---	---	---	X	X	X	X	X	---
Shenandoah	Big Meadows	VA	SHEN-BM	SHN418	51-113-0003	38.5231	78.4347	1068	38	---	---	---	---	X	X	X	X	X	X
Voyageurs	Sullivan Bay	MN	VOYA-SB	VOY413	27-137-0034	48.4128	92.8292	427	25	---	---	---	---	X	X	X	X	X	X
Yellowstone	Old Faithful Snow Lodge	WY	YELL-OS	---	56-039-1013	44.4582	110.8253	2230	---	---	X	X	X	X	X	X	---	---	---
Yellowstone	West Entrance	MT	YELL-WS	---	30-031-0017	44.6569	111.0894	2030	---	---	X	X	X	X	X	X	---	---	---
Yellowstone	Water Tank	WY	YELL-WT	YEL408	56-039-1011	44.5653	110.4003	2430	25	---	---	---	---	X	X	X	X	X	X
Yosemite	Turtleback Dome	CA	YOSE-TD	YOS404	06-043-0003	37.7133	119.7061	1599	28	---	---	---	---	X	X	X	X	X	X
Zion	Dalton's Wash	UT	ZION-DW	ZIO433	49-053-0130	37.1983	113.1506	1213	17	---	---	---	---	X	X	---	---	X	---
<b>Sites operated by the NPS for the Bureau of Land Management</b>																			
Rangely	Golf Course	CO	RANG-GC	---	08-103-0006	40.0869	108.7614	1655	11	---	---	X	X	X	---	X	X	X	---
<b>Sites operated by cooperating state agencies</b>																			
Acadia	Cadillac Mountain	ME	ACAD-CM	---	23-009-0102	44.3517	68.2269	466	26	---	---	---	---	X	X	X	---	---	---
Acadia	McFarland Hill	ME	ACAD-MH	ACA416	23-009-0103	44.3772	68.2608	153	23	X	X	X	X	X	X	X	X	X	X
Badlands	Visitor Center	SD	BADL-VC	---	46-071-1001	43.7436	101.9414	739	16	X	---	---	X	---	---	---	---	---	---
Cape Cod	Cape Cod	MA	CACO-XX	---	25-001-0002	41.9758	70.0247	41	34	---	---	---	---	X	X	X	---	X	---
Chamizal	Chamizal	TX	CHAM-XX	---	48-141-0044	31.7656	106.4550	1128	29	---	---	---	---	X	X	X	---	X	---
Congaree	Congaree Bluff	SC	COSW-BL	---	45-079-0021	33.8147	80.7811	34	21	---	---	---	---	---	---	---	---	---	---
Everglades	Cutler Road	FL	EVER-CR	---	12-086-0029	25.5861	80.3269	4	36	---	---	---	---	---	---	---	---	---	---
Great Smoky Mountains	Purchase Knob	NC	GRSM-PK	---	37-087-0036	35.5900	83.0775	1550	26	---	---	---	---	---	---	---	---	---	---
Indiana Dunes	Ammunition Bunker	IN	INDU-AB	---	18-089-0022	41.6067	87.3047	183	28	X	---	---	X	X	X	X	---	X	---

**Table 1. 2020 Site Specifications (continued).**

National Park Unit	Site Name	State	NPS Abbr.	CASTNET Abbr.	AQS ID Number	Latitude (degrees north)	Longitude (degrees west)	Elev. (m)	O <sub>3</sub> Years <sup>a</sup>	SO <sub>2</sub>	CO	NO <sub>x</sub> / NO <sub>y</sub>	PM	WS/ WD	TMP	RH	RNF	SOL	Filter Pack <sup>b</sup>
<b>Sites operated by cooperating state agencies</b>																			
<i>Mount Rainier</i>	Jackson Visitor's Center	WA	MORA-JV	---	53-053-0012	46.7853	121.7378	1615	23	---	---	---	---	---	---	---	---	---	---
<i>Saguaro</i>	East	AZ	SAGU-EA	---	04-019-0021	32.1744	110.7364	938	29	---	---	---	---	X	X	X	---	X	---
<i>Theodore Roosevelt</i>	Painted Canyon, VC	ND	THRO-VC	THR422	38-007-0002	46.8947	103.3778	840	23	X	---	---	X	X	X	X	X	X	X
<i>Wind Cave</i>	Visitor Center	SD	WICA-VC	WNC429	46-033-0132	43.5575	103.4839	1288	17	---	---	---	X	X	X	X	X	X	X
<i>Yosemite</i>	Village	CA	YOSE-VI	---	06-043-1001	37.7458	119.6028	1216	---	---	---	---	X	---	---	---	---	---	---

<sup>a</sup> The values in this column represent the number of years an ozone analyzer has been operational at the site.

<sup>b</sup> A filter pack is a part of the CASTNET network and is used to measure dry deposition using the "inferential method." This method combines air quality concentration data with meteorological measurements and land use functions to compute deposition velocities. Ambient air is drawn across the filter at either 3.0 or 1.5 liters per minute. The filter is then analyzed in a lab to yield weekly average concentrations of particulate sulfate (SO<sub>4</sub><sup>2-</sup>), particulate nitrate (NO<sub>3</sub><sup>-</sup>), particulate ammonium (NH<sub>4</sub><sup>+</sup>), sulfur dioxide (SO<sub>2</sub>), and nitric acid (HNO<sub>3</sub>). In some cases, the positive ions Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>2+</sup>, and Mg<sup>2+</sup> are also measured from the filter samples.

Operating agency key: plain text = site operated by the National Park Service

*italics* = site operated by a state agency

underline = site operated by the National Park Service, but consisting of non-EPA certified portable instrumentation

Parameter key: O<sub>3</sub> = ozone (ppb)

SO<sub>2</sub> = sulfur dioxide (ppb)

CO = carbon monoxide (ppm)

NO<sub>x</sub> = oxides of nitrogen (ppb)

PM = particulate matter (µg/m<sup>3</sup>)

WS = wind speed (m/s)

WD = wind direction (degrees)

TMP = air temperature (degrees C)

RH = relative humidity (%)

RNF = precipitation (mm/hr)

SOL = solar radiation (watts/m<sup>2</sup>)

Note : Dashed lines indicate parameter not measured at that site.

**Table 2. 2020 Summary of 8-hour average ozone concentrations (ppb).**

National Park Unit	Site Name	Valid Number of Days	1st Highest	2nd Highest	3rd Highest	4th Highest	# Days with 8-Hour Average O <sub>3</sub> Values ≥70 ppb <sup>a</sup>
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>							
Big Bend	K-Bar Ranch Road	343	64	63	62	60	0
Canyonlands	Island in the Sky	346	73	72	66	66	2
Carlsbad Caverns	Biology Building	359	74	74	73	72	9
Chaco Culture	Radio Repeater	332	69	68	68	68	0
Chiricahua	Entrance Station	361	73	72	67	66	2
Craters of the Moon	Visitor Center	362	78	70	70	66	1
Death Valley	Park Village	354	73	73	73	72	7
Denali	Headquarters	354	56	52	52	51	0
Dinosaur	West Entrance Housing	351	72	65	65	63	1
Glacier	West Glacier Horse Stables	361	54	53	53	52	0
Grand Canyon	The Abyss	361	68	64	63	63	0
Grand Teton	Science School	358	67	66	64	60	0
Great Basin	Maintenance Yard	361	81	74	72	70	3
Great Smoky Mountains	Cades Cove	259	59	57	56	55	0
Great Smoky Mountains	Clingmans Dome	180	67	63	63	62	0
Great Smoky Mountains	Cove Mountain	358	61	59	59	58	0
Great Smoky Mountains	Look Rock	355	61	59	59	58	0
Joshua Tree	Black Rock	361	99	90	87	84	34
Joshua Tree	Cottonwood Visitor Center	320	76	72	68	67	2
Lassen Volcanic	Manzanita Lake Fire Station	352	79	75	69	69	2
Mammoth Cave	Houchin Meadow	358	59	58	57	56	0
Mesa Verde	Resource Management Area	364	78	72	68	67	2
Petrified Forest	South Entrance	364	81	70	70	67	1
Pinnacles	SW of East Entrance Station	360	73	72	70	69	2
Rocky Mountain	Longs Peak	354	77	74	73	73	5
Sequoia and Kings Canyon	Ash Mountain	362	114	113	99	95	86
Sequoia and Kings Canyon	Lower Kaweah	205	100	92	89	86	37
Shenandoah	Big Meadows	354	56	56	53	53	0
Voyageurs	Sullivan Bay	359	61	60	54	54	0
Yellowstone	Water Tank	345	80	76	67	66	2
Yosemite	Turtleback Dome	359	100	99	94	84	12
Zion	Dalton's Wash	363	74	72	72	67	3
<b>Sites operated by the NPS for the Bureau of Land Management</b>							
Rangely	Golf Course	354	75	75	65	65	2
<b>Sites operated by cooperating state agencies</b>							
Acadia	Cadillac Mountain	212	72	68	68	68	1
Acadia	McFarland Hill	355	58	57	57	55	0
Badlands	Visitor Center	352	67	63	62	61	0
Cape Cod	Cape Cod	346	73	71	63	63	2
Chamizal	Chamizal	346	73	73	73	72	5
Congaree	Congaree Bluff	257	53	52	51	51	0
Everglades	Cutler Road	354	67	65	61	60	0

**Table 2. 2020 Summary of 8-hour average ozone concentrations (ppb) (continued).**

National Park Unit	Site Name	Valid Number of Days	1st Highest	2nd Highest	3rd Highest	4th Highest	# Days with 8-Hour Average O <sub>3</sub> Values ≥70 ppb <sup>a</sup>
<b>Sites operated by cooperating state agencies</b>							
<i>Great Smoky Mountains</i>	Purchase Knob	241	66	63	62	60	0
<i>Indiana Dunes</i>	Ammunition Bunker	345	80	80	77	<b>74</b>	<b>5</b>
<i>Mount Rainier</i>	Jackson Visitor's Center	344	71	65	62	60	1
<i>Saguaro</i>	East	359	72	72	72	<b>71</b>	<b>5</b>
<i>Theodore Roosevelt</i>	Painted Canyon, VC	361	56	55	54	53	0
<i>Wind Cave</i>	Visitor Center	359	76	69	63	62	1
<b>Portable ozone monitoring systems (POMS)<sup>b</sup></b>							
<u>Guadalupe Mountains</u>	Maintenance Area	118	74	74	72	<b>72</b>	<b>7</b>
<u>Joshua Tree</u>	Pinto Wells	349	67	66	65	65	0
<u>Mojave</u>	Kelso Mountains	233	94	84	82	<b>81</b>	<b>30</b>

<sup>a</sup> The primary and secondary National Ambient Air Quality Standard for ozone is 0.070 ppm over an 8-hour period. (An exceedance of the standard occurs when an 8-hour average ozone concentration is greater than or equal to 70 ppb. A violation of the standard occurs when the 3-year average of the fourth highest daily maximum 8-hour average ozone concentration equals or exceeds 70 ppb.) Exceedances of the standard are in red.

<sup>b</sup> The gaseous Pollutant Monitoring Program Portable Ozone Monitoring Systems (POMS) do not meet EPA standards for regulatory monitoring. However, ozone summary statistics from portable systems can be compared to EPA standards for reference purposes.

Operating agency key: plain text = site operated by the National Park Service

*italics* = site operated by a state agency

underline = site operated by the National Park Service, but consisting of non-EPA certified portable instrumentation

Color shading key: **Red** = 4th highest 8-hour average ozone concentration >70 ppb, >3 days with 8-hour average >70 ppb

**Bold** = Ozone summary statistics for POMS are highlighted bold where exceedances occurred. These sites should be compared to EPA standards for reference purposes only.

**Table 3. 2020 Ozone violation summary - primary standard<sup>a,b</sup>.**

National Park Unit	Site Name	2018-2020	2017-2019	2016-2018	2015-2017	2014-2016	2013-2015	2012-2014
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>								
Big Bend	K-Bar Ranch Road	63	64	63	62	62	64	65
Canyonlands	Island in the Sky	66	65	65	64	64	65	67
Carlsbad Caverns	Biology Building	(73)	(74)	---	---	---	---	---
Chaco Culture	Radio Repeater	67	(65)	(66)	(64)	---	---	---
Chiricahua	Entrance Station	66	66	66	65	65	68	71
Craters of the Moon	Visitor Center	64	63	63	60	60	61	62
Death Valley	Park Village	73	72	(73)	(70)	70	70	70
Denali	Headquarters	52	52	50	50	53	54	54
Dinosaur	West Entrance Housing	66	70	72	72	68	81	(84)
Glacier	West Glacier Horse Stables	53	53	52	53	53	(54)	54
Grand Canyon	The Abyss	64	64	65	66	67	69	70
Grand Teton	Science School	59	59	60	59	59	59	62
Great Basin	Maintenance Yard	69	67	66	64	64	68	71
Great Smoky Mountains	Cades Cove	58	60	62	61	60	59	60
Great Smoky Mountains	Clingmans Dome	(62)	(62)	(63)	(63)	(65)	(65)	(67)
Great Smoky Mountains	Cove Mountain	62	64	67	67	68	67	68
Great Smoky Mountains	Look Rock	63	65	67	67	67	65	67
Joshua Tree	Black Rock	86	88	89	87	86	86	90
Joshua Tree	Cottonwood Visitor Center	(71)	(73)	(82)	---	---	---	---
Lassen Volcanic	Manzanita Lake Fire Station	68	66	68	64	65	66	68
Mammoth Cave	Houchin Meadow	59	61	63	64	64	63	69
Mesa Verde	Resource Management Area	68	67	68	66	65	66	67
Petrified Forest	South Entrance	67	66	65	63	64	66	70
Pinnacles	SW of East Entrance Station	65	64	68	68	69	68	70
Rocky Mountain	Longs Peak	70	68	70	68	69	70	74
Sequoia and Kings Canyon	Ash Mountain	88	86	89	89	89	89	91
Sequoia and Kings Canyon	Lower Kaweah	83	82	86	84	(84)	(84)	(86)
Shenandoah	Big Meadows	57	60	63	63	63	62	65
Voyageurs	Sullivan Bay	56	56	55	54	55	57	59
Yellowstone	Water Tank	63	62	62	61	60	62	63
Yosemite	Turtleback Dome	79	77	79	75	74	74	77
Zion	Dalton's Wash	66	66	66	65	(65)	(67)	70
<b>Sites operated by the NPS for the Bureau of Land Management</b>								
Rangely	Golf Course	65	65	64	63	63	73	74

**Table 3. 2020 Ozone violation summary - primary standard<sup>a,b</sup> (continued).**

National Park Unit	Site Name	2018-2020	2017-2019	2016-2018	2015-2017	2014-2016	2013-2015	2012-2014
<b>Sites operated by cooperating state agencies</b>								
<i>Acadia</i>	Cadillac Mountain	65	69	70	<b>71</b>	66	67	66
<i>Acadia</i>	McFarland Hill	60	64	63	64	62	65	63
<i>Badlands</i>	Visitor Center	60	62	63	61	58	58	61
<i>Cape Cod</i>	Cape Cod	64	67	69	(69)	(65)	(67)	69
<i>Chamizal</i>	Chamizal	<b>74</b>	<b>74</b>	<b>71</b>	69	67	68	68
<i>Congaree</i>	Congaree Bluff	54	55	55	55	55	55	55
<i>Everglades</i>	Cutler Road	61	61	62	(61)	61	63	63
<i>Great Smoky Mountains</i>	Purchase Knob	62	63	64	64	65	65	66
<i>Indiana Dunes</i>	Ammunition Bunker	70	68	70	68	67	65	69
<i>Mount Rainier</i>	Jackson Visitor's Center	61	64	64	63	(59)	(60)	60
<i>Saguaro</i>	East	69	69	<b>71</b>	69	68	69	71
<i>Theodore Roosevelt</i>	Painted Canyon, VC	57	60	59	60	58	58	56
<i>Wind Cave</i>	Visitor Center	60	61	62	61	58	59	62

<sup>a</sup> The 2015 primary and secondary National Ambient Air Quality Standard for ozone is 0.070 ppm over an 8-hour period. This standard was used for the 2018-2020 period through 2014-2016. (An exceedance of the standard occurs when an 8-hour average ozone concentration is greater than or equal to 71 ppb. A violation of the standard occurs when the 3-year average of the fourth highest daily maximum 8-hour average ozone concentration equals or exceeds 71 ppb.)

<sup>b</sup> The 2008 primary and secondary National Ambient Air Quality Standard for ozone is 0.075 ppm over an 8-hour period. This standard was used for the 2013-2015 period through 2008-2010. (An exceedance of the standard occurs when an 8-hour average ozone concentration is greater than or equal to 76 ppb. A violation of the standard occurs when the 3-year average of the fourth highest daily maximum 8-hour average ozone concentration equals or exceeds 76 ppb.)

Operating agency key: plain text = site operated by the National Park Service  
*italics* = site operated by a state agency

Color shading key: **Red** = ozone violation based on the standard in place at that time

*Note* : A number in parenthesis ( ) indicates that data completeness was not met. The primary standard required 90 percent data completeness, on average, during the 3-year period, with no single year within the period having less than 75 percent data completeness. This data completeness requirement would have to be satisfied in order to determine that the standard has been met at a monitoring site. However, calendar years with less than 75 percent data completeness are included in the computation if the annual fourth-highest daily maximum 8-hour concentration is greater than the level of the standard. A site could be found not to have met the standard with less than complete data.

**Table 4. 2020 Summary of indices for resource injury (SUM06 and W126).**

National Park Unit	Site Name	O <sub>3</sub> % Valid	SUM06 <sup>a</sup> (ppm-hr)	SUM06 Period	W126 <sup>b</sup> (ppm-hr)	W126 Period	NPS W126 <sup>c</sup> (ppm-hr)	NPS W126 Period
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>								
Big Bend	K-Bar Ranch Road	95.1	1.0	June-August	5.2	April-June	5.7	April-June
Canyonlands	Island in the Sky	96.8	6.5	June-August	7.9	June-August	8.4	June-August
Carlsbad Caverns	Biology Building	97.8	20.1	August-October	13.8	August-October	14.3	July-September
Chaco Culture	Radio Repeater	89.8	6.3	July-September	7.9	July-September	8.3	July-September
Chiricahua	Entrance Station	98.7	7.4	June-August	8.8	April-June	9.2	April-June
Craters of the Moon	Visitor Center	99.2	4.7	July-September	5.9	July-September	6.4	July-September
Death Valley	Park Village	96.9	21.6	June-August	15.1	June-August	15.6	June-August
Denali	Headquarters	96.6	0.0	January-March	1.8	March-May	2.3	March-May
Dinosaur	West Entrance Housing	96.0	5.6	June-August	6.8	June-August	7.3	June-August
Glacier	West Glacier Horse Stables	98.7	0.0	January-March	1.6	March-May	2.1	March-May
Grand Canyon	The Abyss	98.7	5.0	June-August	7.0	June-August	7.5	June-August
Grand Teton	Science School	98.3	2.1	July-September	3.9	July-September	4.4	July-September
Great Basin	Maintenance Yard	98.4	11.7	June-August	10.9	June-August	11.4	June-August
Great Smoky Mountains	Cades Cove	95.3	0.2	May-July	2.1	April-June	2.5	April-June
Great Smoky Mountains	Clingmans Dome	97.4	0.4	May-July	2.0	May-July	2.4	May-July
Great Smoky Mountains	Cove Mountain	99.1	0.5	April-June	2.8	April-June	3.3	April-June
Great Smoky Mountains	Look Rock	98.3	0.7	May-July	2.8	April-June	3.3	April-June
Joshua Tree	Black Rock	98.8	36.0	June-August	24.7	June-August	25.2	June-August
Joshua Tree	Cottonwood Visitor Center	91.8	13.2	May-July	11.4	May-July	11.9	May-July
Lassen Volcanic	Manzanita Lake Fire Station	97.2	12.4	July-September	9.7	July-September	10.2	July-September
Mammoth Cave	Houchin Meadow	98.8	0.5	April-June	2.8	April-June	3.3	April-June
Mesa Verde	Resource Management Area	99.3	8.7	July-September	9.4	July-September	9.9	July-September
Petrified Forest	South Entrance	99.1	6.6	June-August	8.1	April-June	8.6	April-June
Pinnacles	SW of East Entrance Station	98.7	9.1	August-October	7.9	August-October	7.1	July-September
Rocky Mountain	Longs Peak	97.2	13.4	June-August	11.9	June-August	12.4	June-August
Sequoia and Kings Canyon	Ash Mountain	98.8	63.2	July-September	46.6	July-September	47.1	July-September
Sequoia and Kings Canyon	Lower Kaweah	97.8	46.6	June-August	31.7	July-September	32.2	July-September
Shenandoah	Big Meadows	97.1	0.0	January-March	2.3	April-June	2.8	April-June
Voyageurs	Sullivan Bay	97.7	0.5	April-June	1.4	April-June	1.9	April-June
Yellowstone	Water Tank	94.3	3.4	July-September	4.9	July-September	5.4	July-September
Yosemite	Turtleback Dome	97.6	22.5	July-September	18.2	July-September	18.7	July-September
Zion	Dalton's Wash	99.2	10.7	June-August	10.3	June-August	10.8	June-August
<b>Sites operated by the NPS for the Bureau of Land Management</b>								
Rangely	Golf Course	96.6	7.0	June-August	7.9	June-August	8.4	June-August
<b>Sites operated by cooperating state agencies</b>								
Acadia	Cadillac Mountain	97.6	2.7	May-July	3.5	April-June	3.9	March-May
Acadia	McFarland Hill	96.8	0.5	April-June	2.4	March-May	2.9	March-May
Badlands	Visitor Center	96.0	3.7	June-August	5.4	June-August	5.9	June-August
Cape Cod	Cape Cod	98.1	2.6	June-August	2.9	June-August	3.3	June-August
Chamizal	Chamizal	96.3	14.1	June-August	11.2	June-August	11.7	June-August
Congaree	Congaree Bluff	98.7	0.0	February-April	0.7	February-April	2.0	March-May
Everglades	Cutler Road	97.2	3.2	March-May	3.0	March-May	3.4	March-May
Great Smoky Mountains	Purchase Knob	95.2	1.1	April-June	4.0	April-June	4.5	April-June



**Table 4. 2020 Summary of indices for resource injury (SUM06 and W126) (continued).**

National Park Unit	Site Name	O <sub>3</sub> % Valid	SUM06 <sup>a</sup> (ppm-hr)	SUM06 Period	W126 <sup>b</sup> (ppm-hr)	W126 Period	NPS W126 <sup>c</sup> (ppm-hr)	NPS W126 Period
<i>Indiana Dunes</i>	Ammunition Bunker	93.9	11.0	June-August	8.2	June-August	8.7	June-August
<i>Mount Rainier</i>	Jackson Visitor's Center	97.9	1.6	July-September	2.1	March-May	2.5	March-May
<i>Saguaro</i>	East	98.1	13.0	April-June	11.1	April-June	11.6	April-June
<i>Theodore Roosevelt</i>	Painted Canyon, VC	99.0	0.1	April-June	2.3	June-August	2.8	June-August
<i>Wind Cave</i>	Visitor Center	98.6	6.1	July-September	7.4	July-September	7.9	July-September
<b>Portable ozone monitoring systems (POMS)</b>								
<u>Guadalupe Mountains</u>	Maintenance Area	97.4	18.3	July-September	14.3	July-September	14.8	July-September
<u>Joshua Tree</u>	Pinto Wells	95.9	3.0	March-May	5.2	March-May	7.7	April-June
<u>Mojave</u>	Kelso Mountains	99.4	36.3	July-September	22.8	July-September	23.2	July-September

<sup>a</sup> SUM06 exposure index represents the 0800-2000 hourly ozone concentrations equaling or exceeding 0.06 ppm. The value reported here represents a three-month maximum value during the ozone season. Units are ppm-hr.

<sup>b</sup> W126 exposure index represents 0800-2000 hourly ozone concentrations where each concentration is weighted by a function that gives greater emphasis to the higher hourly concentrations while still including the lower ones. The value reported here represents a three-month maximum value during the ozone season. Units are ppm-hr. For more information on the W126 exposure index go to <https://www.nps.gov/subjects/air/glossary.htm>

<sup>c</sup> NPS W126 represents a three-month maximum value during the growing season (March to September) with a monthly completeness criteria of 50%, a three-month completeness criteria of 75%, and a seasonal completeness criteria of 60%.

Operating agency key: plain text = site operated by the National Park Service

*italics* = site operated by a state agency

underline = site operated by the National Park Service, but consisting of non-EPA certified portable instrumentation

**Table 5. 2020 Summary of sulfur dioxide data.**

National Park Unit	Site Name	Highest Daily Maximum 1-Hour Average Concentration <sup>a</sup> (ppb)						Highest Daily Maximum 3-Hour Average Concentration <sup>b</sup> (ppb)				
		1 <sup>st</sup> Highest	2 <sup>nd</sup> Highest	3 <sup>rd</sup> Highest	4 <sup>th</sup> Highest	99 <sup>th</sup> Percentile Value	No. of Days with 1-Hr Average >75 ppb	1 <sup>st</sup> Highest	2 <sup>nd</sup> Highest	3 <sup>rd</sup> Highest	4 <sup>th</sup> Highest	No. of Days with 3-Hr Maximum >549 ppb
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>												
Great Smoky Mountains	Look Rock NCore	1.2	1.1	1.0	0.8	1	0	1.0	0.7	0.6	0.6	0
Hawaii Volcanoes *	Visitor Center	471.5	147.5	21.4	20.7	21	2	186.3	135.0	98.7	87.4	0
Mammoth Cave	Houchin Meadow	3.3	2.4	2.2	2.2	2	0	2.0	1.8	1.7	1.6	0
<b>Sites operated by cooperating state agencies</b>												
<i>Acadia</i>	McFarland Hill	1.2	0.7	0.6	0.5	1	0	0.7	0.4	0.4	0.4	0
<i>Badlands</i>	Visitor Center	4.0	1.5	1.4	1.3	1	0	0.9	0.9	0.8	0.7	0
<i>Indiana Dunes</i>	Ammunition Bunker	36.0	35.9	35.7	31.5	32	0	25.9	22.9	22.3	21.3	0
<i>Theodore Roosevelt</i>	Painted Canyon, VC	8.6	6.0	5.3	5.0	5	0	5.0	4.4	4.1	4.1	0

<sup>a</sup> The primary hourly National Ambient Air Quality Standard for sulfur dioxide is a daily maximum 1-hour average of 75 ppb. (An exceedance of the standard occurs when a daily maximum 1-hour average exceeds 75 ppb. A violation of the standards occurs when the 3-year average of the 99<sup>th</sup> percentile of the daily maximum 1-hour average exceeds 75 ppb.)

<sup>b</sup> The secondary National Ambient Air Quality Standard for sulfur dioxide is 0.5 ppm over a 3-hour period not to be exceeded more than once per year. (A value greater than 0.5 ppm, 549 ppb, or 1300 µg/m<sup>3</sup> exceeds the standard.) (40 CFR 50.5.)

\* This site collected sulfur dioxide data using a range that is not EPA approved.

Operating agency key: plain text = site operated by the National Park Service  
*italics* = site operated by a state agency

Color shading key: **Red** >75 ppb 99<sup>th</sup> percentile value, or >549 ppb 3-hour average

**Table 6. 2020 Summary of carbon monoxide data.**

National Park Unit	Site Name	Highest Daily Maximum 1-Hour Average Concentration <sup>a</sup> (ppm)					No. of Days with 1-Hr Average >35 ppm	Highest Daily Maximum 8-Hour Average Concentration <sup>b</sup> (ppm)				No. of Days with 8-Hr Average >9 ppm
		1 <sup>st</sup> Highest	2 <sup>nd</sup> Highest	3 <sup>rd</sup> Highest	4 <sup>th</sup> Highest	1 <sup>st</sup> Highest		2 <sup>nd</sup> Highest	3 <sup>rd</sup> Highest	4 <sup>th</sup> Highest		
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>												
Great Smoky Mountains	Look Rock NCore	0.310	0.258	0.257	0.249	0	0.242	0.241	0.235	0.222	0	
Mammoth Cave	Houchin Meadow	0.258	0.258	0.248	0.247	0	0.239	0.231	0.230	0.229	0	
Yellowstone	Old Faithful Snow Lodge	1.734	1.575	1.551	1.542	0	1.393	1.351	1.196	1.172	0	
Yellowstone	West Yellowstone	1.183	1.127	1.074	0.843	0	0.692	0.690	0.652	0.624	0	
<b>Sites operated by cooperating state agencies</b>												
<i>Acadia</i>	McFarland Hill	0.291	0.286	0.247	0.243	0	0.257	0.235	0.228	0.216	0	

<sup>a</sup> The primary hourly National Ambient Air Quality Standard for carbon monoxide is a daily maximum 1-hour average of 35 ppm. (An exceedance of the standard occurs when a daily maximum 1-hour average exceeds 35 ppm. A violation of the standard occurs when a daily maximum 1-hour average exceeds 35 ppm more than once in a calendar year.)

<sup>b</sup> The primary National Ambient Air Quality Standard for carbon monoxide is 9 ppm over an 8-hour period. (An exceedance of the standard occurs when an 8-hour average exceeds 9 ppm. A violation of the standard occurs when a daily maximum 8-hour average exceeds 9 ppm more than once in a calendar year.) (40CFR 50.8.)

Operating agency key: plain text = site operated by the National Park Service  
*italics* = site operated by a state agency

Color shading key: **Red** >35 ppm 1-hour average or >9 ppm 8-hour average

**Table 7. 2020 Summary of nitrogen dioxide data.**

National Park Unit	Site Name	Highest Daily Maximum 1-Hour Average Concentrations <sup>ab</sup> (ppb)						
		1st Highest	2nd Highest	3rd Highest	4th Highest	98 <sup>th</sup> Percentile Value	No. of Days with 1-Hour Average >100 ppb	Annual Arithmetic Mean
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>								
Chaco Culture	Radio Repeater	8.4	7.8	7.4	7.1	4	0	1
Great Smoky Mountains	Look Rock NCore	25.7	13.3	11.1	9.5	6	0	2
Mammoth Cave	Houchin Meadow	21.6	17.0	13.3	13.0	12	0	2
Yellowstone	Old Faithful Snow Lodge	18.2	17.6	17.4	14.5	13	0	1
Yellowstone	West Yellowstone	79.9	30.0	30.0	28.3	24	0	2
<b>Sites operated by the NPS for the Bureau of Land Management</b>								
Rangely	Golf Course	30.5	30.1	28.2	27.9	26	0	2

<sup>a</sup> The primary hourly National Ambient Air Quality Standard for nitrogen dioxide is a daily maximum 1-hour average of 100 ppb. (An exceedance of the standard occurs when a daily maximum 1-hour average exceeds 100 ppb. A violation of the standard occurs when the 3-year average of the 98th percentile of the daily maximum 1-hour average exceeds 100 ppb. (40 CFR 50.11)

<sup>b</sup> The primary and secondary annual National Ambient Air Quality Standard for nitrogen dioxide is an annual arithmetic mean of 53 ppb. (An exceedance and violation of the standard occurs when an annual arithmetic mean of NO<sub>2</sub> concentrations is greater than 53 ppb.) (40 CFR 50.11.)

Operating agency key: plain text = site operated by the National Park Service

*italics* = site operated by a state agency

Color shading key: **Red** >53 ppb annual arithmetic mean or >100 ppb 98<sup>th</sup> percentile value

**Table 8. 2020 Summary of oxides of nitrogen data.**

National Park Unit	Site Name	Highest Daily Maximum 1-Hour Average Concentrations (ppb)				No. of Days with 1-Hour Average >100 ppb
		1st Highest	2nd Highest	3rd Highest	4th Highest	
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>						
Chaco Culture	Radio Repeater	11.7	8.9	7.9	7.0	0
Great Smoky Mountains	Look Rock Ncore (NO <sub>v</sub> )	25.7	13.4	11.2	9.5	0
Mammoth Cave	Houchin Meadow (NO <sub>v</sub> )	28.3	17.6	13.4	13.1	0
Yellowstone	Old Faithful Snow Lodge	46.4	36.9	36.4	35.4	0
Yellowstone	West Yellowstone	235.7	211.8	185.2	109.0	4
<b>Sites operated by the NPS for the Bureau of Land Management</b>						
Rangely	Golf Course	45.0	43.1	37.0	35.9	0
<b>Sites operated by cooperating state agencies</b>						
<i>Acadia</i>	<i>McFarland Hill (NO<sub>v</sub>)</i>	8.9	7.9	7.8	7.1	0
Operating agency key:	plain text = site operated by the National Park Service <i>italics</i> = site operated by a state agency					

**Table 9. 2020 Summary of PM<sub>2.5</sub> data from reference and equivalency methods.**

National Park Unit	Site Name	Sampler Type*	% Valid	Annual Arithmetic Mean <sup>a</sup> (µg/m <sup>3</sup> )	Highest Daily Maximum 24-Hour Average Concentrations <sup>b</sup> (µg/m <sup>3</sup> )					98 <sup>th</sup> Percentile Value	No. of Days with 24-Hour Average >35 µg/m <sup>3</sup>
					1st Highest	2nd Highest	3rd Highest	4th Highest			
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>											
Great Smoky Mountains	Look Rock NCore	TEOM	98.6	6.5	23.9	21.0	18.4	16.9	14.3	0	
Hawaii Volcanoes	Visitor Center	BAM	72.1	2.7	10.6	9.7	9.5	8.9	8.3	0	
Joshua Tree	Cottonwood Visitor Center	BAM	73.3	6.2	47.4	47.0	25.4	24.7	18.1	2	
Minidoka	Maintenance Building	BAM	99.5	2.3	8.8	7.3	6.6	5.9	5.9	0	
Sequoia and Kings Canyon	Ash Mountain	BAM	82.6	14.5	219.4	192.2	187.5	148.9	98.2	35	
Yellowstone	Old Faithful Snow Lodge	BAM	97.6	4.0	75.4	72.9	69.4	63.2	47.9	12	
Yellowstone	West Yellowstone	BAM	96.2	2.2	47.8	46.1	44.1	42.0	40.2	7	
<b>Sites operated by the NPS for the Bureau of Land Management</b>											
Rangely	Golf Course	BAM	93.3	8.0	41.1	30.4	24.0	23.5	22.8	1	
<b>Sites operated by cooperating state agencies</b>											
<i>Acadia</i>	McFarland Hill	BAM	94.5	2.0	11.5	9.5	9.2	8.7	7.4	0	
<i>Badlands</i>	Visitor Center	BAM	99.1	3.7	20.2	19.0	18.3	17.8	16.6	0	
<i>Indiana Dunes</i>	Ammunition Bunker	BAM	96.0	7.0	23.1	22.5	21.5	18.8	16.2	0	
<i>Theodore Roosevelt</i>	Painted Canyon Visitor Ctr	TEOM	98.1	3.2	15.0	13.1	12.8	12.3	11.7	0	
<i>Wind Cave</i>	Visitor Center	BAM	97.2	2.7	31.4	23.5	21.2	20.2	15.8	0	

<sup>a</sup> The primary annual National Ambient Air Quality Standard for PM<sub>2.5</sub> is an annual arithmetic mean of 15.0 µg/m<sup>3</sup>. (An exceedance of the standard occurs when an annual arithmetic mean of PM<sub>2.5</sub> concentrations is greater than 15.0 µg/m<sup>3</sup>. A violation of the standard occurs when the 3-year average of the weighted annual mean PM<sub>2.5</sub> concentrations is greater than 15.0 µg/m<sup>3</sup>.) (40 CFR 50.7.)

<sup>b</sup> The primary daily National Ambient Air Quality Standard for PM<sub>2.5</sub> is a 24-hour average concentration of 35 µg/m<sup>3</sup>. (An exceedance of the standard occurs when a 24-hour average PM<sub>2.5</sub> concentration is greater than 35 µg/m<sup>3</sup>. A violation of the standard occurs when the 3-year average of the annual 98<sup>th</sup> percentile of 24-hour PM<sub>2.5</sub> concentrations is greater than 35 µg/m<sup>3</sup>.) (40 CFR 50.7.)

\* TEOM = tapered element oscillating microbalance  
BAM = beta attenuation monitor

Operating agency key: plain text = site operated by the National Park Service  
italics = site operated by a state agency

Color shading key: Annual arithmetic mean **Red** >15 µg/m<sup>3</sup>  
98<sup>th</sup> percentile value **Red** >35 µg/m<sup>3</sup>

**Table 10. 2020 Summary of PM<sub>10</sub> data from reference and equivalency methods.**

National Park Unit	Site Name	Sampler Type*	% Valid	Annual Arithmetic Mean <sup>a</sup> (µg/m <sup>3</sup> )	Highest Daily Maximum 24-Hour Average Concentrations <sup>b</sup> (µg/m <sup>3</sup> )				No. of Days with 24-Hour Average >150 µg/m <sup>3</sup>
					1st Highest	2nd Highest	3rd Highest	4th Highest	
<b>Sites operated by cooperating state agencies</b>									
<i>Badlands</i>	Visitor Center	BAM	98.8	12	50	40	40	40	0
<i>Wind Cave</i>	Visitor Center	BAM	98.9	11	70	60	50	50	0
<i>Yosemite</i>	Village	BAM	96.8	33	720	480	430	360	14

<sup>a</sup> The primary and annual National Ambient Air Quality Standard for PM<sub>10</sub> is an annual arithmetic mean of 50 µg/m<sup>3</sup>. (An exceedance of the standard occurs when an annual arithmetic mean of PM<sub>10</sub> concentrations is greater than 50 µg/m<sup>3</sup>. A violation of the standard occurs when the 3-year average of the weighted annual mean PM<sub>10</sub> concentrations is greater than 50 µg/m<sup>3</sup>.) (40 CFR 50.6.)

<sup>b</sup> The primary daily National Ambient Air Quality Standard for PM<sub>10</sub> is a 24-hour average concentration of 150 µg/m<sup>3</sup>. (An exceedance of the standard occurs when a 24-hour average PM<sub>10</sub> concentration is greater than 150 µg/m<sup>3</sup>. A violation of the standard occurs when a 24-hour average concentration greater than 150 µg/m<sup>3</sup> occurs more than once in a calendar year.) (40 CFR 50.6.)

\* TEOM = tapered element oscillating microbalance  
 BAM = beta attenuation monitor

Operating agency key: *italics* = site operated by a state agency

Color shading key: **Red** >50 µg/m<sup>3</sup> annual arithmetic mean, > 150 µg/m<sup>3</sup> 24-hour average

**Table 11. 2020 PM<sub>10</sub> summary - maximum daily 24-hour average concentration in 2018-2020 (µg/m<sup>3</sup>)<sup>a</sup>.**

National Park Unit	Site Name	Sampler Type*	2020	2019	2018
<b>Sites operated by cooperating state agencies</b>					
<i>Badlands</i>	Visitor Center	BAM	50	30	60
<i>Wind Cave</i>	Visitor Center	BAM	70	30	40
<i>Yosemite</i>	Village	BAM	720	130	(310)

<sup>a</sup> The primary daily National Ambient Air Quality Standard for PM<sub>10</sub> is a 24-hour average concentration of 150 µg/m<sup>3</sup>. (An exceedance of the standard occurs when a 24-hour average PM<sub>10</sub> concentration is greater than 150 µg/m<sup>3</sup>. A violation of the standard occurs when a 24-hour average concentration greater than 150 µg/m<sup>3</sup> occurs more than once per year on average over 3 years.) (40 CFR 50.6.)

\* TEOM = tapered element oscillating microbalance  
 BAM = beta attenuation monitor

Operating agency key: *italics* = site operated by a state agency

Color shading key: **Red** = more than one 24-hour average concentration > 150 µg/m<sup>3</sup>



**Table 12. 2020 Annual summary of selected meteorological data.**

National Park Unit	Site Name	Wind Speed	Ambient Temperature			Relative Humidity			Precipitation
		(m/s)	(degrees C)			(%)			(mm)
		Average	Average	Maximum	Minimum	Average	Maximum	Minimum	Annual Accumulation
<b>Sites operated by the National Park Service (Gaseous Pollutant Monitoring Program)</b>									
Big Bend	K-Bar Ranch Road	3.6	21.4	40.3	-3.6	38	100	3	184.7
Canyonlands	Island in the Sky	2.8	12.9	36.5	-11.7	36	95	3	118.4
Carlsbad Caverns	Biology Building	4.0	18.8	40.9	-8.3	35	100	5	158.4
Chaco Culture	Radio Repeater	4.1	12.5	36.3	-13.3	39	99	6	104.9
Chiricahua	Entrance Station	2.9	17.1	37.6	-9.1	36	97	4	243.9
Craters of the Moon	Visitor Center	3.3	7.1	35.2	-16.4	---	---	---	---
Death Valley	Park Village	3.6	27.1	49.5	7.2	---	---	---	---
Denali	Headquarters	1.3	-2.5	23.4	-34.4	72	98	19	428.0
Dinosaur	West Entrance Housing	1.5	9.6	37.8	-18.7	---	---	---	101.3
Everglades	Beard Center	3.2	24.8	34.8	2.8	80	99	20	1843.3
Glacier	West Glacier Horse Stables	0.8	5.8	33.4	-18.0	---	---	---	---
Grand Canyon	The Abyss	2.8	12.4	33.4	-10.9	35	95	4	66.7
Grand Teton	Science School	2.6	2.1	30.9	-28.1	65	96	10	300.0
Great Basin	Maintenance Yard	2.8	10.3	36.4	-14.5	37	97	5	129.5
Great Smoky Mountains	Cades Cove	1.2	14.1	33.1	-12.6	78	100	16	1720.7
Great Smoky Mountains	Clingmans Dome	2.4	11.4	21.8	-9.7	89	100	5	1526.9
Great Smoky Mountains	Cove Mountain	4.3	11.1	27.0	-15.8	73	100	6	1448.2
Great Smoky Mountains	Look Rock	2.2	13.4	30.0	-12.6	74	100	17	1775.4
Hawaii Volcanoes	Visitor Center	3.6	15.8	24.2	6.5	89	98	44	1941.0
Joshua Tree	Black Rock	3.8	16.9	39.6	-4.9	32	99	2	169.5
Joshua Tree	Cottonwood Visitor Center	2.5	19.4	40.9	-2.2	29	100	5	89.0
Lassen Volcanic	Manzanita Lake Fire Station	1.0	7.8	32.8	-12.2	61	96	9	740.6
Mammoth Cave	Houchin Meadow	1.7	14.2	33.1	-11.0	76	100	23	1541.1
Mesa Verde	Resource Management Area	3.0	13.9	34.0	-11.0	37	98	5	195.2
Minidoka	Maintenance Building	2.3	8.6	38.8	-16.0	61	97	8	---
Petrified Forest	South Entrance	4.0	14.6	38.3	-13.5	---	---	---	---
Pinnacles	SW of East Entrance Station	2.1	14.8	45.8	-5.2	57	100	7	172.1
Rocky Mountain	Longs Peak	2.5	4.8	27.6	-25.5	47	95	5	282.0
Sequoia and Kings Canyon	Ash Mountain	2.5	18.0	42.3	-1.0	49	100	8	69.8
Sequoia and Kings Canyon	Lower Kaweah	1.6	15.4	31.9	-3.1	51	99	8	199.1
Shenandoah	Big Meadows	1.8	9.1	28.4	-15.3	76	100	6	1662.1
Voyageurs	Sullivan Bay	2.3	4.6	34.7	-34.2	73	100	12	510.6
Yellowstone	Old Faithful Snow Lodge	1.7	0.9	29.0	-36.0	66	99	11	---
Yellowstone	Water Tank	1.7	1.1	28.5	-25.4	65	97	9	443.5
Yellowstone	West Entrance	1.1	2.2	31.3	-33.4	66	99	9	---
Yosemite	Turtleback Dome	4.1	15.6	32.8	-6.0	44	95	7	234.2
Zion	Dalton's Wash	4.2	17.4	43.9	-7.4	---	---	---	144.1
<b>Sites operated by the NPS for the Bureau of Land Management</b>									
Rangely	Golf Course	3.1	9.3	37.4	-21.4	48	99	6	134.3

**Table 12. 2020 Annual summary of selected meteorological data (continued).**

National Park Unit	Site Name	Wind Speed	Ambient Temperature			Relative Humidity			Precipitation
		(m/s)	(degrees C)			(%)			(mm)
		Average	Average	Maximum	Minimum	Average	Maximum	Minimum	Annual Accumulation
<b>Sites operated by cooperating state agencies</b>									
<i>Acadia</i>	Cadillac Mountain	4.4	10.0	24.9	-7.7	75	100	17	---
<i>Acadia</i>	McFarland Hill	2.6	8.2	31.6	-21.7	75	99	14	1115.3
<i>Cape Cod</i>	Cape Cod	2.5	11.7	36.9	-9.2	71	93	18	---
<i>Chamizal</i>	Chamizal	3.0	20.6	40.8	-2.9	30	95	5	---
<i>Indiana Dunes</i>	Ammunition Bunker	2.9	10.6	35.0	-18.5	72	100	21	---
<i>Saguaro</i>	East	---	22.2	41.6	-2.5	27	99	1	---
<i>Theodore Roosevelt</i>	Painted Canyon, VC	5.1	8.6	35.7	-27.7	60	95	13	188.9
<i>Wind Cave</i>	Visitor Center	2.8	10.5	37.1	-19.1	52	100	7	385.1
<b>Portable ozone monitoring systems (POMS)<sup>b</sup></b>									
<u>Guadalupe Mountains</u>	Maintenance Area	3.7	22.8	36.8	-7.6	37	99	8	135.5
<u>Joshua Tree</u>	Pinto Wells	3.2	23.3	46.7	0.6	24	98	3	50.1
<u>Mojave</u>	Kelso Mountains	3.3	23.3	40.0	-0.1	26	99	6	0.0

Note : Dashed lines represent no data available for that particular parameter at that site.

Operating agency key: plain text = site operated by the National Park Service

*italics* = site operated by a state agency

underline = site operated by the National Park Service, but consisting of non-EPA certified portable instrumentation