Special Report

METRICS

Report Contents

SARDINE CANYON OVERLOOK, WELLSVILLE MOUNTAINS | KORI KURTZEBORN

Report Summary

by BRIAN STEED

Since the founding of the Institute in 2021, the annual *Report to the Governor and Legislature on Utah's Land, Water, and Air* has been our flagship project. The report synthesizes research efforts and highlights the beauty of Utah's diverse landscapes and ecology. Our purpose is to provide unique information on a host of land, water, air, and special topics.

In approaching our report this year, we found an additional purpose: providing a curated report of land, water, and air metrics. This special report compiles numerous public datasets detailing topics from mining extractions to harmful algae blooms and relates them to various geographic and political boundaries. It is our intention to update with current data from the same sources in subsequent reports, continuing to refine communication and collect additional sources.

Often the biggest challenge in approaching an issue is understanding the data around it. Finding, synthesizing, and communicating these metrics is challenging and time consuming. We hope to increase data visibility and provide tools for understanding each of these metrics. The metrics detailed in the following sections are publicly available, provided and managed by several state and federal agencies including: Utah Department of Natural Resources, Utah Department of Environmental Quality, Utah Department of Agriculture and Food, Bureau of Land Management, and Environmental Protection Agency. Thank you to the researchers, managers, and staff who work to provide this data.

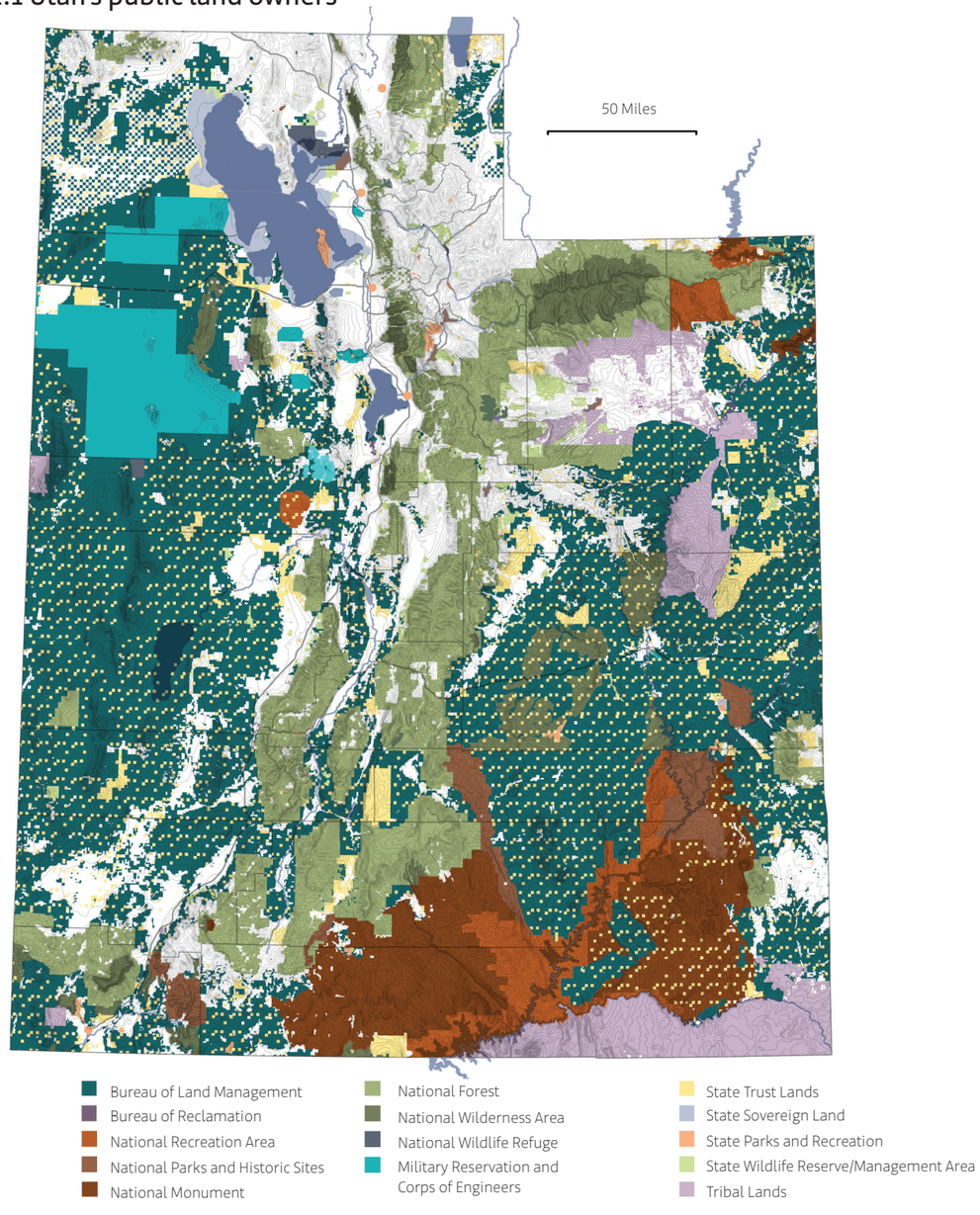
Data Analytics Team

KORI KURTZEBORN, MAKENNA ROBERTS, and AVERY CHILD

SARDINE CANYON OVERLOOK, WELLSVILLE MOUNTAINS | KORI KURTZEBORN

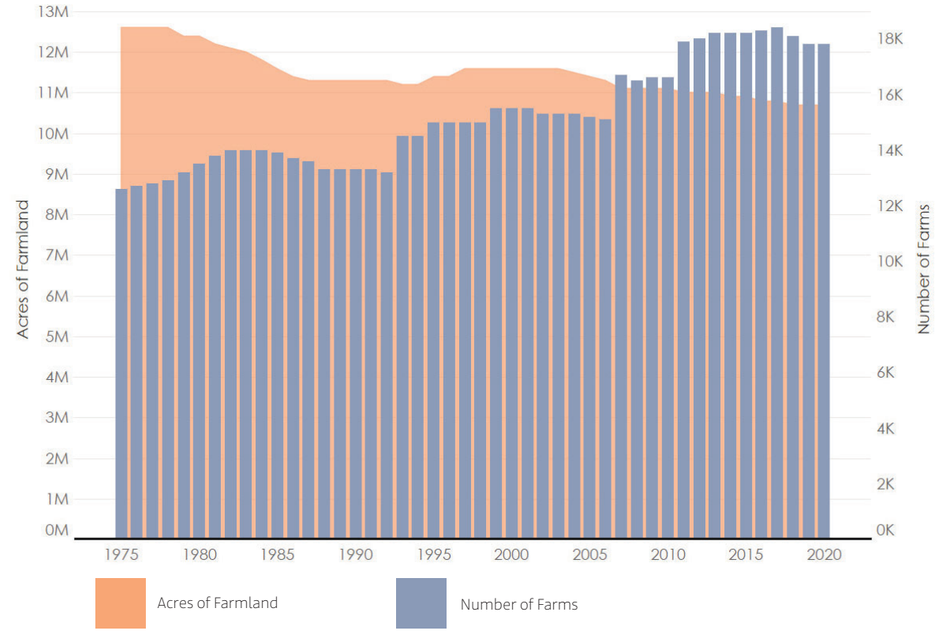
Utah's LAND *metrics*

L.1.1 Utah's public land owners



Created using land ownership data cooperatively maintained by the Bureau of Land Management and the Utah Trust Lands Administration, this map details public landowners across Utah. Private land is not colored on this map.

L.1.2 Number of operating farms and farmed acres



Created using data from the Utah Department of Agriculture and Food annual summary, this chart compares the number of farmed acres to the number of operating farms. This chart shows that while the number of operating farms continues to increase, agricultural land decreases.

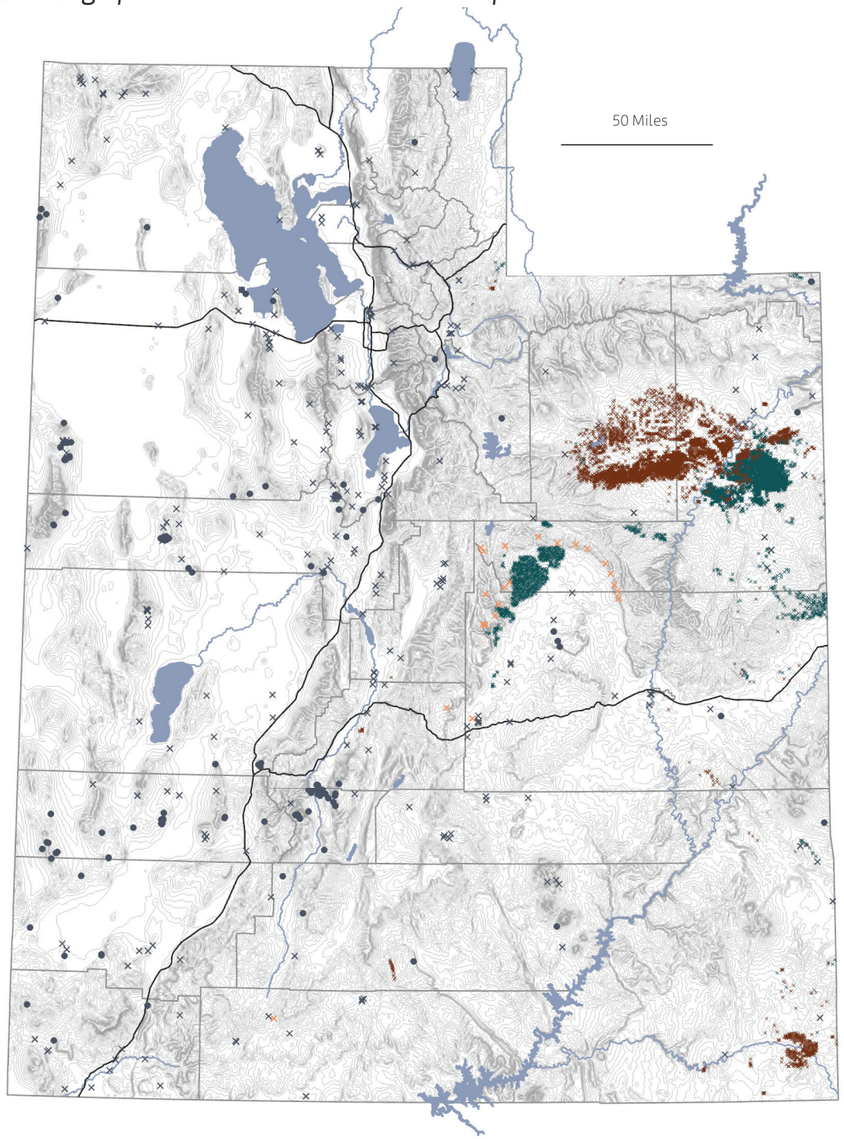
The public lands of Utah are owned and managed by several federal and state agencies. Federal public lands are owned and managed by the Bureau of Land Management, National Forest Service, National Parks Service, military institutions, etc. State public lands are managed by Utah Division of Forestry Fire and State Lands, the Utah Division of State Parks , the Utah Trust Lands Administration, and other relevant state agencies. The Utah Trust Lands Administration manages a patchwork of parcels granted to the state by the federal government at statehood with the purpose of generating revenue for public institutions, primarily schools. These lands are carefully considered for various development, extraction, renewable energy, and other projects for the best benefit to public institutions and sustainability. Different from other public lands, these areas are generally not open access and are only occasionally developed for recreational use.

Utah has a statewide legacy of productive agriculture. Examining the way we develop or maintain farmed lands, and considering who manages them is important to understanding the future of this legacy. In recent years we observe a trend of lost farmland as the number of acres held in agriculture decreases. Interestingly, this coincides with an increase in the total number of farms operating. These seemingly contrary trends indicate an increase in the number of small-scale farm operations around the state.

The following metric section highlights a variety of spatial and numeric measures of Utah's landscape. It details wildfire history, select wildlife species' habitat and game harvest, mining extractions, and statewide park visitation numbers.

Critical Minerals and Active Mines

L.2.1 Mining operations and critical mineral deposits



Created by compiling data from the Utah Division of Oil, Gas, and Mining and Utah Geospatial Resource Center, this map highlights active natural gas, oil, and coal operations throughout the state, as well as several critical mineral deposits. Critical minerals, defined in The Energy Act of 2020, are critical to economic or national security and may be vulnerable to supply chain disruption.

Coal Production

Sourced from the Utah Mining 2022 report (Circular 136), published by the Utah Geological Survey. This dataset details historic coal production by mine. Coal production is measured in **short tons**.

L.2.2 Coal production by mine (short tons)

Mine	County	2016	2017	2018	2019	2020	2021	2022	2023
Dugout Canyon	Carbon	650	626	557	430	-	-	-	-
Skyline #3	Carbon/ Sanpete/ Emery	4,767	4,389	3,614	3,896	3,713	3,530	2,521	3,500
SUFCO	Sevier	5,375	5,947	4,842	4,374	4,601	3,425	3,882	3,300
Fossil Rock (Trail Mtn.)	Emery	-	-	-	-	-	-	-	100
Emery	Emery	-	135	442	694	474	1,171	1,063	1,300
Gentry #3	Emery	170	205	102	562	660	511	600	750
Gentry #4	Emery	724	754	893	488	11	-	-	-
Lila Canyon	Emery	1,587	1,638	2,816	3,664	3,296	3,471	2,299	500
Coal Hollow	Kane	671	724	488	240	569	434	354	350
Burton #1	Kane	34	-	-	-	-	-	-	-
Total	**Statewide**	**13,978**	**14,418**	**13,754**	**14,348**	**13,324**	**12,542**	**10,719**	**9,800**

Oil Production

Oil and natural gas production data is provided by the Utah Division of Oil, Gas, and Mining. The dataset includes detailed information on oil and natural gas production by county, field, and operator. Shown here is historic oil production summed by county. Oil production is measured in **barrels (BBL)**.

L.2.3 Oil production aggregated by county (barrels)

County	2019	2020	2021	2022	2023
Carbon	43,181	34,890	28,003	28,234	25,920
Daggett	533	1,306	1,127	1,498	1,123
Duchesne	20,034,684	16,497,440	20,353,519	29,065,414	38,544,883
Emery	18	0	0	0	0
Garfield	125,868	110,211	116,775	117,869	109,339
Grand	218,571	146,093	141,384	118,899	109,493
Rich	0	0	34	0	466
San Juan	2,923,214	2,546,169	2,427,331	2,342,787	2,715,931
Sanpete	71,819	71,276	64,345	59,853	57,561
Sevier	1,330,640	1,103,994	960,444	1,126,316	1,116,612
Summit	165,682	157,335	156,364	143,077	152,386
Uintah	10,895,503	9,368,558	10,628,668	11,489,677	12,608,795
Unreported	1,123,387	963,624	893,478	920,932	1,007,655
Statewide Total	**36,933,100**	**31,000,896**	**35,771,472**	**45,414,556**	**56,450,164**

Natural Gas Production

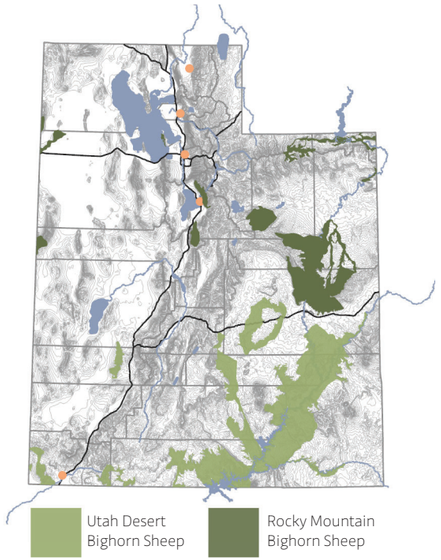
Oil and natural gas production data is provided by the Utah Division of Oil, Gas, and Mining. The dataset includes detailed information on oil and natural gas production by county, field, and operator. Shown here is historic natural gas production summed by county. Natural gas production is measured in **cubic ft**.

L.2.4 Natural gas production aggregated by county (cubic feet)

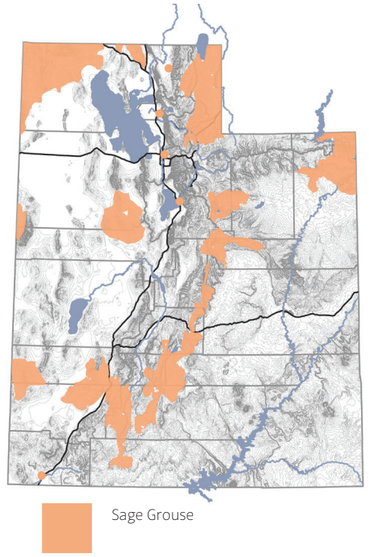
County	2019	2020	2021	2022	2023
Carbon	38,344,267	35,247,645	33,087,386	30,964,336	29,960,523
Daggett	981,362	851,446	733,777	794,204	748,794
Duchesne	43,123,342	39,804,599	45,287,760	55,608,011	62,308,224
Emery	6,363,961	5,949,925	5,611,293	5,379,334	5,114,518
Garfield	9,125	9,151	9,129	9,103	9,113
Grand	2,559,605	2,327,458	2,604,236	2,776,170	2,391,346
San Juan	8,473,564	7,114,447	7,059,639	6,259,206	7,991,906
Sanpete	666,573	634,255	580,237	533,187	514,481
Summit	1,807,140	868,890	1,103,811	1,224,218	1,145,318
Uintah	165,764,581	145,182,399	139,453,806	152,895,889	175,716,245
Unreported	4,884,379	4,570,118	4,518,390	4,109,853	3,486,524
Statewide Total	**272,977,899**	**242,560,333**	**240,049,464**	**260,553,511**	**289,386,992**

Habitat Areas of Relevant Species

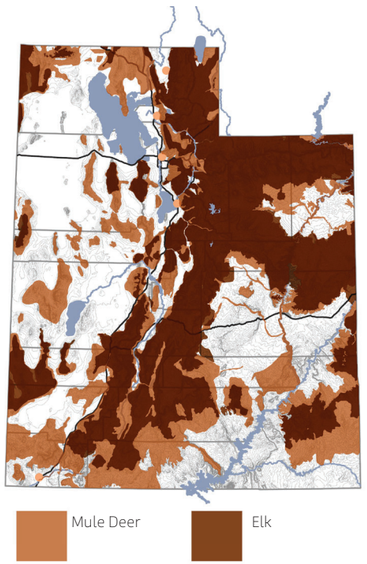
L.3.1 Bighorn Sheep



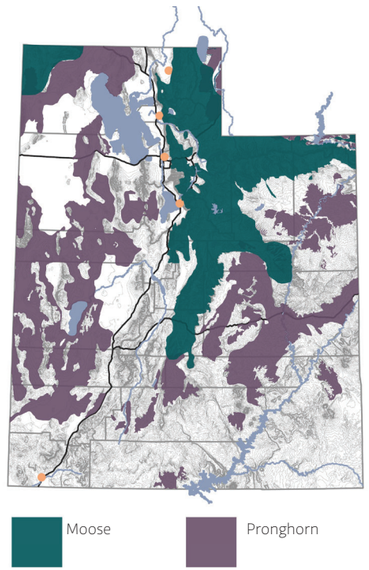
L.3.2 Sage Grouse



L.3.3 Elk and Deer



L.3.4 Moose and Pronghorn



Big Game Harvest

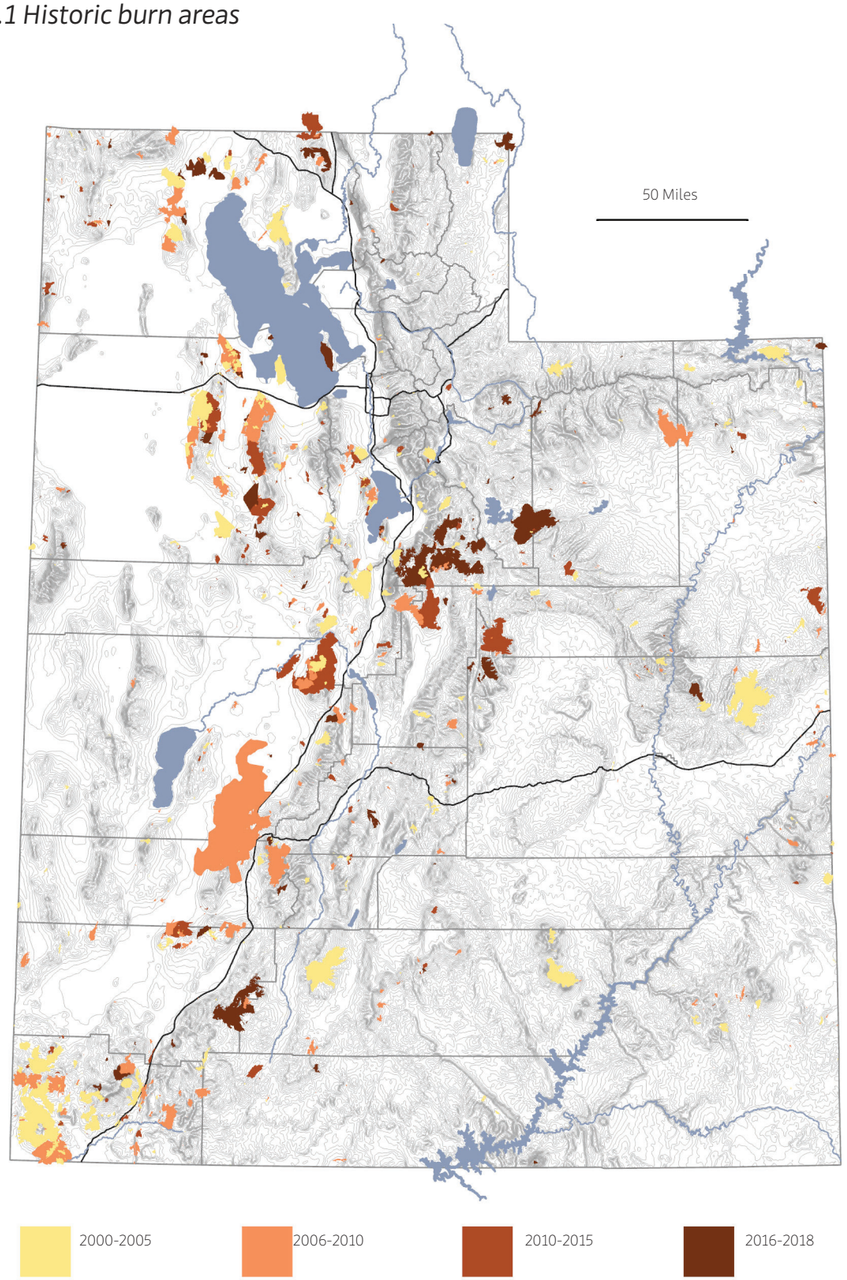
A compilation of annual permit and harvest data from select species monitored by Utah Division of Wildlife Resources. The total number of successful harvests for each hunt area are summed statewide. Maps highlighting habitat areas for these and other relevant species are provided for reference. Data supporting these maps comes from the Utah Division of Wildlife Resources.

L.3.5 Statewide harvest by species

Permit Type & Species	2015	2016	2017	2018	2019	2020	2021	2022	2023
General Harvest Buck Deer	29,553	31,315	26,907	28,908	21,348	20,340	21,947	23,286	17,031
Limited Entry Buck Deer	2,441	2,597	2,619	2,622	2,413	2,496	2,413	2,396	2,143
Antlerless Deer	359	492	938	1,209	1,201	604	444	356	180
Total Deer	**32,353**	**34,404**	**30,464**	**32,739**	**24,962**	**23,440**	**24,804**	**26,038**	**19,354**
Limited Entry Bull Elk	2,786	2,658	2,706	2,629	2,581	2,665	2,719	2,916	2,722
Antlerless Elk	6,926	7,639	4,166	5,616	4,912	4,264	4,875	5,304	4,277
Total Elk	**9,712**	**10,297**	**6,872**	**8,245**	**7,493**	**6,929**	**7,594**	**8,220**	**6,999**
Once In a Lifetime Bull Moose	137	133	137	163	159	167	176	173	162
Anterless Moose	0	15	18	24	34	28	13	15	8
Total Moose	**137**	**148**	**155**	**187**	**193**	**195**	**189**	**188**	**170**
Limited Entry Buck Pronghorn	775	737	845	888	983	1,085	1,112	1,205	1,232
Anterless Pronghorn	501	481	592	593	527	463	271	220	148
Total Pronghorn	**1,276**	**1,218**	**1,437**	**1,481**	**1,510**	**1,548**	**1,383**	**1,425**	**1,380**
Desert Bighorn Sheep	45	41	60	57	75	83	75	76	76
Rocky Mountain Bighorn Sheep	40	41	38	44	58	71	68	62	62
Once in a Lifetime Bison	67	59	96	214	183	100	114	144	123
Mountain Goat	112	103	100	115	114	117	110	96	85

Historic Wildfires

L.4.1 Historic burn areas



This map highlights data from the Monitoring Trends in Burn Severity interagency project. These datasets capture footprints of historic burn areas and keep point data of present and historic fires. Highlighted here are historic burn areas colorized by year.

Wildfire Response History

This dataset from the Geospatial Multi-Agency Coordination Group (GEOMAC) contains historic wildfire perimeter and area information. Including comprehensive geospatial information on wildfire incidents across Utah, this dataset contains key attributes such as the location, size, and extent of each fire. Using a spatial join, wildfires from this dataset are assigned to the county containing a majority of the burn area. Fire size and responding agencies are included below; data is summed by county.

L.4.2 Statewide wildfire history

		Responding Agency (Number of Fires Attended)			
Year	Acres Burned	Bureau of Land Management	United States Forest Service	Division of Forestry, Fire, and State Lands	Other State Agency
2000	195,036	32	0	0	59
2001	88,489	0	0	0	65
2002	240,786	0	0	0	59
2003	102,505	51	12	0	1
2004	92,393	57	5	0	1
2005	226,754	91	11	0	14
2006	325,413	160	8	0	19
2007	593,052	91	5	0	19
2008	17,700	42	4	0	5
2009	102,664	37	12	0	0
2010	58,853	21	11	0	3
2011	48,866	65	7	0	2
2012	414,910	90	10	0	20
2013	78,518	14	11	0	4
2014	15,618	8	8	0	1
2015	5,542	9	5	0	6
2016	90,216	14	29	9	1
2017	184,091	26	9	13	1
2018	343,588	36	17	18	8

National and State Park Visitation

The National Park Service tracks visitor numbers for national parks, while the Utah Department of Natural Resources monitors visitation at state parks. These datasets provide annual visitor statistics, spanning from the start of reporting for each selected park up to the most recent calendar year. Each park also has an issued set of counting procedures to record the number of visitors in the park. These methods can range from traffic counters, door counters, or are done manually.

L.5.1 National park visitation

Year	Arches	Bryce Canyon	Canyonlands	Capitol Reef	Zion
2003	757,781	903,760	386,986	535,441	2,458,792
2004	733,131	987,253	371,706	549,708	2,677,342
2005	781,670	1,017,681	393,381	550,255	2,586,665
2006	833,049	890,676	392,537	511,511	2,567,350
2007	860,181	1,012,563	417,560	554,907	2,657,281
2008	928,795	1,043,321	436,715	604,811	2,690,154
2009	996,312	1,216,377	436,241	617,208	2,735,402
2010	1,014,405	1,285,492	435,908	662,661	2,665,972
2011	1,040,758	1,296,000	473,773	668,834	2,825,505
2012	1,070,577	1,385,352	452,952	673,345	2,973,607
2013	1,082,866	1,311,875	462,242	663,670	2,807,387
2014	1,284,767	1,435,741	542,431	786,514	3,189,696
2015	1,399,247	1,745,804	634,607	941,029	3,648,846
2016	1,585,718	2,365,110	776,218	1,064,904	4,295,127
2017	1,539,028	2,571,684	742,271	1,150,165	4,504,812
2018	1,663,557	2,679,478	739,449	1,227,627	4,320,033
2019	1,659,702	2,594,904	733,996	1,226,519	4,488,268
2020	1,238,083	1,464,655	493,914	981,038	3,591,254
2021	1,806,865	2,104,600	911,594	1,405,353	5,039,835
2022	1,460,652	2,354,660	779,147	1,227,608	4,692,417
2023	1,482,045	2,461,269	800,322	1,268,861	4,623,238

L.5.2 State park visitation

Year	Anasazi Indian Village State Park	Antelope Island State Park	Bear Lake State Park	Camp Floyd - Stage Coach Inn State Park	Coral Pink Sand Dunes State Park
2003	33,145	268,732	32,230	12,348	128,675
2004	34,076	255,155	45,228	12,293	122,832
2005	32,959	272,381	105,849	15,422	65,270
2006	27,614	250,886	232,825	15,850	66,468
2007	26,958	281,266	225,985	15,018	69,509
2008	24,309	256,901	198,141	16,331	62,741
2009	24,883	273,510	175,049	16,213	58,943
2010	21,850	285,390	229,669	16,656	56,939
2011	20,605	282,145	242,749	16,703	52,676
2012	20,119	292,662	234,095	16,609	58,734
2013	19,166	307,239	185,113	13,527	64,430
2014	19,836	328,139	213,346	13,472	73,156
2015	19,253	394,748	245,780	15,446	78,737
2016	21,221	409,246	281,717	13,657	92,010
2017	18,771	475,371	321,277	14,360	130,016
2018	19,751	499,469	364,199	13,774	117,922
2019	19,477	528,865	458,344	16,933	128,558
2020	14,236	815,445	638,798	6,278	177,655
2021	21,640	1,074,569	603,297	8,605	252,623
2022	17,301	885,078	539,173	18,303	229,527
2023	19,949	936,147	569,905	12,238	229,005

L.5.3 State park visitation continued

Year	Dead Horse Point State Park	Deer Creek State Park	East Canyon State Park	Echo State Park	Edge Of The Cedars State Park
2003	161,774	176,975	71,101	-	19,309
2004	145,800	202,740	56,641	-	41,315
2005	137,265	209,149	55,904	-	10,446
2006	169,206	355,003	95,543	-	17,420
2007	172,176	326,038	98,010	-	17,555
2008	184,560	260,299	79,731	-	13,516

National and State Park Visitation

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L.5.3 State park visitation continued

Year	Dead Horse Point State Park	Deer Creek State Park	East Canyon State Park	Echo State Park	Edge Of The Cedars State Park
2009	179,157	295,993	99,663	-	11,981
2010	169,595	359,365	83,967	-	12,416
2011	182,419	305,748	100,250	-	14,286
2012	200,620	360,565	82,731	-	10,881
2013	266,263	225,873	64,410	-	9,656
2014	351,743	218,886	95,166	-	8,950
2015	398,094	255,946	92,571	-	10,858
2016	416,180	334,357	92,120	-	10,121
2017	704,841	400,383	120,307	5,777	12,489
2018	880,678	422,119	142,452	6,451	12,212
2019	978,380	433,855	159,881	55,488	12,735
2020	792,099	707,836	252,273	77,726	5,196
2021	1,265,223	688,619	190,084	44,512	12,402
2022	1,069,571	587,052	205,561	25,255	13,776
2023	1,080,536	702,506	232,674	133,437	13,616

L.5.4 State park visitation continued

Year	Escalante Petrified Forest State Park	Fremont Indian State Park	Goblin Valley State Park	Goosenecks State Park	Great Salt Lake Marina State Park
2003	36,105	71,465	67,913	57,098	139,254
2004	82,584	58,190	46,065	87,170	38,196
2005	37,455	66,235	56,597	58,910	57,966
2006	40,451	64,116	30,081	40,761	138,763
2007	39,554	72,184	39,529	50,340	250,478
2008	42,978	74,919	63,343	58,096	214,127
2009	39,599	82,486	52,771	66,722	213,289
2010	40,229	78,055	46,270	65,545	249,085

L.5.4 State park visitation continued

Year	Escalante Petrified Forest State Park	Fremont Indian State Park	Goblin Valley State Park	Goosenecks State Park	Great Salt Lake Marina State Park
2011	57,934	101,993	61,435	63,778	254,317
2012	51,774	113,892	80,628	69,670	272,842
2013	53,315	70,960	94,222	28,891	136,530
2014	46,521	13,092	108,914	-	177,380
2015	48,678	16,621	158,404	45,351	423,012
2016	53,512	19,488	220,738	61,941	110,845
2017	61,477	25,000	251,004	66,523	112,154
2018	63,471	25,037	279,555	63,445	77,390
2019	66,730	32,490	305,325	66,313	94,687
2020	57,669	45,317	309,039	25,256	118,119
2021	86,049	52,423	453,937	49,385	149,194
2022	73,969	48,540	408,343	55,660	136,170
2023	90,821	51,605	398,962	56,367	169,377

L.5.5 State park visitation continued

Year	Green River State Park	Gunlock State Park	Huntington State Park	Hyrum State Park	Frontier State Park
2003	83,951	82,665	41,270	74,411	16,549
2004	-	37,835	61,947	17,139	166,457
2005	20,937	-	54,833	62,712	13,176
2006	22,857	60,891	47,848	67,980	18,498
2007	20,217	45,222	19,043	82,480	15,853
2008	21,142	51,915	37,197	70,705	16,904
2009	25,190	41,225	59,459	62,961	16,881
2010	23,282	60,189	60,035	131,973	16,272
2011	23,571	55,912	67,418	89,885	17,617
2012	23,740	55,574	71,757	124,958	20,127
2013	35,482	36,474	38,048	83,526	12,826
2014	47,326	13,684	32,276	50,827	18,546
2015	52,189	14,621	29,660	73,225	8,435
2016	56,988	14,142	31,435	76,239	10,126
2017	68,039	24,022	35,911	90,280	11,778
2018	74,498	40,126	38,157	89,305	12,302

National and State Park Visitation

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L.5.5 State park visitation continued

Year	Green River State Park	Gunlock State Park	Huntington State Park	Hyrum State Park	Frontier State Park
2019	82,335	71,052	36,803	109,971	12,385
2020	84,413	114,923	63,789	146,846	8,277
2021	120,653	73,335	55,579	139,555	14,669
2022	106,154	61,021	43,233	146,212	15,039
2023	90,002	269,603	42,124	152,788	15,287

L.5.6 State park visitation continued

Year	Jordanelle State Park	Jordan River OHV State Park	Kodachrome Basin State Park	Lost Creek State Park	Millsite State Park
2003	112,169	-	57,689	-	17,130
2004	59,463	-	21,856	-	-
2005	182,895	-	49,700	-	28,044
2006	198,592	-	49,804	-	20,353
2007	310,348	-	52,523	-	34,923
2008	296,781	-	52,712	-	32,383
2009	290,326	17,477	50,939	-	34,266
2010	265,208	15,364	52,654	-	34,782
2011	257,675	11,921	49,806	-	40,487
2012	323,689	18,347	48,407	-	40,959
2013	261,528	13,968	66,858	-	20,615
2014	275,225	91,710	73,002	-	19,960
2015	380,995	10,015	102,840	-	13,030
2016	485,292	13,046	110,517	-	30,902
2017	576,536	19,366	118,790	-	14,078
2018	624,103	59,796	130,860	-	11,065
2019	652,705	55,123	132,202	-	13,348

L.5.6 State park visitation continued

Year	Jordanelle State Park	Jordan River OHV State Park	Kodachrome Basin State Park	Lost Creek State Park	Millsite State Park
2020	977,252	69,293	150,144	10,520	62,708
2021	821,719	86,873	199,555	11,599	44,914
2022	712,633	101,398	160,956	93	18,558
2023	829,944	113,729	152,777	13,381	23,828

L.5.7 State park visitation continued

Year	Otter Creek State Park	Palisade State Park	Piute State Park	Point of the Mountain Sky Park	Quail Creek State Park
2003	47,346	125,624	9,647	-	514,718
2004	151,111	8,502	164,945	-	27,550
2005	43,689	125,017	21,990	-	165,702
2006	65,267	211,646	29,609	-	108,482
2007	70,973	233,739	47,918	-	112,534
2008	83,042	290,682	26,230	-	95,239
2009	72,722	313,501	29,249	-	97,110
2010	57,786	141,458	18,294	-	101,967
2011	57,942	167,869	17,531	-	72,366
2012	51,875	195,596	16,739	-	64,980
2013	36,654	135,271	7,983	-	58,555
2014	25,838	100,059	2,143	-	72,110
2015	29,903	110,946	1,636	-	78,854
2016	36,708	123,063	1,184	-	88,054
2017	37,363	140,950	1,084	-	107,622
2018	31,257	151,383	793	-	141,879
2019	38,222	173,421	1,408	-	169,137
2020	137,867	105,477	4,481	159,376	168,067
2021	112,705	96,229	9,167	186,592	206,807
2022	43,833	184,404	535	5,234	283,321
2023	47,820	257,874	1,322	3,827	336,676

National and State Park Visitation

The National Park Service tracks visitor numbers for national parks, while the Utah Department of Natural Resources monitors visitation at state parks. These datasets provide annual visitor statistics, spanning from the start of reporting for each selected park up to the most recent calendar year. Each park also has an issued set of counting procedures to record the number of visitors in the park. These methods can range from traffic counters, door counters, or are done manually.

L.5.8 State park visitation continued

Year	Red Fleet State Park	Rockport State Park	Sand Hollow State Park	Scofield State Park	Snow Canyon State Park
2003	33,162	159,570	135,749	106,942	277,285
2004	184,504	352,949	103,336	287,132	106,366
2005	23,959	172,783	172,179	78,276	206,606
2006	30,818	117,683	186,685	102,276	255,643
2007	38,274	127,832	203,753	126,895	385,963
2008	39,210	135,937	175,587	108,975	299,233
2009	37,222	137,697	185,141	79,862	308,126
2010	28,617	132,415	193,633	75,584	321,752
2011	31,822	146,314	183,691	45,160	344,915
2012	45,142	157,575	217,367	39,779	353,870
2013	28,647	105,717	225,849	36,561	292,332
2014	24,979	104,683	320,150	24,889	220,643
2015	28,096	110,458	386,340	19,789	261,043
2016	27,632	130,282	498,644	20,968	291,573
2017	37,032	146,928	575,184	22,952	318,294
2018	49,580	130,020	763,564	22,167	391,444
2019	56,331	153,244	864,751	28,249	509,348
2020	186,888	864,853	580,051	298,635	418,421
2021	122,726	759,199	870,299	532,605	381,620
2022	36,344	190,419	1,089,087	35,482	735,329
2023	14,008	206,574	1,415,554	45,497	954,572

L.5.9 State park visitation continued

Year	Fred Hayes State Park at Starvation	Steinaker State Park	Territorial Statehouse State Park	Utah Field House of Natural History State Park	Utah Lake State Park
2003	110,301	35,400	30,091	52,150	83,076
2004	27,612	38,109	78,133	166,211	843,772

L.5.9 State park visitation continued

Year	Fred Hayes State Park at Starvation	Steinaker State Park	Territorial Statehouse State Park	Utah Field House of Natural History State Park	Utah Lake State Park
2005	51,957	35,136	34,894	60,179	252,565
2006	54,398	45,615	46,794	52,027	265,271
2007	61,351	57,621	50,169	47,070	270,836
2008	56,294	70,312	53,493	42,409	284,740
2009	64,609	73,378	20,562	36,464	336,952
2010	61,539	81,517	8,817	40,356	278,664
2011	70,044	91,434	22,564	44,290	285,359
2012	89,697	43,522	29,079	44,786	280,422
2013	79,967	27,732	14,785	48,680	234,032
2014	83,729	25,024	5,264	45,206	150,899
2015	96,972	36,893	7,751	60,324	140,546
2016	109,588	40,684	7,776	54,821	117,029
2017	119,830	39,365	9,023	53,700	143,802
2018	116,148	26,577	5,697	56,448	89,622
2019	112,753	16,686	10,117	57,381	150,475
2020	90,482	24,517	31,307	155,516	410,395
2021	109,355	22,280	45,365	183,179	255,170
2022	139,477	52,933	6,615	61,657	215,687
2023	153,538	79,299	9,520	60,704	342,885

L.5.10 State park visitation continued

Year	UtahRaptor State Park	Wasatch Mountain State Park	Willard Bay State Park	Yuba State Park
2003	-	799,617	206,968	66,660
2004	-	138,868	92,149	-
2005	-	915,963	297,038	138,233
2006	-	412,283	325,933	122,964
2007	-	279,176	192,224	180,045
2008	-	298,195	171,589	180,059
2009	-	341,881	304,441	194,947
2010	-	359,871	340,645	225,213
2011	-	357,696	337,072	140,965

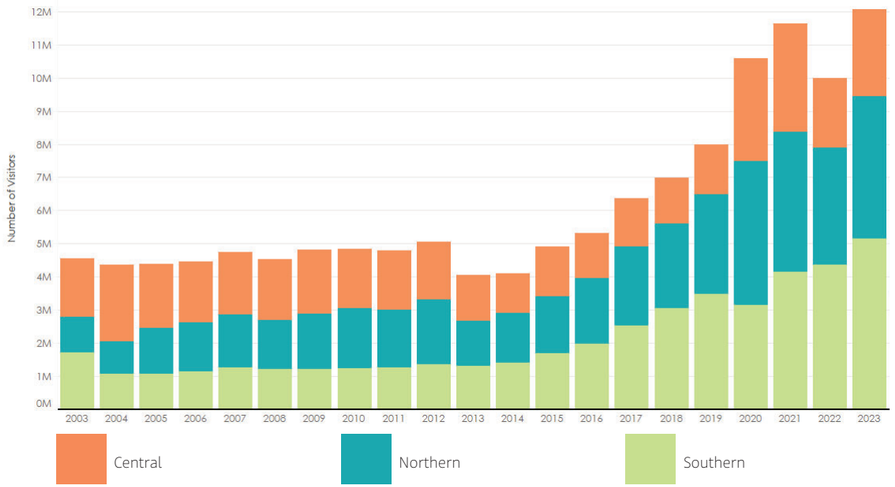
National and State Park Visitation

The National Park Service tracks visitor numbers for national parks, while the Utah Department of Natural Resources monitors visitation at state parks. These datasets provide annual visitor statistics, spanning from the start of reporting for each selected park up to the most recent calendar year. Each park also has an issued set of counting procedures to record the number of visitors in the park. These methods can range from traffic counters, door counters, or are done manually.

L.5.10 State park visitation continued

Year	UtahRaptor State Park	Wasatch Mountain State Park	Willard Bay State Park	Yuba State Park
2012	-	256,887	348,534	237,708
2013	-	358,095	144,008	112,217
2014	-	280,030	227,315	99,237
2015	-	284,865	260,798	102,902
2016	-	340,697	366,251	100,514
2017	-	353,400	482,391	109,231
2018	-	353,727	503,808	92,830
2019	-	360,274	645,381	124,471
2020	508,761	271,566	372,526	77,218
2021	370,997	440,934	352,145	58,710
2022	2,486	574,185	540,910	120,829
2023	17,571	678,082	880,331	152,987

L.5.9 State park visitation history by region

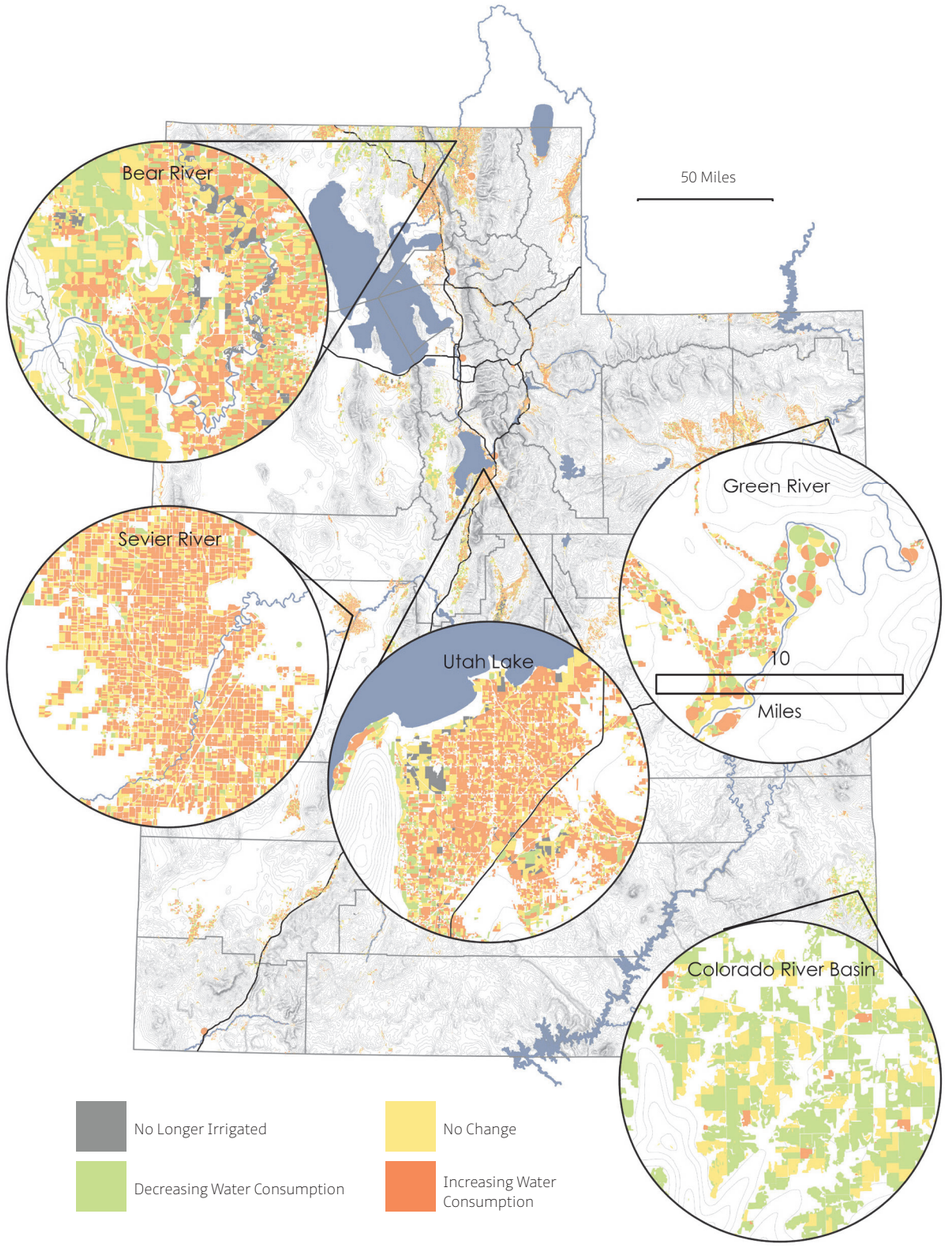


This chart was made using the state park visitation data from the Utah Department of Natural Resources covering the years 2003 to 2024. It displays the total number of park visits each year with the data categorized and color-coded by region: northern, central, and southern Utah.

CANYONLANDS NATIONAL PARK WHITE RIM OVERLOOK | AARON FORTIN

Utah's WATER *metrics*

W.1.1 Irrigation system changes from 2018-2023



W.1.2 Waterbody fill level at end of 2024 water year

Above: Made using reported reservoir storage information and lake elevation levels from the month of October, marking the end of the 2024 water year. This bar chart compares the elevation of several waterbodies. Footprints are colored to show the percentage of total capacity filled around peak season. The spatial size and total water volume is not represented here, instead the graphic shows the amount of water within each body with a normalized capacity.

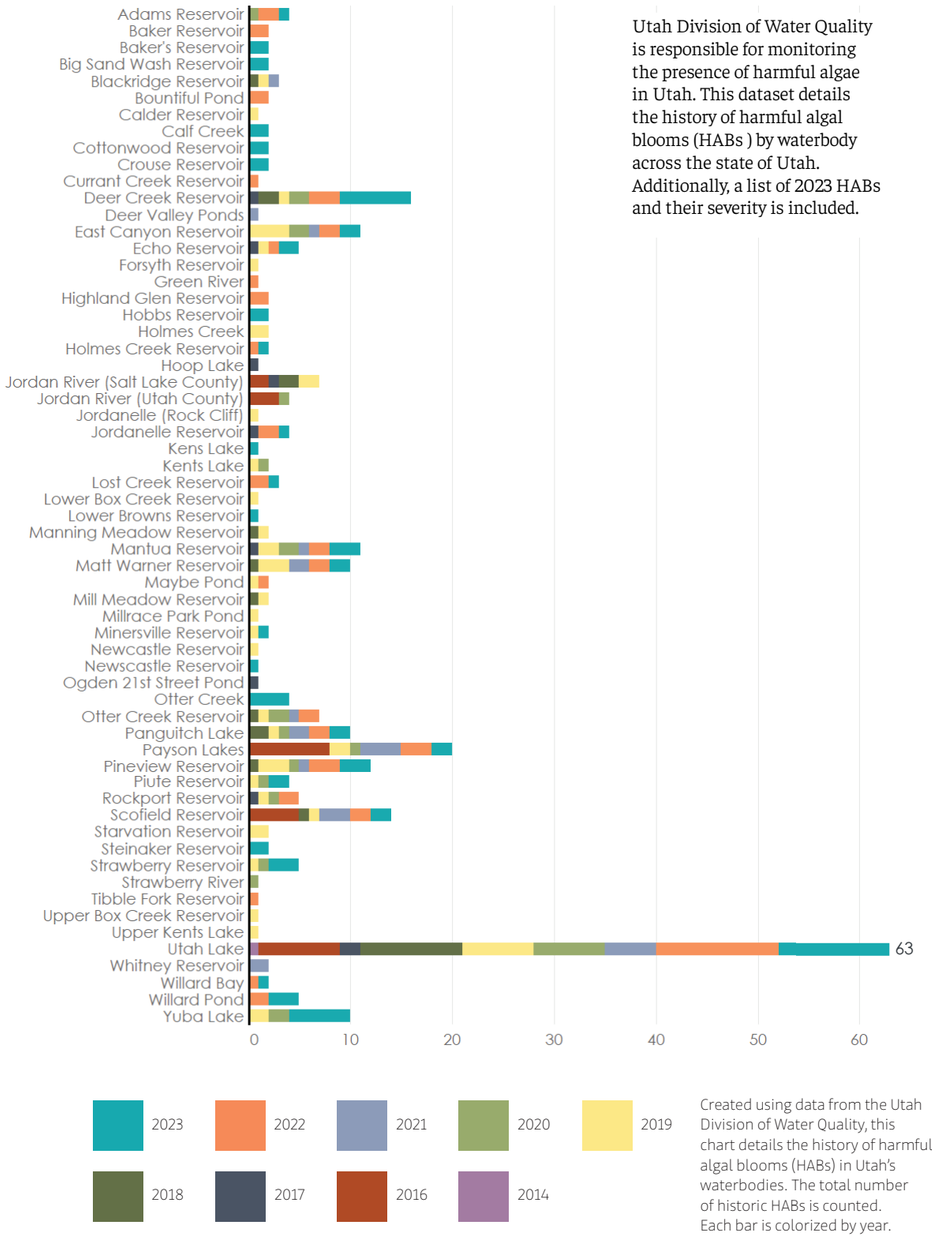
Left: Made by comparing irrigation methods reported in 2018 and 2023, this map draws generalizations about changes in water consumption, or water lost to the natural system. System changes were grouped into three general categories using the Irrigation Conversion Water Savings Destination Calculator produced by Utah State University Extension: decreasing, increasing, and unchanging water consumption. Generally, non-irrigated lands are considered the least consumptive. Other watering systems, ordered from least to greatest consumptive, include drip systems, surface irrigation systems, and sprinkler irrigation systems.

Water conservation efforts have brought a host of policy and scientific attention to infrastructure efficiency. Across the state farmers are shifting irrigation methods to better align with known best practices, capitalize on incentives, and update aging infrastructure. Some of these changes are demonstrated in the map to the left.

The state of Utah has been in an off-and-on state of drought for the past several years. As weather patterns change, and we continue to exist in this natural drought cycle, it's important to monitor and budget our water availability, storage, and use. The chart above highlights reservoir storage at the end of the water year for a few key reservoirs. High-storage volume is indicative of the past few years of good water. The following statewide water budget information provides further information about where we receive and use our water. This information is critical to understanding the complex natural systems that dictate our water availability and informing the political systems that govern it.

Historic Harmful Algal Blooms

W.2.1 Number of blooms per waterbody



Utah Division of Water Quality is responsible for monitoring the presence of harmful algae in Utah. This dataset details the history of harmful algal blooms (HABs) by waterbody across the state of Utah. Additionally, a list of 2023 HABs and their severity is included.

Created using data from the Utah Division of Water Quality, this chart details the history of harmful algal blooms (HABs) in Utah's waterbodies. The total number of historic HABs is counted. Each bar is colorized by year.

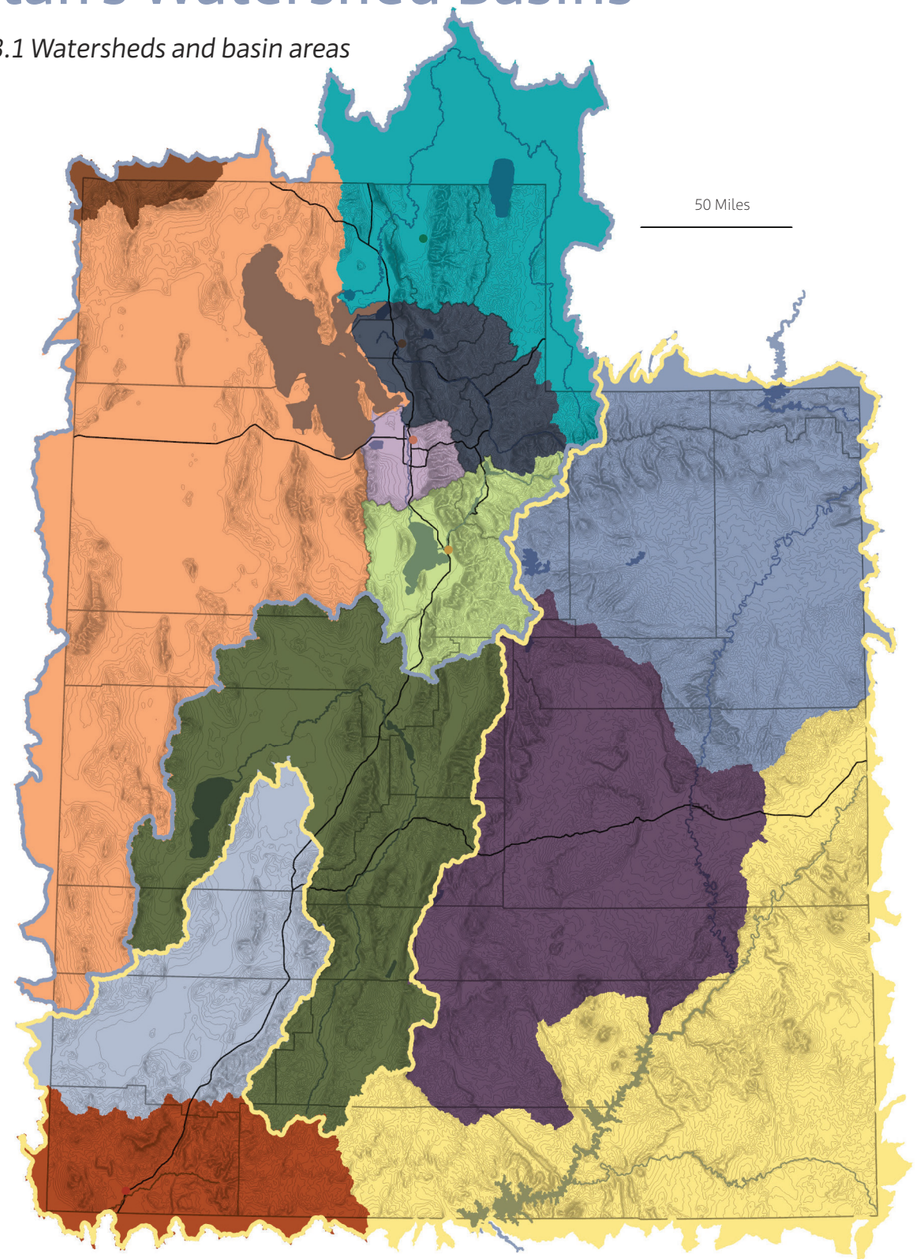
W.2.2 2023 Bloom locations, duration in days, and severity

Waterbody	Length	Advisory Type
Adams Reservoir	80	Warning
Baker's Reservoir	1	Health Watch
Baker's Reservoir	Current (11/1)	Warning
Big Sand Wash Reservoir	11	Health Watch
Big Sand Wash Reservoir	28	Warning
Calf Creek	98	Health Watch
Calf Creek	63	Warning
Cottonwood Reservoir	11	Health Watch
Cottonwood Reservoir	28	Warning
Crouse Reservoir	1	Health Watch
Crouse Reservoir	102	Warning
Deer Creek Reservoir: Charleston	15	Health Watch
Deer Creek Reservoir: Charleston	11	Warning
Deer Creek Reservoir: Charleston	21	Danger
Deer Creek Reservoir: Charleston	66	Warning
Deer Creek Reservoir	84	Health Watch
Deer Creek Reserovir	60	Warning
Deer Creek Reservoir	38	Warning
East Canyon Reservoir	6	Health Watch
East Canyon Reservoir	35	Warning
Echo Reservoir	7	Health Watch
Echo Reservoir	32	Warning
Hobbs Reservoir	2	Health Watch
Hobbs Reservoir	64	Warning
Holmes Creek Reservoir	66	Warning
Jordanelle Reservoir	39	Health Watch
Kens Lake	23	Health Watch
Lost Creek Reservoir	35	Warning
Lower Browns Reservoir	20	Health Watch
Mantua Reservoir	17	Health Watch
Mantua Reservoir	69	Warning
Mantua Reservoir	12	Health Watch
Matt Warner Reservoir	1	Health Watch
Matt Warner Reservoir	102	Warning
Minersville Reservoir	43	Health Watch
Newcastle Reservoir	56	Health Watch
Otter Creek: State Park	42	Warning
Otter Creek	41	Warning

Waterbody	Length	Advisory Type
Otter Creek	42	Health Watch
Otter Creek	61	Warning
Panguitch Lake	6	Health Watch
Panguitch Lake	112	Warning
Payson Lakes: McClellan Lake	59	Health Watch
Payson Lakes: McClellan Lake	105	Warning
Pineview Reservoir	3	Health Watch
Pineview Reservoir	29	Warning
Pineview Reservoir	12	Health Watch
Piute Reservoir	7	Health Watch
Piute Reservoir	32	Warning
Scofield Reservoir	1	Health Watch
Scofield Reservoir	104	Warning
Steinaker Reservoir	28	Health Watch
Steinaker Reservoir	70	Warning
Strawberry Reservoir: Jake's Bay	40	Warning
Strawberry Reservoir	33	Health Watch
Strawberry Reservoir: Renegade Point	29	Warning
Utah Lake: Provo Bay	4	Health Watch
Utah Lake: Provo Bay	43	Warning
Utah Lake: Lincoln Beach	47	Warning
Utah Lake: Lindon Marina	4	Health Watch
Utah Lake: Lindon Marina	15	Warning
Utah Lake: American Fork	4	Health Watch
Utah Lake: American Fork	15	Warning
Utah Lake	5	Health Watch
Utah Lake	111	Warning
Utah Lake: Saratoga Springs	68	Health Watch
Utah Lake: State Park	68	Health Watch
Willard Bay	4	Health Watch
Willard Pond	15	Health Watch
Willard Pond	6	Health Watch
Willard Pond	55	Warning
Yuba Lake	2	Health Watch
Yuba Lake	13	Warning
Yuba Lake	9	Danger
Yuba Lake	32	Warning
Yuba Lake	27	Danger
Yuba Lake	32	Warning

Utah's Watershed Basins

W.3.1 Watersheds and basin areas



Delineating watersheds used to inform Utah's water budget model; this map is provided as reference to inform the following tables. Water budget data correlates with watershed boundaries.

Precipitation and Depletions by Basin Area

The Utah Department of Natural Resources Water Budget Model gathers data from agricultural, municipal and industrial, wetland, reservoir, climate, and water supply inputs and calculates the major inputs and outputs for each sub-basin by year. Tables are broken down by basin area and contain annual precipitation and categorical depletions for the years 2010-2022. Precipitation measures the amount of rain and snowfall within the region. Depletions in each category measure the amount of water lost from the system due to consumptive use. Water is measured in **acre-ft.**

W.3.2 Cedar/Beaver basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	6,670,852.86	220,632.89	23,404.86	-
2011	4,500,150.53	207,678.49	23,573.60	-
2012	4,029,005.16	225,812.54	23,581.38	-
2013	4,179,570.40	218,748.06	23,589.30	-
2014	4,204,188.00	210,648.13	23,597.38	-
2015	4,632,036.90	206,705.05	22,441.53	-
2016	4,159,315.02	224,824.57	63,260.49	-
2017	4,397,591.12	209,617.88	49,840.76	-
2018	4,194,275.90	193,831.53	64,566.95	-
2019	5,542,285.65	231,775.19	45,224.47	-
2020	2,112,928.96	225,397.98	46,306.47	-
2021	5,304,898.33	198,510.65	48,135.40	-
2022	4,137,055.35	210,337.83	48,638.99	-

W.3.1 Watersheds and basin areas key

- Bear River
- Sevier River
- West Colorado River
- Great Salt Lake Watershed
- Weber River
- Uintah
- Southeast Colorado River
- Colorado River Watershed
- Columbia River
- Utah Lake
- Kanab Creek/Virgin River
- West Desert
- Jordan River
- Cedar/Beaver

Precipitation and Depletions by Basin Area

The Utah Department of Natural Resources Water Budget Model gathers data from agricultural, municipal and industrial, wetland, reservoir, climate, and water supply inputs and calculates the major inputs and outputs for each sub-basin by year. Tables are broken down by basin area and contain annual precipitation and categorical depletions for the years 2010-2022. Precipitation measures the amount of rain and snowfall within the region. Depletions in each category measure the amount of water lost from the system due to consumptive use. Water is measured in **acre-ft.**

W.3.3 Kanab Creek/Virgin River basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	5,608,051.14	44,985.71	17,603.18	-
2011	2,814,075.56	42,859.03	17,698.87	-
2012	3,149,683.43	46,080.24	17,707.22	-
2013	3,225,423.25	43,185.07	17,716.24	-
2014	2,970,246.95	38,355.44	17,725.99	-
2015	3,882,318.82	37,770.57	18,086.82	-
2016	3,919,746.11	38,264.03	19,549.84	-
2017	3,051,904.22	33,751.75	19,666.93	-
2018	3,268,835.58	37,617.55	20,642.55	-
2019	5,253,698.80	34,116.07	18,539.70	-
2020	1,793,734.77	37,696.23	19,668.48	-
2021	4,088,234.49	36,840.52	19,836.14	-
2022	3,116,298.10	31,962.03	20,433.64	-

W.3.4 West Colorado River basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	9,942,720.11	178,954.77	40,064.98	-
2011	7,840,817.62	196,410.74	40,403.95	-
2012	6,378,647.87	173,173.03	40,405.96	-
2013	9,299,734.80	173,223.78	40,407.98	-
2014	7,455,383.82	196,690.65	40,410.02	-
2015	10,040,399.39	184,209.20	38,799.10	-
2016	8,223,825.76	182,721.97	29,960.48	-
2017	6,788,958.48	195,560.58	32,021.52	-
2018	6,524,514.94	169,225.15	30,355.69	-
2019	9,597,519.56	195,297.13	32,803.74	-
2020	4,074,818.17	191,202.90	29,070.86	-
2021	9,141,652.46	144,444.64	34,414.72	-
2022	6,618,809.34	184,012.93	31,308.70	-

W.3.5 Southeast Colorado River basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	11,688,185.99	34,926.09	4,544.39	-
2011	7,787,316.35	30,741.67	4,968.82	-
2012	6,451,450.89	34,556.39	5,017.39	-
2013	10,361,524.79	26,909.22	4,990.65	-
2014	7,502,902.90	25,365.35	4,991.14	-
2015	13,794,074.75	27,860.72	4,445.80	-
2016	9,364,980.43	30,966.30	4,257.18	-
2017	7,453,219.90	30,707.79	3,863.86	-
2018	7,212,611.03	27,585.75	3,442.20	-
2019	11,291,343.51	35,763.41	3,779.34	-
2020	4,800,896.45	29,628.25	3,419.05	-
2021	9,457,485.01	23,297.71	3,402.95	-
2022	8,488,298.79	22,880.94	3,114.90	-

Precipitation and Depletions by Basin Area

The Utah Department of Natural Resources Water Budget Model gathers data from agricultural, municipal and industrial, wetland, reservoir, climate, and water supply inputs and calculates the major inputs and outputs for each sub-basin by year. Tables are broken down by basin area and contain annual precipitation and categorical depletions for the years 2010-2022. Precipitation measures the amount of rain and snowfall within the region. Depletions in each category measure the amount of water lost from the system due to consumptive use. Water is measured in **acre-ft.**

W.3.6 Uinta basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	11,845,343.79	422,585.45	9,223.81	-
2011	11,345,429.70	447,350.04	9,499.77	-
2012	7,315,686.45	386,580.81	9,508.77	-
2013	9,781,317.83	408,634.35	9,517.97	-
2014	10,101,707.79	389,541.75	9,106.22	-
2015	11,028,626.74	444,333.58	8,296.63	-
2016	11,492,630.97	427,974.51	28,716.90	-
2017	9,820,698.37	480,840.71	24,615.98	-
2018	7,846,571.19	399,533.01	29,927.26	-
2019	12,248,240.00	461,286.12	11,072.96	-
2020	6,097,238.84	448,491.16	12,876.77	-
2021	11,771,512.84	371,768.62	12,140.09	-
2022	9,730,635.50	428,308.19	14,704.22	-

W.3.7 Bear River basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	9,526,605.00	824,984.68	32,444.89	-
2011	9,508,094.32	800,772.22	32,715.65	-
2012	6,975,978.35	912,165.95	32,725.56	-
2013	6,301,025.56	839,333.41	32,735.60	-
2014	10,294,662.52	799,126.37	32,745.78	-
2015	8,051,354.78	744,953.60	27,285.92	-
2016	10,145,513.29	809,932.69	27,793.70	-
2017	11,196,162.02	891,685.32	29,263.40	-
2018	6,843,050.71	995,984.98	32,092.28	-
2019	10,217,422.26	839,046.90	30,195.29	-
2020	6,764,716.26	952,054.77	35,166.58	-
2021	8,436,673.41	986,085.06	33,441.20	-
2022	7,681,217.49	950,223.65	31,573.66	-

W.3.8 West Desert basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	14,031,140.22	152,034.08	8,306.12	83,831.67
2011	12,690,796.29	151,548.32	8,473.85	107,111.41
2012	10,765,479.58	191,953.68	8,483.49	104,775.32
2013	10,805,614.75	197,329.33	8,496.61	119,060.06
2014	13,017,388.84	179,912.56	8,508.97	75,594.94
2015	13,367,911.02	182,284.37	6,740.58	116,508.87
2016	13,390,987.60	204,637.78	6,805.69	80,208.66
2017	12,483,297.48	150,288.69	7,190.71	62,705.88
2018	10,406,940.86	133,373.70	8,408.48	84,747.64
2019	17,229,204.20	159,322.42	7,302.74	65,670.49
2020	6,482,933.35	165,742.98	7,179.12	85,986.55
2021	12,101,354.76	146,732.08	6,365.62	65,373.34
2022	10,414,754.01	135,867.17	6,673.75	120,955.74

Precipitation and Depletions by Basin Area

The Utah Department of Natural Resources Water Budget Model gathers data from agricultural, municipal and industrial, wetland, reservoir, climate, and water supply inputs and calculates the major inputs and outputs for each sub-basin by year. Tables are broken down by basin area and contain annual precipitation and categorical depletions for the years 2010-2022. Precipitation measures the amount of rain and snowfall within the region. Depletions in each category measure the amount of water lost from the system due to consumptive use. Water is measured in **acre-ft.**

W.3.9 Sevier River basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	11,363,629.61	560,334.66	35,292.27	-
2011	9,371,904.52	513,046.44	36,125.29	-
2012	7,639,750.19	613,360.90	36,137.63	-
2013	8,317,781.03	557,828.74	36,150.11	-
2014	8,411,597.07	547,187.45	36,162.74	-
2015	8,265,413.35	545,613.22	37,655.40	-
2016	7,662,917.71	590,835.28	26,708.00	-
2017	7,856,806.80	523,352.52	28,684.17	-
2018	7,409,199.83	519,710.38	28,331.67	-
2019	10,266,087.92	517,144.97	26,174.19	-
2020	4,112,432.22	573,602.37	26,378.80	-
2021	9,621,313.58	516,487.91	25,239.85	-
2022	7,137,013.33	511,647.96	24,523.41	-

W.3.10 Columbia River basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	732,607.38	11,161.37	2.10	-
2011	600,845.71	12,260.03	4.34	-
2012	578,930.57	16,194.42	4.36	-
2013	493,361.65	19,671.70	4.37	-
2014	828,088.89	17,182.10	4.38	-
2015	669,716.26	18,647.00	3.55	-
2016	800,071.46	21,514.23	3.56	-
2017	910,645.63	11,002.74	3.57	-
2018	666,867.97	9,582.26	3.58	-
2019	1,032,385.84	10,202.60	0.51	-
2020	630,151.51	10,944.67	0.37	-
2021	696,837.26	10,911.90	0.29	-
2022	678,902.91	8,689.45	0.28	-

W.3.11 Utah Lake basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	4,252,792.78	222,273.29	63,564.06	-
2011	3,713,625.41	196,510.85	64,129.43	-
2012	2,969,833.72	259,789.69	64,192.33	-
2013	2,816,034.03	227,097.87	64,261.39	-
2014	3,662,927.43	198,520.55	64,337.25	-
2015	2,951,061.53	218,346.63	62,310.91	-
2016	3,237,628.19	236,498.16	66,532.91	-
2017	3,872,002.75	177,630.74	74,651.53	-
2018	3,307,059.33	249,783.44	68,333.87	-
2019	4,610,443.10	186,160.13	75,705.15	-
2020	1,915,329.30	245,930.12	83,812.16	-
2021	3,819,275.24	244,068.56	77,350.49	-
2022	3,163,330.07	208,122.00	82,604.46	-

Precipitation and Depletions by Basin Area

The Utah Department of Natural Resources Water Budget Model gathers data from agricultural, municipal and industrial, wetland, reservoir, climate, and water supply inputs and calculates the major inputs and outputs for each sub-basin by year. Tables are broken down by basin area and contain annual precipitation and categorical depletions for the years 2010-2022. Precipitation measures the amount of rain and snowfall within the region. Depletions in each category measure the amount of water lost from the system due to consumptive use. Water is measured in **acre-ft.**

W.3.12 Jordan River basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	1,124,306.86	17,319.86	197,554.04	-
2011	1,150,283.31	14,700.50	197,535.95	-
2012	820,241.64	21,950.81	197,535.95	-
2013	819,334.01	19,681.59	197,535.96	-
2014	989,594.32	12,863.09	197,535.96	-
2015	953,486.83	14,641.63	190,259.43	-
2016	965,041.94	15,186.45	184,777.67	-
2017	1,087,204.01	10,715.55	187,728.68	-
2018	921,482.28	15,022.38	186,996.16	-
2019	1,453,964.87	10,010.10	158,430.56	-
2020	644,005.40	15,683.25	152,237.64	-
2021	1,074,799.49	14,496.93	137,786.76	-
2022	925,623.70	12,606.21	136,299.21	-

W.3.13 Weber River basin

Year	Precipitation	Agricultural Depletions	Municipal and Industrial Depletions	Mineral Depletions
2010	3,894,741.32	159,044.14	67,856.94	136,284.08
2011	3,896,362.46	141,173.83	68,024.13	98,408.18
2012	2,792,724.48	203,329.78	68,029.31	141,477.95
2013	2,561,133.22	184,789.51	68,034.57	128,187.38
2014	3,560,415.05	147,477.37	68,039.92	139,938.04
2015	3,112,197.46	142,852.37	62,657.30	108,832.87
2016	3,625,607.03	154,594.99	66,325.93	71,332.78
2017	4,148,921.14	147,281.37	65,210.91	122,853.63
2018	2,724,973.18	180,718.49	68,459.95	119,410.46
2019	4,213,144.56	131,142.33	61,212.21	92,291.31
2020	2,245,854.70	182,278.40	80,552.15	119,973.71
2021	3,446,322.73	183,980.40	67,300.43	104,015.03
2022	3,245,873.22	158,400.92	63,707.61	74,092.70

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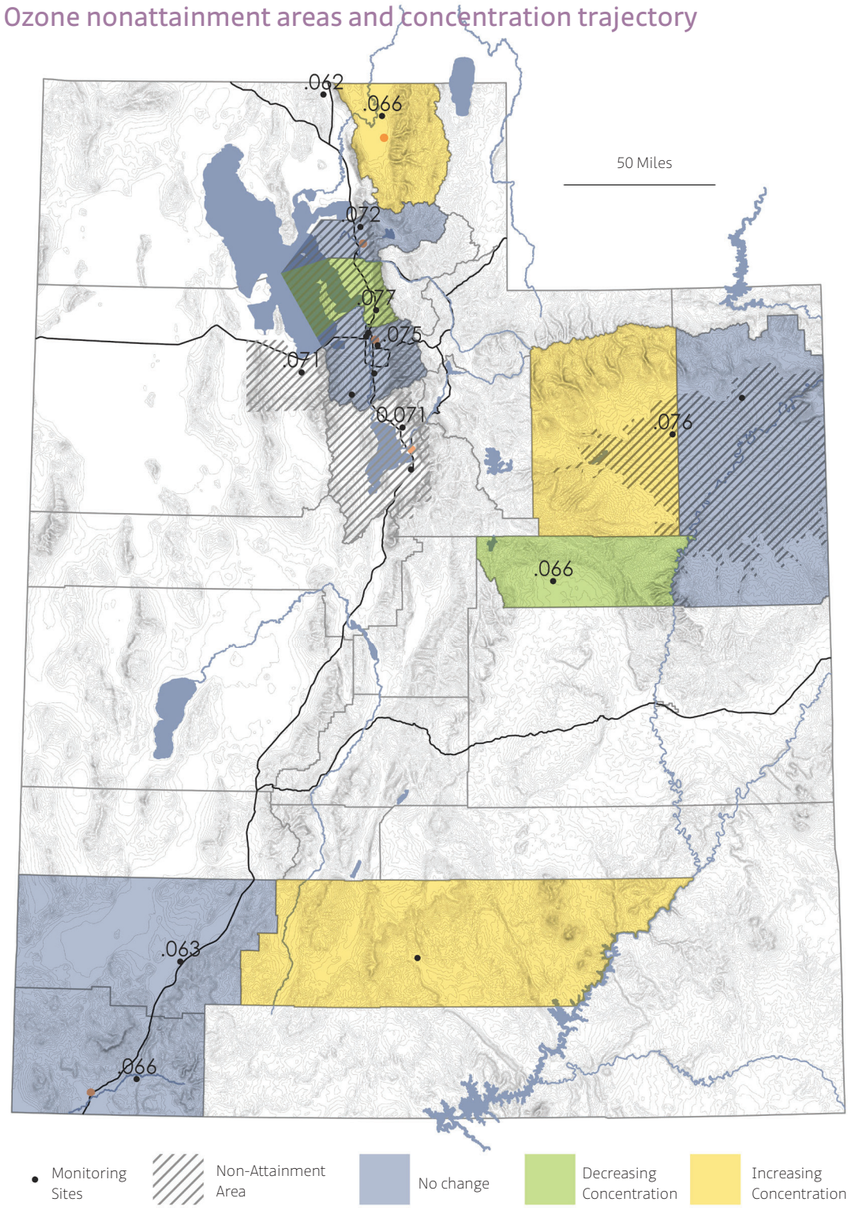
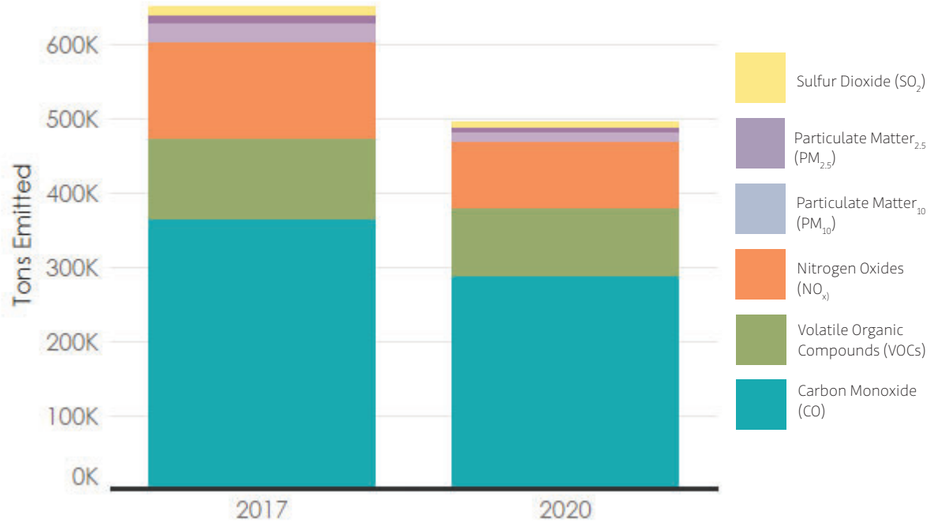
Utah's AIR *metrics*

A.1.1 Ozone nonattainment areas and concentration trajectory



This map highlights air quality monitoring sites across Utah, labeling key sites with ozone (O_3) design values. Design values compare a regional average with national standards to determine attainment. Regional ozone non-attainment areas are also highlighted as reported in the Utah Division of Air Quality (UDAQ) Marginalized Ozone Inventory (2020). Ozone trajectory was calculated using the difference between fourth-highest ozone days in 2020 and 2022. The resulting value is used to colorize the relevant county.

A.1.2 Statewide emissions



Every third year, the Division of Air Quality releases an extended emissions report detailing what has been released into the atmosphere. This chart indicates pollutants released and does not account for the concentration of those pollutants in the atmosphere. This chart sums emissions by pollutant, excluding emissions from biogenic sources and wildfires, from the last two triannual reports. Changes in monitoring strategies make comparisons between historic reports challenging.

The Environmental Protection Agency uses regional design values in comparison with set regulatory values to determine air quality attainment for each pollutant. Design values are calculated using an average of various relevant measures over three years. Information about the measure used to calculate design values and relevant regulatory values can be found in the following table sections. Ozone (O_3) design values are determined by calculating the fourth-highest annual concentration averaged over three years. A design value over the set regulatory value of 0.07 parts per million (ppm) is considered a violation and will cause the area to be moved into nonattainment. Ozone forms in the atmosphere when nitrogen oxides and volatile organic compounds react with sunlight. These, and a variety of other chemicals, are counted as pollutants within our atmosphere. The chart above details emissions for all currently measured pollutants.

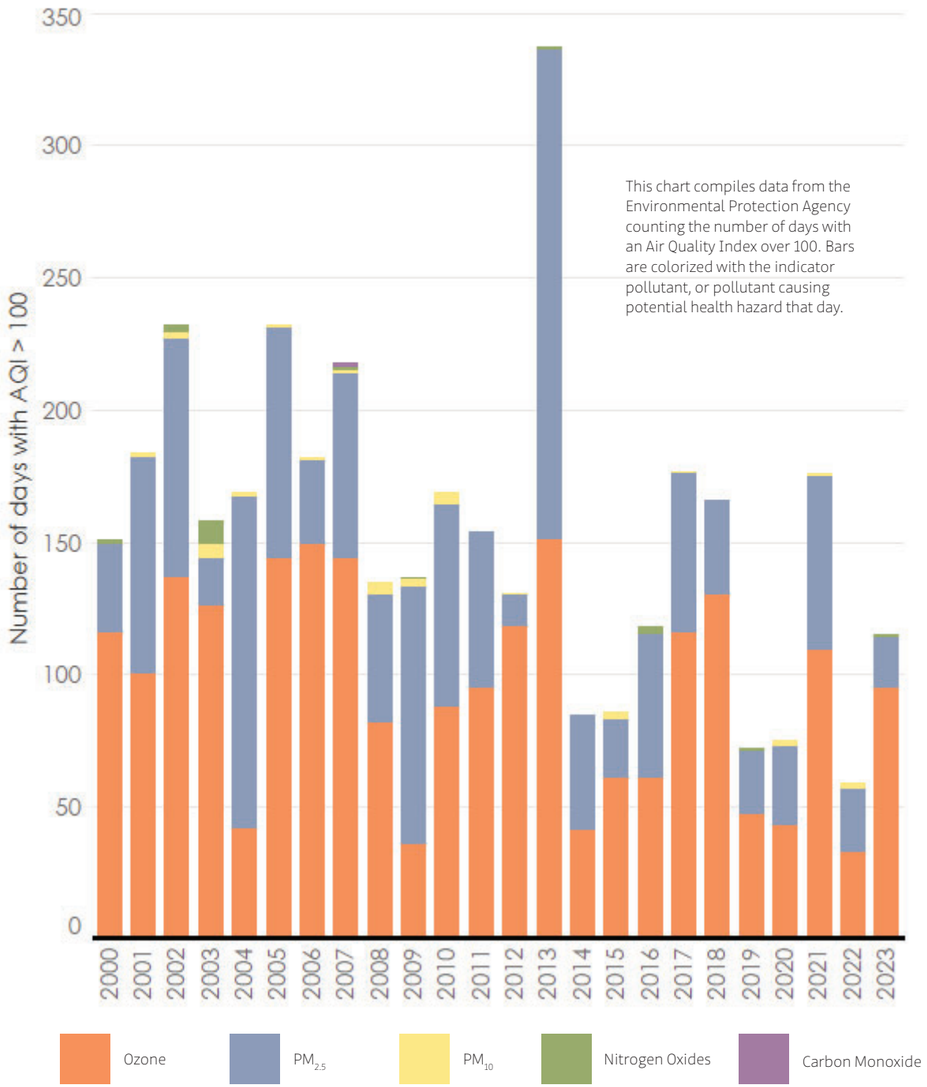
The Environmental Protection Agency measures a variety of atmospheric pollutants, some of which have known impacts on human health. Nitrogen oxides (NO_x) and volatile organic compounds (VOCs) are responsible for forming ozone (O_3) a powerful greenhouse gas. Ozone (O_3) and particulate matter ($PM_{10,2.5}$) or pollution from smoke and other small particles have the most direct impact on human health causing a host of respiratory issues. Carbon monoxide (CO) frequently coming from auto emissions is another greenhouse gas with some human health impact in large quantities.

There are currently 20 air quality monitoring sites in Utah covering 13 counties. Historic measures contributing to regional design values and relevant regulatory values are summarized alongside air quality index reports in the following sections.

AIR QUALITY INDEX (AQI)

The Air Quality Index is a national tool from the Environmental Protection Agency used to communicate outdoor air quality as it relates to human health. Calculated using the average pollutant concentration over 24 hours compared with federal standards, when Air Quality Index values surpass 100, it is generally considered unsafe for sensitive groups. Measuring the number of "bad air days" exceeding an Air Quality Index of 100 is a common strategy for understanding the air quality of an area. Shown here are the number of "bar air days" in each county monitored.

A.2.1 Days of AQI>100 by indicator pollutant



A.2.2 County history of AQI>100 days

Year	Box Eder	Cache	Carbon	Davis	Duchesne	Garfield	Iron	Salt Lake	San Juan	Tooele	Uintah	Utah	Washington
2000	1	12	-	27	-	-	-	52	11	-	-	27	-
2001	24	16	-	22	-	-	-	54	1	2	-	41	-
2002	34	15	-	31	-	-	-	66	7	5	-	39	-
2003	16	10	-	17	-	-	-	39	8	1	-	30	-
2004	7	39	-	9	-	-	-	55	6	0	-	28	12
2005	20	38	-	31	-	-	-	60	4	12	-	22	21
2006	16	9	-	16	-	-	-	54	2	12	-	34	7
2007	19	18	-	19	-	-	-	63	6	12	-	36	4
2008	12	15	-	17	-	-	-	33	4	5	-	23	7
2009	5	28	-	15	-	-	-	37	2	10	2	22	3
2010	11	20	-	10	-	-	-	23	2	10	47	14	8
2011	8	10	1	4	23	-	-	30	3	7	32	9	5
2012	14	7	12	0	9	2	-	17	5	7	16	12	12
2013	22	44	13	11	44	2	-	5	0	15	64	41	2
2014	6	13	0	11	2	0	-	22	0	1	8	12	1
2015	5	4	2	7	3	2	-	27	1	4	2	13	3
2016	4	8	0	14	8	0	-	27	0	7	11	19	0
2017	11	17	0	28	9	2	-	44	0	17	11	14	1
2018	9	7	5	13	11	2	-	41	7	10	11	32	1
2019	2	14	1	6	11	0	-	16	0	2	17	1	0
2020	3	9	12	14	5	0	-	20	2	5	3	5	3
2021	4	10	0	26	8	2	4	47	2	16	8	17	3
2022	0	7	0	10	4	0	0	22	0	6	0	5	0
2023	0	8	0	13	34	0	1	16	0	0	9	0	0

Utah Air Monitoring Program

Made using data from the Utah Air Monitoring Program data archive, these tables report relevant pollutant measures as well as design values from each monitoring site. **Design values (DV)** are used by the Environmental Protection Agency to designate non-attainment areas and track progress towards the National Ambient Air Quality Standards. Calculated using a three-year average of various pollutant measures, these design values are compared with national regulatory values to determine attainment. These averages are used in comparison with Environmental Protection Agency regulatory values reported in table A.3.1. Tables are labeled by name and monitoring site ID.

A.3.1 Pollutant measures, units, and regulatory values

Pollutant	Measure	Timescale	Units	Regulatory Value (RV)
Ozone	Fourth max	8hr	parts per million	**0.07**
$PM_{2.5}$	98^{th} perecentile	24hr Max	micrograms per cubic meter	**35**
PM_{10}	Second max	24hr	micrograms per cubic meter	**150**
CO	First max	8hr	parts per million	**9**
SO_2	98^{th} percentile	1hr Max	parts per billion	**75**
NO_X	98^{th} percentile	1hr Max	parts per billion	**100**

Regulatory values are set standards from the Environmental Protection Agency used to determine attainment. This table provides pollutant regulatory values as a reference for the remaining tables in this section.

A.3.2 Portage (Box Elder) - 49-003-7001

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.063	0.069	0.059	0.066	0.071	0.049	0.057	**0.062**
$PM_{2.5}$	-	-	-	-	-	-	-	**-**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	14	15	11	10	18	8.6	**12.767**

A.3.3 Smithfield - 49-005-0007

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.063	0.069	0.062	0.068	0.068	0.063	0.067	**0.066**
$PM_{2.5}$	39.3	27.9	44	29.4	37.2	28.1	38	**34.843**
PM_{10}	80	67	66	260	135	-	-	**121.6**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	37	30	33.1	30.9	31.3	33.3	37.3	**33.271**

A.3.4 Price - 49-007-1003

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.066	0.073	0.068	0.067	0.071	0.06	0.059	**0.066**
$PM_{2.5}$	-	-	-	-	-	13.2	7.3	**10.25**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO2	-	-	-	-	-	-	-	**-**
NO_X	22	14	16	18	16.9	15.6	16.7	**17.029**

A.3.5 Bountiful Viewmont - 49-011-0004

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.078	0.08	0.073	0.08	0.082	0.075	0.073	**0.077**
$PM_{2.5}$	36	25.7	22.5	34	35.8	25.4	25.7	**29.3**
PM_{10}	48	48	29	42	77	53	60	**51**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	46	45	46	44.1	46.7	49.7	50.7	**46.886**

A.3.6 Roosevelt - 49-013-0002

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.078	0.071	0.087	0.063	0.072	0.066	0.093	**0.076**
$PM_{2.5}$	28.2	23.9	22.3	23.2	26.9	21.4	33.7	**25.657**
PM_{10}	-	-	-	-	21	103	67	**63.667**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	26.3	22.8	27	26.8	26.1	40.3	51	**31.471**

A.3.7 Myton (Duchesne) - 49-013-7011

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.081	0.065	0.079	0.064	0.069	0.066	0.094	**0.074**
$PM_{2.5}$	-	-	-	-	-	-	-	**-**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	28.1	14.4	18.5	18.2	24.4	18.9	31.6	**22.014**

Utah Air Monitoring Program

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A.3.8 Moab - 49-019-0007

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	-	-	-	-	-	-	0.062	**0.062**
$PM_{2.5}$	-	-	-	-	-	-	13.2	**13.2**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	-	-	-	-	-	23.4	**23.4**

A.3.9 Enoch - 49-021-0005

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	-	0.067	0.06	0.061	0.065	0.061	0.061	**0.063**
$PM_{2.5}$	-	13.7	11.3	16.5	20.9	12.4	9.9	**14.117**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	29	46.3	40.2	35.2	38.4	60.8	**41.65**

A.3.10 Copperview - 49-035-2005

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	-	0.079	0.067	0.075	0.086	0.074	0.073	**0.076**
$PM_{2.5}$	-	31.6	28.7	31.2	44.4	28.9	29.1	**32.317**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	1	1	1.4	1.1	1	1	**1.083**
SO_2	-	3	5	2.2	2.7	3	3.1	**3.167**
NO_X	-	46	51.7	50.8	45.3	47.8	48.3	**48.317**

A.3.11 Hawthorne - 49-035-3006

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.081	0.074	0.073	0.075	0.081	0.072	0.072	**0.075**
$PM_{2.5}$	35.7	26.2	26.4	27	36.9	27.4	30.3	**29.986**
PM_{10}	77	103	67	77	93	112	71	**85.714**
CO	1.7	1.6	1.2	1.2	1.1	1.1	0.8	**1.243**
SO_2	3.3	3.7	4.2	3.5	3.8	3.3	3.4	**3.6**
NO_X	51	49	55.4	52.6	46.6	44.9	45.4	**49.271**

A.3.12 Rose Park - 49-035-3010

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	-	0.08	0.071	0.08	0.079	0.075	0.07	**0.076**
$PM_{2.5}$	38.5	29.4	21.7	32	39.5	31.4	29.8	**31.757**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	2.9	1.3	1.4	1.3	1.1	1.2	**1.533**
SO_2	-	5	6.6	4.8	6.5	5.2	4.9	**5.5**
NO_X	-	47	46.8	50.4	48.6	49.8	49.4	**48.667**

A.3.13 Herriman - 49-035-3013

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.078	0.078	0.07	0.073	0.087	0.071	0.068	**0.075**
$PM_{2.5}$	28.2	29	18.8	24.9	36.9	25.8	21.5	**26.443**
PM_{10}	87	88	64	106	91	152	78	**95.143**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	43	39	40.1	30.3	31.9	37.4	35.4	**36.729**

A.3.14 Lake Park - 49-035-3014

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	-	-	-	0.062	0.082	0.072	0.072	**0.072**
$PM_{2.5}$	-	-	-	-	-	29.6	26.5	**28.05**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	-	-	47.3	39	41.6	45.4	**43.325**

Utah Air Monitoring Program

Made using data from the Utah Air Monitoring Program data archive, these tables report relevant pollutant measures as well as design values from each monitoring site. **Design values (DV)** are used by the Environmental Protection Agency to designate non-attainment areas and track progress towards the National Ambient Air Quality Standards. Calculated using a three year average of various pollutant measures, these design values are compared with national regulatory values to determine attainment. These averages are used in comparison with Environmental Protection Agency regulatory values reported in table A.3.1. Tables are labeled by name and monitoring site ID.

A.3.15 Utah Technical Center - 49-035-3015

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	-	-	0.036	0.07	0.082	0.076	0.062	**0.065**
$PM_{2.5}$	-	-	18.8	30	41	34.4	29.8	**30.8**
PM_{10}	-	-	62	112	103	146	73	**99.2**
CO	-	-	1.5	1.3	1.5	1.3	1.6	**1.44**
SO_2	-	-	4.3	3.5	4.7	4.1	5.4	**4.4**
NO_X	-	-	47.5	48.3	51.4	53.4	52.1	**50.54**

A.3.16 Inland Port (Salt Lake City) - 49-035-3016

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	-	-	-	-	0.084	0.075	0.073	**0.077**
$PM_{2.5}$	-	-	-	-	42.6	29.9	24.8	**32.433**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	-	-	-	40.5	42.9	40.9	**41.433**

A.3.17 Near Road (Murray) - 49-035-4002

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	-	-	0.064	0.072	0.083	0.072	0.076	**0.073**
$PM_{2.5}$	-	-	31	32.5	42.4	32	30.7	**33.72**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	1.3	0.9	1.2	1.2	1.2	**1.16**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	-	53.1	48	47.1	52.7	56.7	**51.52**

A.3.18 Canyonlands National Park - 49-037-0101

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.064	0.068	0.064	0.066	0.069	0.063	0.063	**0.065**
$PM_{2.5}$	-	-	-	-	-	-	-	**-**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	-	-	-	-	-	-	**-**

A.3.19 Erda - 49-045-0004

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.077	0.074	0.065	0.07	0.075	0.07	0.068	**0.071**
$PM_{2.5}$	28.8	30.6	22.7	25.5	35.5	28.2	21.1	**27.486**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	24	25	24.4	20.5	18.1	21.7	19.3	**21.857**

A.3.20 Dinosaur National Monument - 49-047-1002

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.074	0.067	0.07	0.063	0.068	0.063	0.098	**0.072**
$PM_{2.5}$	-	-	-	-	-	-	-	**-**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	-	-	-	-	-	-	**-**

A.3.21 Vernal - 49-047-1004

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.068	0.069	0.065	0.063	0.068	0.063	0.078	**0.068**
$PM_{2.5}$	20.6	19.1	16.1	22.3	7.3	16.5	25.1	**18.143**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	32	21	27.7	34.1	26.2	29.8	37.6	**29.771**

Utah Air Monitoring Program

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A.3.22 Redwash (Uintah) - 49-047-2002

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.076	0.068	0.074	0.066	0.071	0.062	0.081	**0.071**
$PM_{2.5}$	-	-	-	-	-	-	-	**-**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO2	-	-	-	-	-	-	-	**-**
NO_X	13.6	13.3	17.3	13.3	13.5	13.6	23.3	**15.414**

A.3.23 Ouray (Uintah) - 49-047-2003

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.103	0.067	0.098	0.065	0.072	0.064	0.091	**0.08**
$PM_{2.5}$	-	-	-	-	-	-	-	**-**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	15.6	11.6	16	14.4	10.3	12.9	20.8	**14.514**

A.3.24 Whiterocks (Uintah) - 49-047-7022

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.066	0.069	0.067	0.065	0.068	0.062	0.088	**0.069**
$PM_{2.5}$	-	-	-	-	-	-	-	**-**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	13.8	20.5	8.3	7.6	7.3	5.8	11.4	**10.671**

A.3.25 Lindon - 49-049-4001

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	-	0.079	0.062	0.068	0.077	0.074	0.066	**0.071**
$PM_{2.5}$	27.6	21.6	17.2	26.2	35.9	23.1	20.2	**24.543**
PM_{10}	82	85	53	90	100	82	61	**79**
CO	-	0.5	1.1	0.9	1.3	0.8	1	**0.933**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	41	40.8	43.1	42.2	40.7	38.6	**41.067**

A.3.26 Spanish Fork - 49-049-5010

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.072	0.073	0.066	0.07	0.076	0.066	0.065	**0.07**
$PM_{2.5}$	27.6	50.7	16.1	25.4	27.8	24.9	20.6	**27.586**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	39	41.9	38.5	34.6	38.2	37	**38.2**

A.3.27 Hurricane - 49-053-0007

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.067	0.069	0.064	0.065	0.067	0.064	0.063	**0.066**
$PM_{2.5}$	13.5	17.9	10.9	16.6	18.5	13.1	9.4	**14.271**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	26	27	25.8	30	24.9	29.8	28.5	**27.429**

A.3.28 Zion National Park - 49-053-0130

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.067	0.069	0.063	0.067	0.067	0.064	0.064	**0.066**
$PM_{2.5}$	-	-	-	-	-	-	-	**-**
PM_{10}	-	-	-	-	-	-	-	**-**
CO	-	-	-	-	-	-	-	**-**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	-	-	-	-	-	-	**-**

Utah Air Monitoring Program

Made using data from the Utah Air Monitoring Program data archive, these tables report relevant pollutant measures as well as design values from each monitoring site. **Design values (DV)** are used by the Environmental Protection Agency to designate non-attainment areas and track progress towards the National Ambient Air Quality Standards. Calculated using a three year average of various pollutant measures, these design values are compared with national regulatory values to determine attainment. These averages are used in comparison with Environmental Protection Agency regulatory values reported in table A.3.1. Tables are labeled by name and monitoring site ID.

A.3.29 Harrisville - 49-057-1003

Pollutant	2017	2018	2019	2020	2021	2022	2023	DV
Ozone	0.073	0.077	0.063	0.074	0.077	0.071	0.07	**0.072**
$PM_{2.5}$	-	-	26.8	25.6	32.4	27.1	19.6	**26.3**
PM_{10}	-	-	44	77	86	126	69	**80.4**
CO	-	-	0.5	0.6	1	0.8	0.8	**0.74**
SO_2	-	-	-	-	-	-	-	**-**
NO_X	-	37	44.4	47	41.7	41.2	44.1	**42.567**

BEAR RIVER MOUNTAIN RANGE FROM NAOMI PEAK | KORI KURTZEBORN

VIEW FROM KINGS PEAK, HIGH UINTAS WILDERNESS | KORI KURTZEBORN

APPROACHING PHEIFFERHORN PEAK AT SUNRISE | KORI KURTZEBORN

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