

Disproportionate magnitude of climate change in United States national parks

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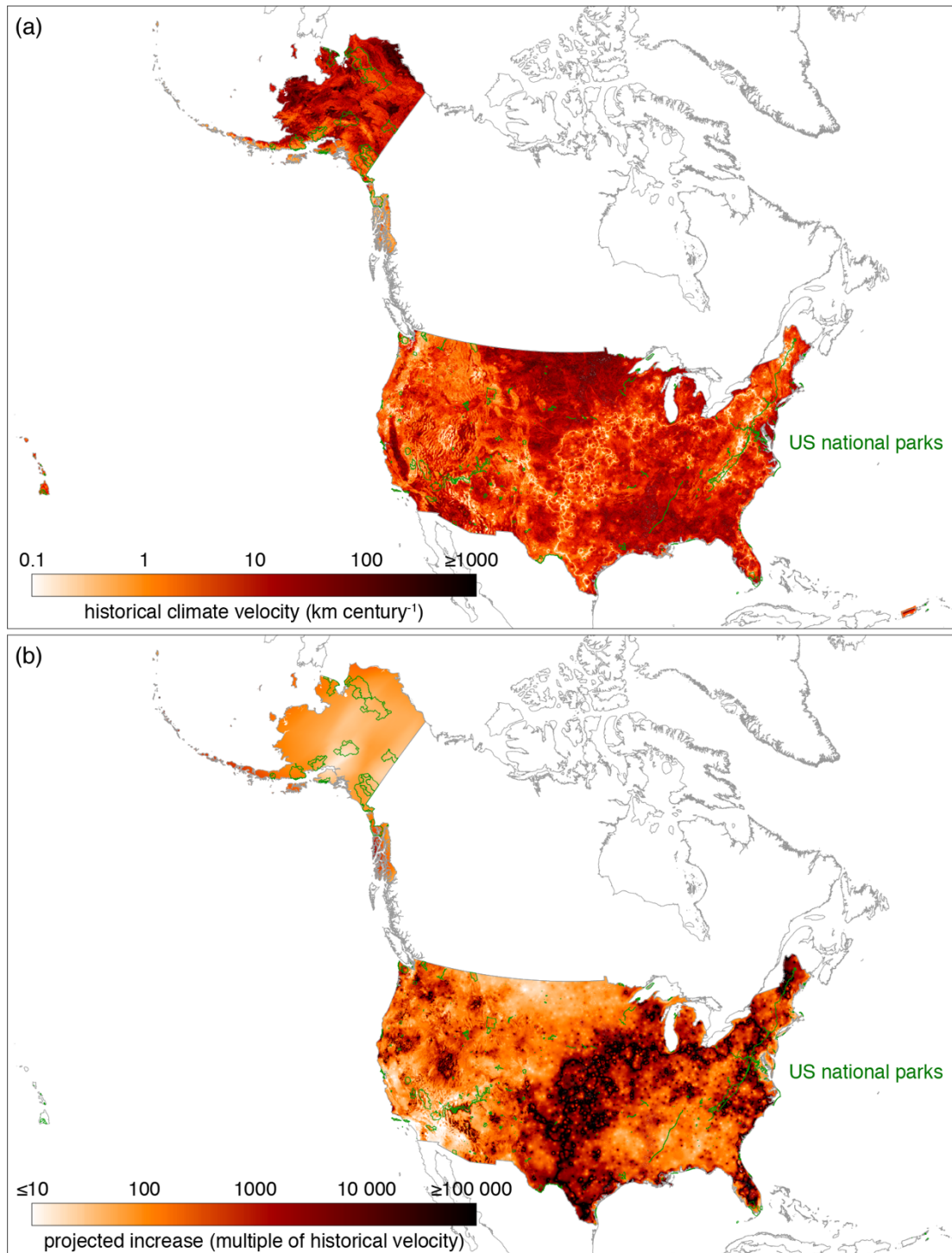


Figure S3. Fractional agreement of precipitation projections. Fraction (%) of general circulation models that project the same direction of annual precipitation change between 1971-2000 and 2071-2100 for the highest emissions scenario (RCP8.5).

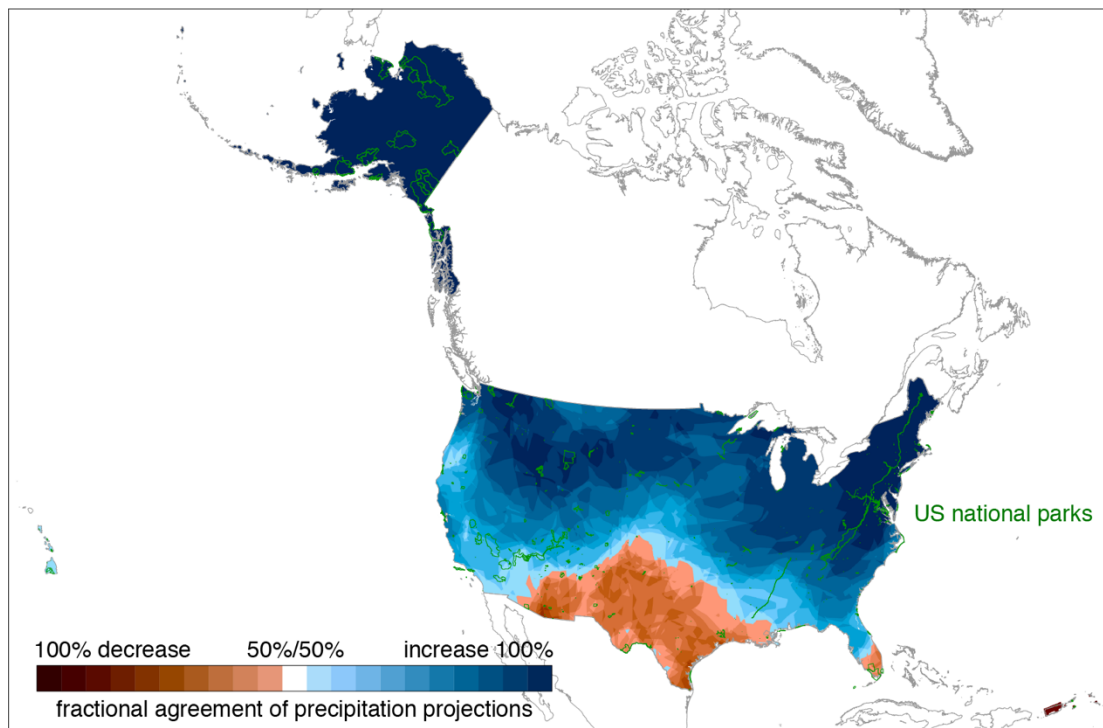


Figure S4. Projected future scenarios, 1971-2000 to 2071-2100, Yosemite National Park. Projected changes in mean annual temperature ($^{\circ}\text{C century}^{-1}$) and annual precipitation ($\% \text{ century}^{-1}$) for the emissions scenarios of the IPCC (2013), relative to the historical (1971-2000) average, for the area of Yosemite National Park as a whole, shown for individual GCMs (small dots), ensemble means (large dots), and standard deviations (bars).

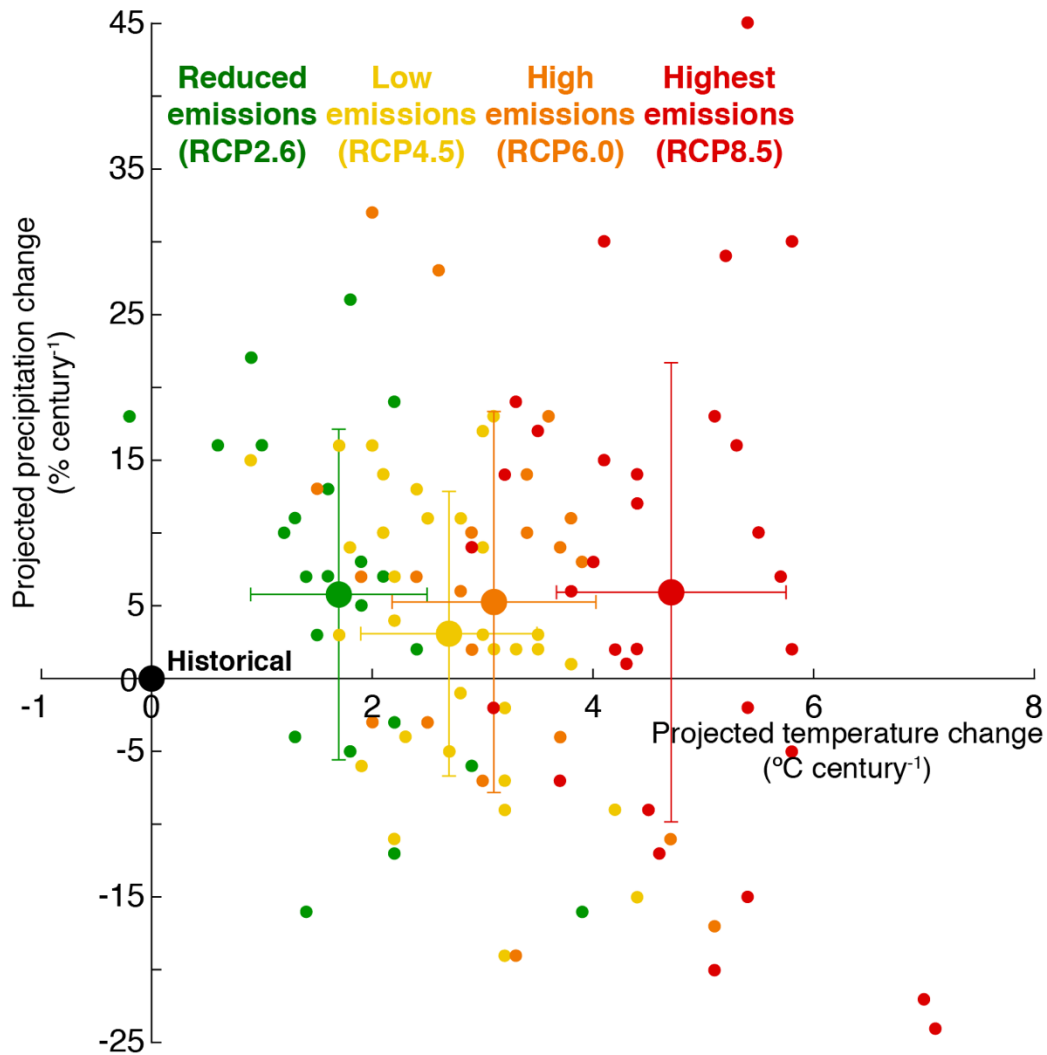


Table S1. Historical spatial climate data sources.

Geographic domain	Climatology	Time series	Spatial resolution	Time period	Applications
Contiguous 48 states	PRISM LT7.1	PRISM LT7.1	30" (800 m)	1895-2010	Linear regression of 340 national parks, climatology 1971-2000
Contiguous 48 states	PRISM LT8.1	PRISM LT8.1	30" (800 m)	1895-2016	Linear regression of US, national park area, and 29 national parks, 1901-2016 comparison, climate velocity
Alaska	PRISM SNAP	CRU3.10	771 m	1901-2009	Linear regression of US, national park area, and 23 national parks, 1901-2009 comparison, climate velocity, climatology 1971-2000
Hawaii	PRISM	CRU3.10	15" (500 m)	1901-2009	Linear regression of US, national park area, and 8 national parks, 1901-2009 comparison, climate velocity, climatology 1971-2000
Guam	PRISM	CRU3.10	3" (100 m)	1901-2009	Linear regression of US and 1 national park, 1901-2009 comparison, climate velocity, climatology 1971-2000
American Samoa	PRISM	CRU3.10	3" (100 m)	1901-2009	Linear regression of US and 1 national park, 1901-2009 comparison, climate velocity, climatology 1971-2000, only covered Tutuila, the main island
Puerto Rico, Virgin Islands	CRU3.10	CRU3.10	0.5° (50 km, re-sized to 18.5 km)	1901-2009	Linear regression of US, national park area, and 6 national parks, 1901-2009 comparison, climate velocity, climatology 1971-2000

CRU = University of East Anglia Climatic Research Unit (Harris et al. 2014)

PRISM = Parameter-elevation Relationships on Independent Slopes Model (Daly et al. 2008)

SNAP = Scenarios Network for Alaska and Arctic Planning, University of Alaska, Fairbanks (<https://www.snap.uaf.edu>)

Table S2. General circulation models (GCMs) from the Coupled Model Intercomparison Project Phase 5 (CMIP5). The research here used all output available in October 2012. The Lawrence Livermore National Laboratory currently hosts the data (<https://esgf-node.llnl.gov/search/cmip5>). RCP = Representative Concentration Pathway (Moss et al. 2010).

Modeling center (or group)	Institute	GCM	Spatial resolution (longitude x latitude)	RCP2.6	RCP4.5	RCP6.0	RCP8.5
Commonwealth Scientific and Industrial Research Organization (CSIRO) and Bureau of Meteorology (BOM), Australia	CSIRO-BOM	ACCESS1.0	1.875°×1.25°		X		X
		ACCESS1.3	1.875°×1.25°		X		X
Beijing Climate Center, China Meteorological Administration	BCC	BCC-CSM1.1	2.8125°×2.8125°	X	X	X	X
		BCC-CSM1.1(m)	1.125°×1.125°	X	X	X	X
Canadian Centre for Climate Modelling and Analysis	CCCMA	CanESM2	2.8125°×2.8125°	X	X		X
National Center for Atmospheric Research	NCAR	CCSM4	1.25°×0.9°	X	X	X	X
Community Earth System Model Contributors	NSF-DOE-NCAR	CESM1(BGC)	1.25°×0.9°		X		X
		CESM1(CAM5)	1.25°×0.9°	X	X	X	X
Centro Euro-Mediterraneo per I Cambiamenti Climatici	CMCC	CMCC-CM	0.75°×0.75°		X		X
		CMCC-CMS	1.875°×1.875°		X		X
Centre National de Recherches Météorologiques/ Centre Européen de Recherche et Formation Avancée en Calcul Scientifique	CNRM-CERFACS	CNRM-CM5	1.4°×1.4°	X	X		X
Commonwealth Scientific and Industrial Research Organization in collaboration with Queensland Climate Change Centre of Excellence	CSIRO-QCCCE	CSIRO-Mk3.6.0	1.875°×1.875°	X	X	X	X
The First Institute of Oceanography, China	FIO	FIO-ESM	2.8125°×2.8125°	X	X	X	X
National Oceanic and Atmospheric Administration, Geophysical Fluid Dynamics Laboratory	NOAA GFDL	GFDL-CM3	2.5°×2°	X	X	X	X
		GFDL-ESM2G	2.5°×2°	X	X	X	X
		GFDL-ESM2M	2.5°×2°	X	X	X	X
National Aeronautics and Space Administration, Goddard Institute for Space Studies	NASA GISS	GISS-E2-H	2.5°×2°	X	X	X	X
		GISS-E2-R	2.5°×2°	X	X	X	X
National Institute of Meteorological Research/Korea Meteorological Administration	NIMR/KMA	HadGEM2-AO	1.875°×1.25°	X	X	X	X
Met Office Hadley Centre	MOHC	HadGEM2-CC	1.875°×1.25°		X		X

Modeling center (or group)	Institute	GCM	Spatial resolution (longitude x latitude)	RCP2.6	RCP4.5	RCP6.0	RCP8.5
Met Office Hadley Centre (additional realizations Instituto Nacional de Pesquisas Espaciais)	MOHC/INPE	HadGEM2-ES	1.875°×1.25°	X	X	X	X
Institute for Numerical Mathematics	INM	INM-CM4	2°×1.5°		X		X
Institut Pierre-Simon Laplace	IPSL	IPSL-CM5A-LR	3.75°×1.895°	X	X	X	X
		IPSL-CM5A-MR	2.5°×1.268°	X	X	X	X
		IPSL-CM5B-LR	3.75°×1.895°		X		X
Japan Agency for Marine-Earth Science and Technology; Atmosphere and Ocean Research Institute, University of Tokyo; and National Institute for Environmental Studies	MIROC	MIROC-ESM	2.8125°×2.8125°	X	X	X	X
		MIROC-ESM- CHEM	2.8125°×2.8125°	X	X	X	X
Atmosphere and Ocean Research Institute, University of Tokyo; National Institute for Environmental Studies; and Japan Agency for Marine-Earth Science and Technology	MIROC	MIROC5	1.4°×1.4°	X	X	X	X
Max-Planck-Institut für Meteorologie (Max Planck Institute for Meteorology)	MPI-M	MPI-ESM-LR	1.875°×1.875°	X	X		X
		MPI-ESM-MR	1.875°×1.875°	X	X		X
Meteorological Research Institute	MRI	MRI-CGCM3	1.125°×1.125°	X	X		X
Norwegian Climate Centre	NCC	NorESM1-M	2.5°×1.895°	X	X	X	X
		NorESM1-ME	2.5°×1.895°	X	X	X	X
Totals				25	33	20	33

Table S3. Historical mean annual temperature changes. Trends and standard errors (SE) from linear regression, corrected for temporal autocorrelation. For the contiguous states, the historical period is 1895-2010. Outside the contiguous states, the historical period is 1901-2009, the period of available spatial data. The 1901-2016 difference is the difference between 1901-60 and 1986-2016. Significance: * $P \leq 0.05$, ** $P \leq 0.01$, *** $P \leq 0.001$.

	Area km ²	1895-2010		1901-2016	1895-2010		Velocity km century ⁻¹	Velocity >200 km century ⁻¹ % of area	
		Mean °C	Trend mean ± SE °C century ⁻¹	Difference °C	Significant change % of area	Significant increase			
United States									
Contiguous 48 states	7.8 x 10 ⁶	11.4	0.3 ± 0.2	0.3	43	65	33	430	1
Alaska	1.5 x 10 ⁶	-3.5	1.2 ± 0.3 ***	1.0	83	100	83	47	4
Hawaii	1.7 x 10 ⁴	19.5	1.6 ± 0.1 ***	1.1	100	100	100	7	0.2
Puerto Rico, Virgin Is.	9.3 x 10 ³	24.2	1.3 ± 0.1 ***	0.9	100	100	100	9	<0.1
Guam	560	27.1	0.2 ± 0.05 ***	0.2	87	100	87	2	<0.1
American Samoa	160	26.4	1.4 ± 0.1 ***	1.1	100	100	100	49	2
Total	9.3 x 10 ⁶	9.0	0.4 ± 0.1 **	0.4	50	71	42	370	1
National Park System									
Contiguous 48 states	1.3 x 10 ⁵	11.8	0.6 ± 0.1 ***	0.7	48	89	45	660	0.2
Alaska	2.2 x 10 ⁵	-4.1	1.2 ± 0.3 ***	1.0	74	100	74	17	0.1
Hawaii	1.8 x 10 ³	16.2	1.3 ± 0.1 ***	0.9	100	100	100	4	<0.1
Puerto Rico, Virgin Is.	39	25.5	1.4 ± 0.1 ***	1.0	100	100	100	1	0
Guam	5	27.3	0.2 ± 0.05 ***	0.2	100	100	100	1	0
American Samoa	13	26.1	1.4 ± 0.1 ***	1.1	100	100	100	5	1
Total	3.6 x 10 ⁵	1.9	1.0 ± 0.2 ***	0.9	64	96	63	260	1

Table S4. Historical seasonal changes in temperature and precipitation. Trends and standard errors (SE) from linear regression, corrected for temporal autocorrelation. For the contiguous states, the historical period is 1895-2010. Outside the contiguous states, the historical period is 1901-2009, the period of available spatial data. Significance: * $P \leq 0.05$, ** $P \leq 0.01$, *** $P \leq 0.001$.

	Area km ²	Temperature				Precipitation			
		Winter Dec.-Feb. °C century ⁻¹	Spring March-May	Summer June-August	Autumn Sept.-Oct.	Winter Dec.-Feb. % century ⁻¹	Spring March-May	Summer June-August	Autumn Sept.-Oct.
United States									
Contiguous 48 states	7.8 x 10 ⁶	0.4 ± 0.3	0.3 ± 0.2	0.3 ± 0.1	0 ± 0.2	3.5 ± 3.5	6.4 ± 3.4	3.2 ± 2.6	16.5 ± 4.3 ***
Alaska	1.5 x 10 ⁶	1.7 ± 0.7	1.4 ± 0.5 **	1.1 ± 0.2 ***	0.5 ± 0.4	-8.1 ± 4.6	-12.4 ± 4.4 *	-1.8 ± 4	-9.2 ± 4.8
Hawaii	1.7 x 10 ⁴	1.3 ± 0.1 ***	1.6 ± 0.1 ***	1.8 ± 0.1 ***	1.7 ± 0.1 ***	-7.6 ± 11.8	-17.9 ± 10	-19 ± 8.6	-11.5 ± 8.5
Puerto Rico, Virgin Is.	9.3 x 10 ³	0.9 ± 0.1 ***	1.5 ± 0.1 ***	1.7 ± 0.1 ***	1.2 ± 0.1 ***	-5.7 ± 8.7	-6.4 ± 9.3	-12.7 ± 7	-4.5 ± 7
Guam	560	0.3 ± 0.1 **	0.2 ± 0.1 **	0.2 ± 0.1 ***	0.2 ± 0.1 ***	21.6 ± 10.9	7.4 ± 15.5	-4.7 ± 8	-8.6 ± 5.6
American Samoa	160	1.6 ± 0.2 ***	1.5 ± 0.1 ***	1.2 ± 0.1 ***	1.2 ± 0.1 ***	-6 ± 7.9	-1.3 ± 8	16 ± 11.3	19 ± 9.3
Total	9.3 x 10 ⁶	0.6 ± 0.3 *	0.5 ± 0.2 *	0.4 ± 0.1 **	0 ± 0.2	1 ± 2.9	3.7 ± 3.3	2 ± 2.4	11 ± 3.6 **
National Park System									
Contiguous 48 states	1.3 x 10 ⁵	0.6 ± 0.2 *	0.6 ± 0.2 **	0.7 ± 0.1 ***	0.4 ± 0.2 *	5.5 ± 4.4	6.5 ± 3.4	1.5 ± 2.5	12 ± 4.1 **
Alaska	2.2 x 10 ⁵	1.8 ± 0.7 *	1.4 ± 0.5 **	1.1 ± 0.2 ***	0.4 ± 0.4	-9.4 ± 5.8	-10.7 ± 5.4	0.3 ± 4.5	-8 ± 5.5
Hawaii	1.8 x 10 ³	1.1 ± 0.1 ***	1.3 ± 0.1 ***	1.5 ± 0.1 ***	1.4 ± 0.1 ***	-1.2 ± 13.2	-9.9 ± 10.4	-14.4 ± 9.3	-5.6 ± 9.8
Puerto Rico, Virgin Is.	39	1.0 ± 0.1 ***	1.6 ± 0.1 ***	1.7 ± 0.1 ***	1.2 ± 0.1 ***	-4.2 ± 8.6	-0.7 ± 10	-13.4 ± 8.4	-8.7 ± 7.6
Guam	5	0.3 ± 0.1 **	0.2 ± 0.1 **	0.2 ± 0.1 ***	0.2 ± 0.1 ***	21.5 ± 10.9	7.5 ± 15.6	-4.7 ± 8	-8.6 ± 5.6
American Samoa	14	1.6 ± 0.2 ***	1.5 ± 0.1 ***	1.2 ± 0.1 ***	1.2 ± 0.1 ***	-5.9 ± 7.9	-1.4 ± 8	16.7 ± 11.4	18.9 ± 9.3
Total	3.6 x 10 ⁵	0.8 ± 0.2 ***	0.8 ± 0.2 ***	0.8 ± 0.1 ***	0.4 ± 0.2	2.5 ± 3.6	3.3 ± 3	0.6 ± 2.3	6.7 ± 2.7

Table S5. Historical and projected climate changes for each of the 417 US national parks. Trends for the area of each park as a whole. The US National Park Service manages some adjacent parks as single units, *e.g.* Denali National Park and Preserve. Historical trends and standard errors (SE) from linear regression, corrected for temporal autocorrelation. Historical period for areas outside the contiguous states is 1950-2009, the period of available spatial data. Projected changes and standard deviations (SD) are for the difference between the periods 1971-2000 and 2071-2100, from ensembles of all general circulation model output available for IPCC (2013), for the emissions reductions scenario (RCP2.6) and the highest emissions scenario (RCP8.5).

Significance: * $P \leq 0.05$, ** $P \leq 0.01$, *** $P \leq 0.001$.

National park	State	1950-2010				2000-2100							
		Temperature Trend \pm SE $^{\circ}\text{C century}^{-1}$		Precipitation Trend \pm SE % century $^{-1}$		RCP2.6 Temperature Increase \pm SD $^{\circ}\text{C century}^{-1}$		RCP8.5 Temperature Increase \pm SD $^{\circ}\text{C century}^{-1}$		RCP2.6 Precipitation Change \pm SD % century $^{-1}$		RCP8.5 Precipitation Change \pm SD % century $^{-1}$	
Abraham Lincoln Birthplace National Historical Park	KY	0.6	0.6	7	12	1.6	0.7	4.9	1.0	6	6	11	9
Acadia National Park	ME	0.1	0.5	21	11	1.8	0.9	5.1	1.2	6	6	14	7
Adams National Historical Park	MA	0.9	0.5	26	11 *	1.7	0.8	4.9	1.1	6	6	15	7
African Burial Ground National Monument	NY	1.6	0.5 **	21	14	1.7	0.7	4.9	0.9	7	6	14	8
Agate Fossil Beds National Monument	NE	0.6	0.5	4	13	1.7	0.8	5.1	1.2	6	7	9	9
Alagnak Wild River	AK	3.5	1.2 **	12	12	2.4	1.0	6.2	1.5	9	4	23	6
Alibates Flint Quarries National Monument	TX	-0.5	0.5	19	15	1.6	0.7	5.1	1.1	4	8	-3	10
Allegheny Portage Railroad National Historic Site	PA	0.3	0.6	4	10	1.8	0.7	5.2	1.0	6	4	12	6
Amistad National Recreation Area	TX	0.3	0.6	44	23	1.5	0.7	4.7	1.0	4	8	-2	13
Andersonville National Historic Site	GA	-0.9	0.5	4	12	1.4	0.5	4.3	0.9	6	6	8	10
Andrew Johnson National Historic Site	TN	-0.8	0.6	2	11	1.5	0.6	4.6	0.9	5	5	10	8
Aniakchak National Monument	AK	2.4	1.0 *	18	9 *	2.2	0.9	5.4	1.4	8	4	20	5
Aniakchak National Preserve	AK	2.3	1.1 *	13	9	2.1	0.9	5.3	1.3	9	4	21	6
Antietam National Battlefield	MD	0.1	0.5	16	13	1.7	0.7	5.0	1.0	7	5	14	7
Apostle Islands National Lakeshore	WI	0.9	0.7	1	10	2.0	0.9	6.0	1.4	6	4	11	7

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Appalachian National Scenic Trail	14 states	0.4	0.4	16	8	1.7	0.7	5.1	1.0	7	5	14	8
Appomattox Court House National Historical Park	VA	0.1	0.6	20	13	1.6	0.6	4.8	0.9	8	6	14	9
Arches National Park	UT	1.2	0.5 *	32	18	1.9	0.9	5.5	1.2	6	9	7	12
Arkansas Post National Memorial	AR	0.3	0.5	7	14	1.5	0.7	4.7	1.0	3	7	4	11
Arlington House, the Robert E. Lee Memorial	VA	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Assateague Island National Seashore	MD, VA	1.1	0.5 *	15	11	1.5	0.6	4.2	0.8	6	5	10	7
Aztec Ruins National Monument	NM	1.2	0.7	25	19	1.7	0.8	5.2	1.1	5	8	3	13
Badlands National Park	SD	0.7	0.8	32	17	1.8	0.8	5.2	1.3	6	7	10	9
Bandelier National Monument	NM	0.3	0.7	30	15	1.6	0.8	5.1	1.0	4	8	-2	11
Belmont-Paul Women's Equality National Monument	DC	0.7	0.4	13	12	1.7	0.7	4.9	1.0	7	6	14	8
Bent's Old Fort National Historic Site	CO	-0.2	0.5	41	16 *	1.6	0.7	5.0	1.1	5	8	-1	11
Bering Land Bridge National Preserve	AK	2.7	1.1 *	35	18	3.0	1.5	8.3	2.2	11	9	37	15
Big Bend National Park	TX	-0.4	0.6	43	24	1.4	0.7	4.8	1.0	4	8	-2	14
Big Cypress National Preserve	FL	0.8	0.4 *	9	13	1.1	0.4	3.3	0.6	4	5	-2	9
Big Hole National Battlefield	MT	1.2	0.5 *	18	11	1.8	0.8	5.2	1.2	6	4	9	6
Big South Fork National River and Recreation Area	KY, TN	-0.2	0.5	4	11	1.5	0.6	4.7	1.0	5	6	10	9
Big Thicket National Preserve	TX	0.4	0.6	29	12 *	1.4	0.6	4.2	0.8	1	5	-3	11
Bighorn Canyon National Recreation Area	MT, WY	0.8	0.6	2	15	1.8	0.8	5.2	1.4	8	6	15	9
Birmingham Civil Rights National Monument	AL	0.4	0.5	5	12	1.4	0.6	4.5	0.9	5	7	7	11
Biscayne National Park	FL	1.6	0.5 **	13	17	0.9	0.4	3.0	0.7	4	6	-4	10
Black Canyon of the Gunnison National Park	CO	0.3	0.5	42	17 *	1.7	0.9	5.3	1.1	6	7	6	11

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend \pm SE	$^{\circ}\text{C century}^{-1}$	Trend \pm SE	$\% \text{ century}^{-1}$	Temperature Increase \pm SD	$^{\circ}\text{C century}^{-1}$	Temperature Increase \pm SD	$^{\circ}\text{C century}^{-1}$	Precipitation Change \pm SD	$\% \text{ century}^{-1}$	Precipitation Change \pm SD	$\% \text{ century}^{-1}$
National park													
Blackstone River Valley National Historical Park	MA, RI	0.9	0.4	24	11	1.7	0.8	4.9	1.0	6	6	15	8
Blue Ridge Parkway	NC, VA	0.2	0.5	8	10	1.5	0.6	4.7	0.9	7	5	12	8
Bluestone National Scenic River	WV	0.6	0.5	12	11	1.6	0.7	4.8	1.0	6	5	11	7
Booker T. Washington National Monument	VA	-0.1	0.5	15	11	1.6	0.6	4.7	0.9	7	6	13	8
Boston African American National Historic Site	MA	0.6	0.4	18	12	1.8	0.8	5.0	1.1	6	6	15	7
Boston Harbor Islands National Recreation Area	MA	1.0	0.4 *	20	11	1.7	0.8	4.9	1.1	6	6	15	7
Boston National Historical Park	MA	0.7	0.4	16	12	1.8	0.8	5.0	1.1	6	6	15	7
Brices Cross Roads National Battlefield Site	MS	-0.4	0.6	19	14	1.5	0.6	4.7	1.0	5	7	6	11
Brown v. Board of Education National Historic Site	KS	0.4	0.8	24	14	1.7	0.8	5.2	1.2	4	5	6	8
Bryce Canyon National Park	UT	1.7	0.5 **	27	18	1.8	0.9	5.3	1.2	6	7	6	12
Buck Island Reef National Monument	VI	1.5	0.6 *	-1	14	1	0.4	2.9	0.6	-1	12	-28	20
Buffalo National River	AR	-0.5	0.6	16	13	1.6	0.7	5.0	1.1	3	5	5	9
Cabrillo National Monument	CA	1.8	1.0	31	31	1.4	0.6	3.8	0.9	4	12	0	19
Canaveral National Seashore	FL	0.3	0.4	1	11	1.1	0.5	3.6	0.8	6	6	3	11
Cane River Creole National Historical Park	LA	0	0.6	19	12	1.5	0.6	4.5	0.9	2	6	-1	11
Canyon de Chelly National Monument	AZ	1.2	0.6 *	15	17	1.7	0.8	5.2	1.1	5	8	2	13
Canyonlands National Park	UT	1.2	0.5 *	28	17	1.8	0.9	5.4	1.2	6	8	7	12
Cape Cod National Seashore	MA	0.3	0.5	25	10 *	1.6	0.8	4.6	1.0	6	6	13	7
Cape Hatteras National Seashore	NC	0.9	0.6	11	7	1.2	0.5	3.7	0.7	5	4	6	9
Cape Krusenstern National Monument	AK	2.8	1.1 *	41	18 *	3.1	1.6	8.6	2.2	12	10	39	16
Cape Lookout National Seashore	NC	0.4	0.6	12	8	1.2	0.5	3.7	0.7	5	5	7	9
Capitol Reef National Park	UT	1.8	0.5 **	32	18	1.8	0.9	5.4	1.2	6	8	7	11

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Capulin Volcano National Monument	NM	0.7	0.4	26	13	1.6	0.7	5.0	1.0	5	8	-3	11
Carl Sandburg Home National Historic Site	NC	0.7	0.5	-3	13	1.5	0.6	4.5	0.9	7	6	11	9
Carlsbad Caverns National Park	NM	-0.4	0.8	51	24 *	1.6	0.7	5.0	1.0	3	9	-3	15
Carter G. Woodson Home National Historic Site	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Casa Grande Ruins National Monument	AZ	2.1	0.6 **	5	28	1.6	0.7	4.9	1.0	2	8	-3	14
Castillo de San Marcos National Monument	FL	0.5	0.4	-8	11	1.2	0.5	3.7	0.8	6	6	4	10
Castle Clinton National Monument	NY	1.7	0.5 **	22	14	1.7	0.7	4.9	0.9	7	6	14	8
Castle Mountains National Monument	CA	1.4	0.4 **	41	30	1.6	0.7	4.8	0.9	8	11	5	18
Catoctin Mountain Park	MD	0.9	0.6	16	14	1.7	0.7	5.1	1.0	7	5	14	7
Cedar Breaks National Monument	UT	2.0	0.8 *	29	19	1.8	0.8	5.2	1.2	7	7	7	12
Cedar Creek and Belle Grove National Historical Park	VA	-0.1	0.4	18	12	1.7	0.7	5.0	1.0	7	5	14	7
César E. Chávez National Monument	CA	0.9	0.3 *	23	28	1.5	0.6	4.4	0.8	5	14	4	19
Chaco Culture National Historical Park	NM	1.0	0.5	37	18 *	1.7	0.8	5.2	1.0	5	8	0	12
Chamizal National Memorial	TX	1.6	0.7 *	53	25 *	1.6	0.7	5.0	1.0	3	10	-3	14
Channel Islands National Park	CA	1.4	0.6 *	38	28	1.3	0.5	3.5	0.8	7	13	6	20
Charles Pinckney National Historic Site	SC	0.8	0.6	2	11	1.2	0.5	3.8	0.7	7	6	9	9
Charles Young Buffalo Soldiers National Monument	OH	0.2	0.5	20	10	1.7	0.7	5.2	1.1	6	5	13	9
Chattahoochee River National Recreation Area	GA	0.3	0.8	6	13	1.4	0.6	4.5	0.9	6	6	9	9
Chesapeake and Ohio Canal National Historical Park	DC, MD, WV	0.4	0.4	14	12	1.7	0.7	5.0	1.0	7	5	14	7
Chickamauga and Chattanooga National Military Park	GA	0	0.6	-11	13	1.5	0.6	4.6	0.9	5	6	9	10
Chickasaw National Recreation Area	OK	-1.4	0.5 *	30	15	1.6	0.7	4.9	1.0	2	5	-1	8

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Chiricahua National Monument	AZ	1.0	0.6	27	21	1.6	0.7	5.0	1.0	2	8	-5	13
Christiansted National Historic Site	VI	1.5	0.6 *	-1	14	1.0	0.4	2.9	0.6	-1	12	-28	20
City of Rocks National Reserve	ID	0.7	0.6	23	21	2.0	1.0	5.5	1.3	9	7	14	10
Clara Barton National Historic Site	MD	0.8	0.5	14	12	1.7	0.7	4.9	1.0	7	6	14	8
Colonial National Historical Park	VA	1.2	0.6 *	19	11	1.5	0.6	4.5	0.8	6	5	11	9
Colorado National Monument	CO	1.6	0.7 *	26	18	1.8	0.9	5.4	1.2	6	8	7	11
Congaree National Park	SC	-0.1	0.5	0	12	1.4	0.5	4.3	0.8	8	6	11	9
Constitution Gardens	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Coronado National Memorial	AZ	0	0.4	25	20	1.5	0.7	4.9	1.0	2	8	-6	14
Cowpens National Battlefield	SC	-0.4	0.5	-8	13	1.5	0.6	4.5	0.9	7	6	11	9
Crater Lake National Park	OR	1.0	0.6	-18	14	1.6	0.7	4.5	0.9	4	6	4	10
Craters of the Moon National Monument	ID	1.7	0.5 **	1	17	1.9	1.0	5.6	1.3	8	6	13	9
Craters of the Moon National Preserve	ID	0.8	0.6	8	17	2.0	1.0	5.6	1.3	8	6	13	9
Cumberland Gap National Historical Park	KY	-0.3	0.7	-3	12	1.5	0.6	4.7	0.9	5	5	10	8
Cumberland Island National Seashore	GA	0	0.5	-9	10	1.2	0.5	3.9	0.7	6	6	6	9
Curecanti National Recreation Area	CO	0.9	0.6	23	14	1.7	0.8	5.2	1.1	6	7	6	10
Cuyahoga Valley National Park	OH	0.3	0.6	22	11 *	1.8	0.8	5.3	1.1	6	4	12	7
Dayton Aviation Heritage National Historical Park	OH	0.2	0.6	20	11	1.7	0.7	5.2	1.1	6	5	13	9
De Soto National Memorial	FL	1.0	0.4 *	-7	15	1.2	0.5	3.8	0.8	6	5	4	10
Death Valley National Park	CA	1.3	0.5 *	38	27	1.7	0.7	4.9	1.0	9	12	8	19
Delaware Water Gap National Recreation Area	PA	1.1	0.5 *	17	14	1.8	0.7	5.2	1.0	8	6	15	8
Denali National Park	AK	3.9	1.1 **	-11	15	2.4	1.0	6.4	1.4	12	7	32	11
Denali National Preserve	AK	4.3	1.1 ***	5	14	2.4	1.0	6.5	1.4	12	7	32	11
Devils Postpile National Monument	CA	1.9	0.7 *	35	29	1.7	0.8	4.8	1.0	6	11	7	16
Devils Tower National Monument	WY	0.4	0.7	31	15 *	1.8	0.8	5.3	1.4	6	7	13	9
Dinosaur National Monument	CO, UT	1.9	0.7 **	25	16	1.8	1.0	5.6	1.2	9	8	10	11

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National park													
Dry Tortugas National Park	FL	0.2	0.4	31	19	1.0	0.4	3.1	0.6	6	6	-1	12
Ebey's Landing National Historical Reserve	WA	1.8	0.6 **	13	12	1.7	0.7	4.5	1.1	4	4	7	5
Edgar Allan Poe National Historic Site	PA	2.1	0.7 **	23	10 *	1.7	0.7	4.9	0.9	7	6	14	8
Effigy Mounds National Monument	IA	0.4	0.7	29	15	2.0	0.9	5.7	1.3	5	6	10	9
Eisenhower National Historic Site	PA	0.3	0.5	15	13	1.7	0.7	5.1	1.0	7	5	14	7
El Malpais National Monument	NM	1.1	0.5 *	46	18 *	1.7	0.7	5.1	1.0	4	8	-2	11
El Morro National Monument	NM	0.7	0.4	42	17 *	1.7	0.8	5.1	1.0	4	8	-2	11
Eleanor Roosevelt National Historic Site	NY	0.3	0.5	29	15	1.8	0.8	5.2	1.0	7	6	15	7
Eugene O'Neill National Historic Site	CA	1.7	0.5 **	11	26	1.5	0.6	3.9	0.9	5	12	8	16
Everglades National Park	FL	1.2	0.4 **	9	15	1.0	0.4	3.1	0.6	4	5	-3	9
Federal Hall National Memorial	NY	1.7	0.5 **	22	14	1.7	0.7	4.9	0.9	7	6	14	8
Fire Island National Seashore	NY	1.9	0.6 **	14	12	1.6	0.7	4.6	0.9	7	7	13	9
First Ladies National Historic Site	OH	-0.4	0.6	25	11 *	1.8	0.8	5.2	1.1	6	4	12	7
First State National Historical Park	DE, PA	1.3	0.4 **	26	12	1.7	0.7	4.9	0.9	7	6	14	8
Flight 93 National Memorial	PA	0.1	0.7	7	10	1.8	0.7	5.1	1.0	6	4	12	6
Florissant Fossil Beds National Monument	CO	-0.7	0.5	23	13	1.6	0.8	5.1	1.1	7	8	4	11
Ford's Theatre National Historic Site	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Fort Bowie National Historic Site	AZ	0.7	0.5	23	23	1.6	0.7	5.0	1.0	2	8	-5	12
Fort Caroline National Memorial	FL	0.4	0.5	-7	11	1.2	0.5	3.8	0.8	6	6	5	9
Fort Davis National Historic Site	TX	1.0	0.6	47	21 *	1.5	0.7	4.9	1.0	3	8	-3	14
Fort Donelson National Battlefield	TN	0.4	0.8	6	13	1.6	0.7	4.9	1.1	5	7	9	10
Fort Frederica National Monument	GA	0.6	0.4	-18	10	1.2	0.5	3.9	0.7	7	6	7	9
Fort Laramie National Historic Site	WY	-0.2	0.5	18	12	1.7	0.8	5.1	1.2	8	7	10	9
Fort Larned National Historic Site	KS	-0.4	0.6	24	15	1.7	0.8	5.2	1.2	4	6	1	10
Fort Matanzas National Monument	FL	0.1	0.4	-3	10	1.2	0.5	3.7	0.8	6	6	3	10
Fort McHenry National Monument and Historic Shrine	MD	1.7	0.5 **	11	13	1.7	0.7	4.9	0.9	7	6	14	8

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National park													
Fort Monroe National Monument	VA	1.1	0.7	23	11 *	1.4	0.6	4.3	0.8	6	5	10	8
Fort Necessity National Battlefield	PA	0.2	0.6	12	9	1.7	0.7	5.1	1.1	6	4	12	6
Fort Point National Historic Site	CA	1.6	0.6 *	19	27	1.4	0.6	3.8	0.8	5	12	9	16
Fort Pulaski National Monument	GA	0.7	0.6	-1	15	1.2	0.5	3.9	0.7	7	6	8	9
Fort Raleigh National Historic Site	NC	1.1	0.5 *	4	9	1.3	0.6	3.9	0.7	5	4	7	9
Fort Scott National Historic Site	KS	-1.9	0.9 *	38	17 *	1.7	0.8	5.1	1.1	4	5	6	8
Fort Smith National Historic Site	AR, OK	0	0.6	29	16	1.6	0.7	5.0	1.1	2	5	3	8
Fort Stanwix National Monument	NY	1.0	0.5	22	13	1.9	0.8	5.6	1.2	6	4	12	5
Fort Sumter National Monument	SC	1.0	0.6	2	12	1.2	0.5	3.8	0.7	7	6	9	9
Fort Union National Monument	NM	0.7	0.5	37	16 *	1.6	0.7	5.0	1.0	4	8	-4	11
Fort Union Trading Post National Historic Site	ND	2.6	1.1 *	9	15	2.0	0.9	5.6	1.5	6	8	13	10
Fort Vancouver National Historic Site	WA	1.1	0.5 *	-8	16	1.6	0.7	4.2	1.0	3	5	4	6
Fort Washington Park	MD	1.2	0.6	15	12	1.7	0.7	4.9	0.9	7	6	14	8
Fossil Butte National Monument	WY	1.3	0.6 *	16	18	1.9	1.0	5.6	1.3	9	7	11	10
Franklin Delano Roosevelt Memorial	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Frederick Douglass National Historic Site	DC	0.8	0.5	13	12	1.7	0.7	4.9	1.0	7	6	14	8
Frederick Law Olmsted National Historic Site	MA	-0.3	0.6	24	12 *	1.8	0.8	5.0	1.1	6	6	15	7
Fredericksburg and Spotsylvania National Military Park	VA	0.7	0.6	17	13	1.6	0.7	4.9	0.9	8	5	14	8
Freedom Riders National Monument	AL	0.4	0.4	4	12	1.4	0.6	4.5	0.9	6	7	8	10
Friendship Hill National Historic Site	PA	-0.4	0.7	16	10	1.7	0.7	5.1	1.1	6	4	11	6
Gates of the Arctic National Park	AK	4.2	1.0 ***	-10	13	2.7	1.3	7.5	1.8	12	8	36	14
Gates of the Arctic National Preserve	AK	4.1	1.1 ***	-13	12	2.7	1.2	7.4	1.7	12	8	35	13
Gateway Arch National Park	MO	-0.3	0.8	37	15 *	1.8	0.8	5.2	1.2	5	5	11	8
Gateway National Recreation Area	NY, NJ	1.7	0.5 **	15	12	1.7	0.7	4.8	0.9	7	6	14	8
Gauley River National Recreation Area	WV	0.1	0.5	12	10	1.6	0.7	4.9	1.0	6	5	11	7

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National park													
General Grant National Memorial	NY	1.6	0.5 **	22	15	1.7	0.7	4.9	0.9	7	6	14	8
George Rogers Clark National Historical Park	IN	0.9	0.7	27	12 *	1.7	0.8	5.1	1.1	5	5	12	9
George Washington Birthplace National Monument	VA	1.3	0.5 *	18	12	1.6	0.6	4.8	0.9	7	5	13	8
George Washington Carver National Monument	MO	-0.9	0.6	35	16 *	1.7	0.7	5.1	1.1	3	5	5	8
George Washington Memorial Parkway	DC	0.8	0.5	15	12	1.7	0.7	4.9	1.0	7	6	14	8
Gettysburg National Military Park	PA	0.2	0.5	15	13	1.7	0.7	5.1	1.0	7	5	14	7
Gila Cliff Dwellings National Monument	NM	0.5	0.3	39	19 *	1.6	0.7	5.0	1.0	3	9	-4	12
Glacier Bay National Park	AK	2.8	1.1 *	22	15	1.9	0.7	5.0	1.1	8	5	18	7
Glacier Bay National Preserve	AK	2.6	1.2 *	24	19	1.9	0.7	4.8	1.1	7	5	18	7
Glacier National Park	MT	2.1	0.8 **	-13	11	1.9	0.9	5.2	1.2	5	6	10	9
Glen Canyon National Recreation Area	AZ, UT	1.4	0.5 *	32	19	1.8	0.9	5.3	1.2	6	8	6	12
Golden Gate National Recreation Area	CA	1.4	0.5 *	7	25	1.4	0.6	3.7	0.8	5	12	9	16
Golden Spike National Historic Site	UT	1.0	0.7	30	25	2.0	1.0	5.6	1.3	9	6	12	10
Governors Island National Monument	NY	1.7	0.5 **	22	14	1.7	0.7	4.9	0.9	7	6	14	8
Grand Canyon National Park	AZ	1.1	0.6	20	20	1.7	0.8	5.1	1.1	5	7	3	12
Grand Portage National Monument	MN	0.9	0.7	4	10	2.0	0.9	6.1	1.4	6	4	12	8
Grand Teton National Park	WY	1.9	0.6 **	7	14	1.7	0.9	5.4	1.2	6	6	13	9
Grant-Kohrs Ranch National Historic Site	MT	0.3	0.5	13	13	1.8	0.8	5.2	1.2	6	5	10	7
Great Basin National Park	NV	0.6	0.5	36	18	1.8	0.9	5.3	1.1	9	8	10	13
Great Egg Harbor Scenic and Recreational River	NJ	1.0	0.5 *	9	10	1.6	0.7	4.6	0.9	7	6	13	8
Great Sand Dunes National Park	CO	0.7	0.6	40	17 *	1.6	0.8	5.1	1.1	5	8	2	11
Great Sand Dunes National Preserve	CO	1.0	0.7	54	19 **	1.6	0.8	5.1	1.1	5	8	2	11
Great Smoky Mountains National Park	TN, NC	0.1	0.5	4	11	1.5	0.6	4.6	0.9	6	6	10	9

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National park													
Greenbelt Park	MD	1.5	0.5 **	11	12	1.7	0.7	4.9	1.0	7	6	14	8
Guadalupe Mountains National Park	TX	0.1	0.5	43	23	1.5	0.7	5.0	1.0	2	9	-3	15
Guilford Courthouse National Military Park	NC	0.7	0.5	7	11	1.5	0.6	4.6	0.9	8	6	13	9
Gulf Islands National Seashore	FL, MS	0	0.4	28	13 *	1.3	0.5	3.9	0.7	6	6	3	10
Hagerman Fossil Beds National Monument	ID	0.2	0.6	2	23	2.0	1.0	5.5	1.3	9	7	16	10
Haleakala National Park	HI	2.0	0.6 **	-18	20	1.1	0.4	3.2	0.8	2	15	12	32
Hamilton Grange National Memorial	NY	1.6	0.5 **	21	15	1.7	0.7	4.9	0.9	7	6	14	9
Hampton National Historic Site	MD	1.2	0.5 *	17	14	1.7	0.7	5.0	1.0	7	6	14	8
Harpers Ferry National Historical Park	WV	-0.2	0.4	19	13	1.7	0.7	5.0	1.0	7	5	14	7
Harriet Tubman National Historical Park	NY	0.7	0.5	47	10 ***	1.9	0.8	5.5	1.2	7	4	12	5
Harriet Tubman Underground Railroad National Monument	MD	1.5	0.4 ***	14	11	1.6	0.6	4.6	0.8	7	5	12	8
Harry S Truman National Historic Site	MO	-0.1	0.7	31	14 *	1.7	0.8	5.2	1.2	4	5	7	8
Hawai'i Volcanoes National Park	HI	1.4	0.6 *	-38	17 *	1.1	0.4	3.3	0.8	2	15	17	36
Herbert Hoover National Historic Site	IA	0.6	0.7	29	16	1.9	0.8	5.5	1.3	5	5	10	9
Hohokam Pima National Monument	AZ	2.9	0.8 **	14	29	1.6	0.7	4.9	1.0	2	8	-3	15
Home of Franklin D. Roosevelt National Historic Site	NY	0.4	0.5	29	15	1.8	0.8	5.2	1.0	7	5	15	7
Homestead National Monument of America	NE	-0.3	0.7	3	15	1.8	0.8	5.3	1.2	5	6	6	8
Honouliuli National Monument	HI	2.3	0.3 ***	-85	27 **	1.1	0.4	3.1	0.7	1	25	6	38
Hopewell Culture National Historical Park	OH	-0.4	0.7	11	11	1.7	0.7	5.1	1.1	6	5	12	8
Hopewell Furnace National Historic Site	PA	1.0	0.5	24	13	1.7	0.7	5.0	1.0	7	6	14	8
Horseshoe Bend National Military Park	AL	0	0.4	1	12	1.4	0.5	4.4	0.9	6	7	7	10
Hot Springs National Park	AR	-1.3	0.7	12	14	1.6	0.7	4.9	1.0	2	6	3	10
Hovenweep National Monument	UT	1.1	0.5 *	16	18	1.8	0.9	5.3	1.2	6	8	5	13

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National park														
Hubbell Trading Post National Historic Site	AZ	2.2	0.6 ***	8	21	1.7	0.8	5.1	1.1	4	8	1	12	
Independence National Historical Park	PA	1.9	0.6 **	23	10 *	1.7	0.7	4.9	0.9	7	6	14	8	
Indiana Dunes National Lakeshore	IN	0.3	0.7	18	10	1.9	0.9	5.4	1.3	6	5	11	8	
Isle Royale National Park	MI	1.5	0.8	1	8	2.1	0.9	6.1	1.4	6	4	12	8	
James A Garfield National Historic Site	OH	1.1	0.6	22	10 *	1.9	0.8	5.4	1.2	6	4	12	7	
Jean Lafitte National Historical Park and Preserve	LA	0.8	0.5	16	11	1.2	0.5	3.8	0.7	4	6	0	10	
Jewel Cave National Monument	SD	1.5	0.7 *	35	16 *	1.8	0.8	5.2	1.3	6	7	11	9	
Jimmy Carter National Historic Site	GA	-1.0	0.6	7	12	1.4	0.5	4.3	0.9	6	6	7	10	
John D. Rockefeller, Jr. Memorial Parkway	WY	1.5	0.6 *	11	14	1.7	0.9	5.3	1.2	6	6	13	9	
John Day Fossil Beds National Monument	OR	1.4	0.5 **	1	17	1.7	0.8	4.7	1.1	8	7	11	10	
John Fitzgerald Kennedy National Historic Site	MA	-0.1	0.5	23	12	1.8	0.8	5.0	1.1	6	6	15	7	
John Muir National Historic Site	CA	1.6	0.6 *	17	26	1.4	0.6	3.9	0.8	5	12	8	16	
Johnstown Flood National Memorial	PA	0.4	0.6	7	9	1.8	0.7	5.2	1.0	6	4	12	6	
Joshua Tree National Park	CA	1.5	0.5 **	48	45	1.5	0.6	4.6	0.9	7	11	4	19	
Kalaupapa National Historical Park	HI	2.2	0.8 *	-57	26 *	1.1	0.4	3.1	0.8	2	15	10	30	
Kaloko-Honokohau National Historical Park	HI	1.6	0.3 ***	-63	17 **	1.1	0.4	3.2	0.8	2	27	13	52	
Katahdin Woods and Waters National Monument	ME	0.4	0.5	16	12	2.0	0.9	5.7	1.2	8	5	17	5	
Katmai National Park	AK	2.9	1.1 *	20	11	2.3	0.9	5.7	1.3	9	4	22	6	
Katmai National Preserve	AK	3.1	1.1 **	10	11	2.4	1.0	6.1	1.4	9	4	23	6	
Kenai Fjords National Park	AK	1.3	1.0	20	20	2.1	0.9	5.4	1.3	10	5	24	8	
Kennesaw Mountain National Battlefield Park	GA	0.2	0.7	5	13	1.4	0.6	4.5	0.9	6	6	9	9	

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Keweenaw National Historical Park	MI	2.5	0.8 **	-3	11	2.0	0.9	6.0	1.4	6	4	11	7
Kings Canyon National Park	CA	1.5	0.5 **	19	25	1.7	0.8	4.8	1.0	6	11	6	17
Kings Mountain National Military Park	SC	-0.3	0.6	-7	12	1.5	0.6	4.5	0.9	7	6	12	9
Klondike Gold Rush National Historical Park	AK	3.1	1.2 *	4	13	2.1	0.8	5.4	1.2	10	5	22	8
Knife River Indian Villages National Historic Site	ND	2.0	1.1	13	13	2.0	0.9	5.8	1.5	6	7	12	10
Kobuk Valley National Park	AK	3.6	1.1 **	19	15	2.9	1.3	7.9	1.8	12	9	38	16
Korean War Veterans Memorial	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Lake Chelan National Recreation Area	WA	3.2	0.4 ***	-7	12	1.8	0.7	4.9	1.2	5	4	9	6
Lake Clark National Park	AK	2.6	1.0 *	11	15	2.3	0.9	6.1	1.3	10	5	26	8
Lake Clark National Preserve	AK	2.8	1.1 *	12	13	2.4	1.0	6.3	1.4	10	5	27	8
Lake Mead National Recreation Area	AZ, NV	1.8	0.6 **	25	24	1.6	0.7	5.0	1.0	7	9	4	15
Lake Meredith National Recreation Area	TX	-0.5	0.5	19	16	1.6	0.7	5.1	1.1	4	8	-3	10
Lake Roosevelt National Recreation Area	WA	1.3	0.6 *	-8	16	1.9	0.8	5.1	1.2	7	5	12	6
Lassen Volcanic National Park	CA	-0.2	0.5	-11	22	1.6	0.6	4.6	0.9	5	10	7	14
Lava Beds National Monument	CA	1.2	0.5 *	-14	18	1.7	0.6	4.7	0.9	5	8	7	13
Lewis and Clark National Historical Park	OR	0.6	0.4	-17	14	1.5	0.6	3.8	0.9	3	5	5	6
Lincoln Boyhood National Memorial	IN	0.6	0.7	22	12	1.7	0.7	5.0	1.1	6	6	12	9
Lincoln Home National Historic Site	IL	0	0.7	26	14	1.8	0.8	5.3	1.2	5	6	11	8
Lincoln Memorial	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Little Bighorn Battlefield National Monument	MT	2.0	0.8 *	10	14	1.8	0.8	5.3	1.4	8	6	15	9
Little River Canyon National Preserve	AL	-0.1	0.7	4	13	1.4	0.6	4.5	0.9	6	6	8	10
Little Rock Central High School National Historic Site	AR	0.5	0.6	4	14	1.6	0.7	4.8	1.0	2	6	4	10
Longfellow National Historic Site	MA	0.2	0.5	22	12	1.8	0.8	5.0	1.1	6	6	15	7

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Lowell National Historical Park	MA	-0.7	0.7	28	13 *	1.8	0.8	5.2	1.1	7	6	16	7
Lyndon B. Johnson National Historical Park	TX	0.3	0.6	36	18	1.5	0.7	4.6	1.0	1	7	-3	12
Lyndon Baines Johnson Memorial Grove on the Potomac	VA	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Maggie L. Walker National Historic Site	VA	1.1	0.7	13	12	1.6	0.6	4.7	0.9	7	5	13	9
Mammoth Cave National Park	KY	1.0	0.7	7	12	1.6	0.7	4.9	1.0	6	7	11	10
Manassas National Battlefield Park	VA	0.4	0.4	21	12	1.7	0.7	4.9	1.0	7	6	14	8
Manhattan Project National Historical Park	NM, TN, WA	1.0	0.3 *	9	8	1.7	0.7	4.8	1.1	6	7	8	14
Manzanar National Historic Site	CA	2.1	0.7 **	14	30	1.7	0.8	4.8	1.0	7	11	7	18
Marsh-Billings-Rockefeller National Historical Park	VT	1.1	0.6	32	13 *	1.9	0.9	5.5	1.1	7	5	15	6
Martin Luther King, Jr. Memorial	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Martin Luther King, Jr. National Historical Park	GA	0.3	0.7	7	13	1.4	0.6	4.5	0.9	6	6	9	9
Martin Van Buren National Historic Site	NY	0.5	0.6	37	16 *	1.9	0.8	5.4	1.1	7	5	15	7
Mary McLeod Bethune Council House National Historic Site	DC	0.7	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Mesa Verde National Park	CO	-0.3	0.6	22	15	1.8	0.9	5.3	1.1	6	8	4	13
Middle Delaware National Scenic River	PA	1.1	0.5 *	17	14	1.8	0.7	5.2	1.0	8	6	15	8
Minidoka National Historic Site	ID	0.4	0.5	15	19	2.0	1.0	5.5	1.3	9	7	14	9
Minute Man National Historical Park	MA	0.6	0.6	27	12 *	1.8	0.8	5.1	1.1	7	6	16	7
Minuteman Missile National Historic Site	SD	0.9	0.9	27	16	1.8	0.8	5.3	1.3	6	7	11	10
Mississippi National River and Recreation Area	MN	1.7	0.8 *	28	10 **	2.1	0.9	5.9	1.4	5	4	10	8
Missouri National Recreational River	SD	0.8	0.9	25	14	1.9	0.9	5.5	1.4	5	6	9	9
Mojave National Preserve	CA	1.3	0.5 *	44	35	1.6	0.7	4.8	0.9	8	12	5	19

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Monocacy National Battlefield	MD	1.5	0.6 *	21	14	1.7	0.7	5.0	1.0	7	5	14	8
Montezuma Castle National Monument	AZ	1.2	0.5 *	24	20	1.7	0.8	5.0	1.1	3	8	-1	14
Moore's Creek National Battlefield	NC	0.5	0.5	8	9	1.3	0.5	4.0	0.7	7	5	10	10
Morristown National Historical Park	NJ	0.7	0.6	15	14	1.7	0.7	5.0	1.0	7	6	15	8
Mount Rainier National Park	WA	1.1	0.6	-11	12	1.7	0.7	4.6	1.1	4	4	6	6
Mount Rushmore National Memorial	SD	0.9	0.7	24	19	1.8	0.8	5.2	1.3	6	7	11	9
Muir Woods National Monument	CA	1.3	0.5 *	-2	21	1.4	0.6	3.8	0.8	5	12	9	16
Natchez National Historical Park	MS	-0.8	0.6	9	11	1.4	0.6	4.4	0.9	3	6	0	11
Natchez Trace National Scenic Trail	AL, MS, TN	-0.3	0.4	15	12	1.5	0.6	4.6	1.0	4	7	5	18
Natchez Trace Parkway	AL, MS, TN	-0.4	0.6	16	12	1.5	0.6	4.6	1.0	4	7	5	11
National Capital Parks	DC, MD	0.9	0.4	14	12	1.7	0.7	4.9	1.0	7	6	14	8
National Mall	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
National Park of American Samoa	AS	2.6	0.9 *	-7	14	0.9	0.3	2.7	0.6	-15	146	28	193
Natural Bridges National Monument	UT	0.5	0.4	25	18	1.8	0.9	5.3	1.2	6	8	6	13
Navajo National Monument	AZ	1.5	0.6 *	20	20	1.8	0.8	5.2	1.1	6	8	5	13
New Bedford Whaling National Historical Park	MA	-0.4	0.5	44	13 **	1.6	0.8	4.6	1.0	6	6	13	8
New Orleans Jazz National Historical Park	LA	0.8	0.5	21	12	1.2	0.5	3.9	0.7	4	6	0	10
New River Gorge National River	WV	0.4	0.5	9	9	1.6	0.7	4.8	1.0	6	5	11	7
Nez Perce National Historical Park	ID, MT, OR, WA	1.6	0.5 **	-7	11	1.9	0.8	5.1	1.2	5	4	8	6
Nicodemus National Historic Site	KS	-0.1	0.7	15	15	1.7	0.8	5.2	1.2	5	6	2	10
Ninety Six National Historic Site	SC	-0.3	0.7	-4	13	1.4	0.5	4.4	0.9	7	6	11	9
Niobrara National Scenic River	NE	0.4	0.8	27	15	1.8	0.8	5.3	1.3	5	6	8	9
Noatak National Preserve	AK	3.5	1.1 **	17	16	3.0	1.5	8.3	2.0	13	10	39	16
North Cascades National Park	WA	1.8	0.6 **	-15	12	1.8	0.7	4.9	1.2	4	4	9	5
Obed Wild and Scenic River	TN	0.2	0.6	8	13	1.5	0.6	4.7	0.9	5	6	9	9

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Ocmulgee National Monument	GA	-0.5	0.5	3	11	1.4	0.5	4.4	0.9	6	6	9	10
Olympic National Park	WA	0.7	0.4	-8	11	1.6	0.6	4.2	1.0	4	5	7	5
Oregon Caves National Monument and Preserve	OR	1.8	0.7 *	-17	20	1.5	0.6	4.1	0.9	3	8	3	9
Organ Pipe Cactus National Monument	AZ	2.1	0.7 **	4	28	1.5	0.7	4.7	0.9	3	8	-3	15
Ozark National Scenic Riverways	MO	-0.4	0.6	25	14	1.7	0.8	5.1	1.1	4	6	8	9
Padre Island National Seashore	TX	0.1	0.5	35	23	1.2	0.6	3.8	0.7	3	6	-2	12
Palo Alto Battlefield National Historical Park	TX	1.2	0.6 *	37	21	1.2	0.5	3.7	0.7	4	7	-4	12
Paterson Great Falls National Historical Park	NJ	0.6	0.4	5	11	1.7	0.7	5.0	1.0	7	6	15	8
Pea Ridge National Military Park	AR	-0.5	0.7	22	16	1.6	0.7	5.0	1.1	3	5	4	8
Pecos National Historical Park	NM	1.5	0.5 *	42	15 **	1.6	0.7	5.0	1.0	4	9	-4	11
Pennsylvania Avenue National Historic Site	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Perry's Victory and International Peace Memorial	OH	-0.4	0.6	14	9	1.9	0.8	5.4	1.2	6	4	12	8
Petersburg National Battlefield	VA	1.4	0.6 *	12	12	1.5	0.6	4.6	0.8	7	5	13	10
Petrified Forest National Park	AZ	1.8	0.6 *	15	20	1.7	0.8	5.1	1.1	3	7	-1	12
Petroglyph National Monument	NM	0.6	0.5	57	21 *	1.6	0.8	5.1	1	4	9	-3	11
Pictured Rocks National Lakeshore	MI	1.7	0.7 *	1	9	2.1	1.0	6.3	1.7	7	4	12	8
Pinnacles National Park	CA	-0.6	0.5	19	23	1.4	0.6	3.9	0.9	5	13	8	17
Pipe Spring National Monument	AZ	0.9	0.4 *	39	21	1.7	0.8	5.1	1.1	6	7	5	12
Pipestone National Monument	MN	1.2	0.9	31	13 *	2.0	0.9	5.7	1.4	6	6	11	9
Piscataway Park	MD	1.3	0.6	14	12	1.7	0.7	4.9	0.9	7	6	14	8
Point Reyes National Seashore	CA	1.3	0.5 *	3	25	1.4	0.6	3.7	0.8	5	11	10	16
Port Chicago Naval Magazine National Memorial	CA	2.6	0.4 ***	29	25	1.5	0.6	4.0	0.8	5	12	8	16

National park	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
Potomac Heritage National Scenic Trail	DC, MD, PA, VA	0.7	0.5	15	11	1.7	0.7	4.9	1.0	7	5	13	7
Poverty Point National Monument	LA	0	0.6	21	15	1.5	0.7	4.6	1.0	3	7	2	11
President William Jefferson Clinton Birthplace Home National Historic Site	AR	-0.6	0.6	15	15	1.6	0.7	4.8	1.0	2	6	1	10
Prince William Forest Park	VA	0.8	0.5	16	12	1.7	0.7	4.9	0.9	7	6	14	8
Pu`uhonua O Hōnaunau National Historical Park	HI	1.5	0.5 *	-57	19 **	1.1	0.4	3.3	0.8	2	15	17	37
Pu`ukoholā Heiau National Historic Site	HI	1.6	0.6 *	-28	17	1.1	0.4	3.2	0.8	2	16	16	38
Pullman National Monument	IL	1.0	0.5	25	11	1.9	0.9	5.4	1.3	6	5	12	8
Rainbow Bridge National Monument	UT	1.7	0.6 **	31	21	1.8	0.8	5.2	1.1	6	8	6	13
Reconstruction Era National Monument	SC	1.7	0.4 ***	6	12	1.2	0.5	3.9	0.7	7	6	8	9
Redwood National Park	CA	0.4	0.4	-24	17	1.4	0.6	3.8	0.9	3	9	4	10
Richmond National Battlefield Park	VA	1.5	0.6 *	14	12	1.5	0.6	4.7	0.9	7	5	13	9
Rio Grande Wild and Scenic River	TX	-0.2	0.4	27	22	1.4	0.7	4.8	1.0	4	8	-2	14
River Raisin National Battlefield	MI	0.1	0.7	19	11	1.9	0.8	5.4	1.2	6	4	12	8
Rock Creek Park	DC	0.9	0.4	15	12	1.7	0.7	4.9	1.0	7	6	14	8
Rocky Mountain National Park	CO	1.7	0.6 **	11	11	1.7	0.8	5.1	1.1	8	8	9	10
Roger Williams National Memorial	RI	1.0	0.6	23	11 *	1.7	0.8	4.8	1.0	6	6	15	8
Rosie the Riveter WWII Home Front National Historical Park	CA	1.3	0.5 *	20	28	1.4	0.6	3.8	0.8	5	12	9	16
Ross Lake National Recreation Area	WA	1.5	0.6 *	-13	11	1.8	0.7	4.9	1.2	4	4	9	5
Russell Cave National Monument	AL	-0.7	0.6	4	12	1.5	0.6	4.6	0.9	5	6	8	10
Sagamore Hill National Historic Site	NY	1.4	0.5 **	17	14	1.7	0.7	4.8	0.9	7	7	14	9
Saguaro National Park	AZ	1.2	0.4 **	13	21	1.6	0.7	4.9	1.0	2	8	-5	13
Saint Croix Island International Historic Site	ME	0.4	0.5	15	12	1.8	0.9	5.3	1.2	7	6	15	7
Saint Croix National Scenic Riverway	WI	1.8	0.8 *	8	10	2.1	1.0	5.9	1.4	5	4	10	8

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Saint Paul's Church National Historic Site	NY	1.4	0.5 **	17	14	1.7	0.7	4.9	0.9	7	7	14	9
Saint-Gaudens National Historic Site	NH	1.0	0.5 *	29	13 *	1.9	0.8	5.5	1.1	7	5	15	6
Salem Maritime National Historic Site	MA	0.9	0.5	37	12 **	1.8	0.8	5.0	1.1	6	6	15	7
Salinas Pueblo Missions National Monument	NM	1.2	0.5 *	51	21 *	1.6	0.7	5.0	1.0	3	10	-4	12
Salt River Bay National Historic Park and Ecological Preserve	VI	1.5	0.6 *	-1	14	1.0	0.4	2.9	0.6	-1	12	-28	20
San Antonio Missions National Historical Park	TX	0	0.6	33	22	1.4	0.6	4.5	0.9	1	7	-3	13
San Francisco Maritime National Historical Park	CA	1.6	0.7 *	22	27	1.4	0.6	3.8	0.8	5	12	9	16
San Juan Island National Historical Park	WA	1.2	0.6 *	-1	10	1.7	0.7	4.5	1.1	4	4	8	6
San Juan National Historic Site	PR	1.0	0.5	6	17	1.0	0.4	3.0	0.6	0	10	-27	19
Sand Creek Massacre National Historic Site	CO	-0.4	0.6	45	18 *	1.6	0.7	5.0	1.1	5	7	-1	11
Santa Monica Mountains National Recreation Area	CA	1.4	0.5 *	23	30	1.4	0.6	3.9	0.8	5	13	3	20
Saratoga National Historical Park	NY	1.0	0.6	30	15	1.9	0.8	5.5	1.1	7	4	15	6
Saugus Iron Works National Historic Site	MA	0.8	0.5	26	11 *	1.8	0.8	5.0	1.1	6	6	15	7
Scotts Bluff National Monument	NE	0.9	0.5	8	13	1.7	0.8	5.1	1.2	7	7	8	9
Sequoia National Park	CA	1.4	0.5 **	14	26	1.6	0.7	4.7	0.9	6	12	5	17
Shenandoah National Park	VA	0	0.6	23	13	1.7	0.7	4.9	1.0	8	6	14	8
Shiloh National Military Park	TN	0.2	0.7	21	15	1.5	0.6	4.7	1.0	5	7	7	11
Sitka National Historical Park	AK	3.0	1.1 *	6	11	1.8	0.7	4.4	1.0	8	5	16	6
Sleeping Bear Dunes National Lakeshore	MI	1.6	0.6 *	11	9	2	0.9	5.8	1.3	6	5	11	8

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Springfield Armory National Historic Site	MA	-0.3	0.6	15	13	1.8	0.8	5.2	1.0	7	6	15	7
Statue of Liberty National Monument	NY	1.8	0.6 **	22	14	1.7	0.7	4.9	0.9	7	6	14	8
Steamtown National Historic Site	PA	0.1	0.5	22	14	1.8	0.7	5.3	1.1	7	5	14	7
Stones River National Battlefield	TN	-1.2	0.8	6	12	1.5	0.6	4.7	1.0	5	7	9	10
Stonewall National Monument	NY	1.7	0.5 ***	25	11	1.7	0.7	4.9	0.9	7	6	14	8
Sunset Crater Volcano National Monument	AZ	0.1	0.4	13	16	1.7	0.8	5.1	1.1	4	7	1	13
Tallgrass Prairie National Preserve	KS	-0.4	0.7	23	16	1.7	0.8	5.1	1.2	4	5	4	8
Thaddeus Kosciuszko National Memorial	PA	1.9	0.6 **	23	10 *	1.7	0.7	4.9	0.9	7	6	14	8
Theodore Roosevelt Birthplace National Historic Site	NY	1.5	0.5 **	22	14	1.7	0.7	4.9	0.9	7	6	14	8
Theodore Roosevelt Inaugural National Historic Site	NY	0.8	0.5	22	9 *	2.0	0.8	5.6	1.2	7	4	12	6
Theodore Roosevelt Island Park	VA	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Theodore Roosevelt National Park	ND	2.1	1.1	5	14	2.0	0.9	5.6	1.5	6	7	13	10
Thomas Edison National Historical Park	NJ	1.4	0.5 *	18	14	1.7	0.7	5.0	0.9	7	6	14	8
Thomas Jefferson Memorial	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Thomas Stone National Historic Site	MD	1.1	0.6	13	11	1.6	0.7	4.8	0.9	7	5	14	8
Timpanogos Cave National Monument	UT	1.0	0.7	13	23	1.9	1.0	5.5	1.3	8	7	10	10
Timucuan Ecological and Historic Preserve	FL	0.2	0.5	-6	11	1.2	0.5	3.8	0.8	6	6	6	9
Tonto National Monument	AZ	1.5	0.8	20	25	1.6	0.7	5.0	1.0	2	7	-3	13
Tule Springs Fossil Beds National Monument	NV	1.9	0.4 ***	54	35	1.6	0.7	5.0	0.9	9	10	7	17
Tumacacori National Historical Park	AZ	0.8	0.4 *	8	23	1.5	0.7	4.8	1.0	2	8	-6	14
Tupelo National Battlefield	MS	-0.2	0.7	14	14	1.5	0.6	4.7	1.0	5	7	6	11
Tuskegee Airmen National Historic Site	AL	-1.0	0.5	6	12	1.4	0.5	4.3	0.9	6	7	7	10

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Tuskegee Institute National Historic Site	AL	-1.1	0.6	6	12	1.4	0.5	4.3	0.9	6	7	7	10
Tuzigoot National Monument	AZ	1.8	0.6 **	2	20	1.7	0.8	5.0	1.1	3	8	-1	14
Ulysses S. Grant National Historic Site	MO	-0.2	0.8	34	15 *	1.8	0.8	5.2	1.2	5	5	11	8
Upper Delaware Scenic and Recreational River	NY, PA	0.5	0.5	16	14	1.8	0.8	5.3	1.1	7	5	14	7
Valles Caldera National Preserve	NM	0.8	0.4	11	15	1.6	0.8	5.1	1.0	4	8	-2	11
Valley Forge National Historical Park	PA	0.9	0.5	18	12	1.7	0.7	5.0	0.9	7	6	14	8
Vanderbilt Mansion National Historic Site	NY	0.4	0.5	27	15	1.8	0.8	5.2	1.0	7	5	15	7
Vicksburg National Military Park	MS	0.1	0.6	29	13 *	1.5	0.6	4.5	1.0	3	7	2	11
Vietnam Veterans Memorial	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Virgin Islands Coral Reef National Monument	VI	1.4	0.6 *	6	15	1.0	0.4	2.9	0.6	-1	11	-26	19
Virgin Islands National Park	VI	1.4	0.6 *	6	15	1.0	0.4	2.9	0.6	-1	11	-26	19
Voyageurs National Park	MN	1.1	0.8	5	8	2.1	1.0	6.1	1.5	6	5	11	8
Waco Mammoth National Monument	TX	0.1	0.4	25	17	1.5	0.7	4.7	1.0	1	5	-3	10
Walnut Canyon National Monument	AZ	1.6	0.5 **	12	18	1.7	0.8	5.1	1.1	3	7	0	13
War in the Pacific National Historical Park	GU	0.4	0.3	7	13	1.0	0.3	3.0	0.6	7	8	25	26
Washington Monument	DC	0.8	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
Washita Battlefield National Historic Site	OK	-0.9	0.6	31	15 *	1.6	0.7	5.1	1.1	3	7	-2	9
Weir Farm National Historic Site	CT	1.2	0.5 *	18	14	1.7	0.8	5.0	1.0	7	6	14	8
Whiskeytown National Recreation Area	CA	1.5	0.5 **	18	23	1.5	0.6	4.3	0.8	4	10	5	12
White House	DC	0.7	0.5	12	12	1.7	0.7	4.9	1.0	7	6	14	8
White Sands National Monument	NM	0.6	0.5	64	28 *	1.6	0.7	5.0	1.0	2	10	-4	13
Whitman Mission National Historic Site	WA	0	0.5	21	13	1.8	0.7	4.8	1.2	6	5	10	7
William Howard Taft National Historic Site	OH	-0.2	0.6	15	11	1.7	0.7	5.1	1.1	6	5	12	9

	State	1950-2010				2000-2100							
		Temperature		Precipitation		RCP2.6		RCP8.5		RCP2.6		RCP8.5	
		Trend ± SE	°C century ⁻¹	Trend ± SE	% century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Temperature Increase ± SD	°C century ⁻¹	Precipitation Change ± SD	% century ⁻¹	Precipitation Change ± SD	% century ⁻¹
National park													
Wilson's Creek National Battlefield	MO	-0.5	0.7	29	15	1.7	0.7	5.1	1.1	4	5	6	8
Wind Cave National Park	SD	1.4	0.7 *	31	16	1.8	0.8	5.2	1.3	6	7	10	9
Wolf Trap National Park for the Performing Arts	VA	0	0.4	12	12	1.7	0.7	4.9	1	7	6	14	8
Women's Rights National Historical Park	NY	0.5	0.5	23	11 *	1.9	0.8	5.5	1.2	7	4	12	5
World War I Memorial	DC	0.7	0.4	14	12	1.7	0.7	4.9	1	7	6	14	8
World War II Memorial	DC	0.8	0.5	12	12	1.7	0.7	4.9	1	7	6	14	8
World War II Valor in the Pacific National Monument	HI	2.4	0.6 **	-81	29 **	1.1	0.4	3.1	0.7	3	15	8	28
Wrangell-St. Elias National Park	AK	1.9	1.1	2	18	2.1	0.8	5.3	1.2	9	5	23	8
Wrangell-St. Elias National Preserve	AK	2.2	1.1 *	-10	14	2.2	0.9	5.6	1.3	10	6	25	9
Wright Brothers National Memorial	NC	1.2	0.6	8	9	1.3	0.6	3.9	0.7	5	4	7	9
Wupatki National Monument	AZ	1.4	0.5 **	10	23	1.7	0.8	5.1	1.1	4	7	1	13
Yellowstone National Park	ID, MT, WY	1.4	0.7	7	12	1.7	0.9	5.3	1.2	6	6	12	9
Yosemite National Park	CA	1.9	0.7 **	5	28	1.7	0.8	4.7	1	6	11	6	16
Yucca House National Monument	CO	0.8	0.5	14	17	1.8	0.9	5.3	1.1	6	8	5	13
Yukon-Charley Rivers National Preserve	AK	3.2	1.0 **	-66	20 **	2.3	1.0	6.5	1.5	11	8	31	12
Zion National Park	UT	1.9	0.7 **	34	20	1.8	0.8	5.2	1.1	7	7	6	12

Table S6. Historical annual precipitation changes. Trends and standard errors (SE) from linear regression, corrected for temporal autocorrelation. Historical period for areas outside the contiguous states is 1901-2009, the period of available spatial data. The 1901-2016 difference is the difference between 1901-60 and 1986-2016. Significance: * $P \leq 0.05$, ** $P \leq 0.01$, *** $P \leq 0.001$.

	Area km ²	1895-2010		1901-2016	1895-2010		
		Mean mm y ⁻¹	Trend mean \pm SE % century ⁻¹	Difference %	Significant change % of area	Decrease	Significant decrease
United States							
Contiguous 48 states	7.8 x 10 ⁶	760	7 \pm 2 **	6	27	11	<0.5
Alaska	1.5 x 10 ⁶	890	-7 \pm 3 *	-4	27	54	24
Hawaii	1.7 x 10 ⁴	2200	-14 \pm 6 *	-11	21	99	21
Puerto Rico, Virgin Is.	9.3 x 10 ³	1900	-8 \pm 5	-5	36	1	36
Guam	560	7600	-1 \pm 5	2	0	78	0
American Samoa	160	3000	5 \pm 5	1	0	0	0
Total	9.3 x 10 ⁶	790	4 \pm 2 *	4	27	18	4
National Park System							
Contiguous 48 states	1.3 x 10 ⁵	770	4 \pm 2	3	10	26	<0.5
Alaska	2.2 x 10 ⁵	1200	-7 \pm 3 *	-4	20	63	19
Hawaii	1.8 x 10 ³	1800	-7 \pm 6	-7	3	1	3
Puerto Rico, Virgin Is.	39	1500	-8 \pm 5	-5	0	1	0
Guam	5	7400	-1 \pm 5	2	0	1	0
American Samoa	13	3200	5 \pm 5	1	0	0	0
Total	3.6 x 10 ⁵	1100	-4 \pm 2	-2	16	49	12

Table S7. Projected mean annual temperature and velocity changes. Projected changes and standard deviations (SD) for the difference between the periods 1971-2000 and 2071-2100, from ensembles of all general circulation models available for IPCC (2013).

		RCP2.6	RCP4.5	RCP6.0	RCP8.5	RCP2.6	RCP8.5	RCP2.6	RCP8.5
	Area	Increase				Velocity		Velocity >200	
	km ²	mean \pm SD				x historical		km century ⁻¹	
		°C century ⁻¹							
United States									
Contiguous 48 states	7.8 x 10 ⁶	1.7 \pm 0.8	2.9 \pm 0.9	3.3 \pm 0.9	5 \pm 1.1	4	11	9	40
Alaska	1.5 x 10 ⁶	2.5 \pm 1.1	3.9 \pm 1.2	4.5 \pm 1.2	6.9 \pm 1.6	2	6	3	6
Hawaii	1.7 x 10 ⁴	1.1 \pm 0.4	1.7 \pm 0.5	2 \pm 0.7	3.2 \pm 0.8	0.7	2	0.4	2
Puerto Rico, Virgin Is.	9.3 x 10 ³	1 \pm 0.4	1.7 \pm 0.4	1.9 \pm 0.5	3 \pm 0.6	0.8	2	1	1
Guam	560	1 \pm 0.3	1.6 \pm 0.4	1.9 \pm 0.4	3 \pm 0.6	4	13	36	197
American Samoa	160	0.9 \pm 0.3	1.5 \pm 0.4	1.7 \pm 0.5	2.7 \pm 0.6	0.6	2	0.7	1
Total	9.3 x 10 ⁶	1.8 \pm 0.8	3 \pm 0.9	3.5 \pm 0.9	5.3 \pm 1.2	4	11	6	22
National Park System									
Contiguous 48 states	1.3 x 10 ⁵	1.6 \pm 0.7	2.8 \pm 0.8	3.2 \pm 0.8	4.9 \pm 1	6	20	2	12
Alaska	2.2 x 10 ⁵	2.5 \pm 1.1	3.8 \pm 1.1	4.3 \pm 1.2	6.6 \pm 1.5	0.8	2	0.7	2
Hawaii	1.8 x 10 ³	1.1 \pm 0.4	1.8 \pm 0.5	2.1 \pm 0.7	3.2 \pm 0.8	0.5	1	0.1	0.5
Puerto Rico, Virgin Is.	39	1 \pm 0.4	1.7 \pm 0.4	1.9 \pm 0.5	2.9 \pm 0.6	0.1	0.2	1	1
Guam	5	1 \pm 0.3	1.6 \pm 0.4	1.9 \pm 0.4	3 \pm 0.6	2	6	14	57
American Samoa	14	0.9 \pm 0.3	1.5 \pm 0.4	1.7 \pm 0.5	2.7 \pm 0.6	0.1	0.2	0.1	0.6
Total	3.6 x 10 ⁵	2.2 \pm 0.9	3.4 \pm 1	3.9 \pm 1	5.9 \pm 1.3	3	9	2	7

Table S8. Projected annual precipitation changes. Projected changes and standard deviations (SD) for the difference between the periods 1971-2000 and 2071-2100, from ensembles of all general circulation model available for IPCC (2013).

		RCP2.6	RCP4.5	RCP6.0	RCP8.5	RCP2.6	RCP4.5	RCP6.0	RCP8.5
	Area	Change				Decrease			
	km ²	mean \pm SD							
		% century ⁻¹				% of area			
United States									
Contiguous 48 states	7.8 x 10 ⁶	5 \pm 8	5 \pm 25	6 \pm 20	7 \pm 24	0	12	16	19
Alaska	1.5 x 10 ⁶	11 \pm 7	17 \pm 8	18 \pm 9	31 \pm 11	0	0	0	0
Hawaii	1.7 x 10 ⁴	1 \pm 196	1 \pm 65	3 \pm 42	10 \pm 56	6	31	0	0
Puerto Rico, Virgin Is.	9.3 x 10 ³	0.1 \pm 11	-10 \pm 20	-9 \pm 21	-23 \pm 26	44	100	100	100
Guam	560	6 \pm 15	9 \pm 21	10 \pm 18	19 \pm 32	0	0	0	0
American Samoa	160	-1 \pm 17	1 \pm 18	-1 \pm 22	3 \pm 25	100	0	100	0
Total	9.3 x 10 ⁶	6 \pm 8	7 \pm 22	8 \pm 18	11 \pm 22	<1	10	13	16
National Park System									
Contiguous 48 states	1.3 x 10 ⁵	6 \pm 8	5 \pm 24	6 \pm 24	7 \pm 17	0	4	8	14
Alaska	2.2 x 10 ⁵	11 \pm 7	17 \pm 7	17 \pm 9	30 \pm 11	0	0	0	0
Hawaii	1.8 x 10 ³	1 \pm 256	3 \pm 76	3 \pm 41	12 \pm 51	4	7	0	0
Puerto Rico, Virgin Is.	39	-0.1 \pm 10	-10 \pm 20	-8 \pm 21	-22 \pm 25	67	100	100	100
Guam	5	6 \pm 15	9 \pm 21	10 \pm 18	19 \pm 32	0	0	0	0
American Samoa	14	-1 \pm 17	1 \pm 18	-1 \pm 22	3 \pm 24	100	0	100	0
Total	3.6 x 10 ⁵	9 \pm 9	13 \pm 14	13 \pm 14	21 \pm 14	<1	2	3	5