

Climate Change Summary, Brown v. Board of Education National Historic Site, Kansas

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Climate Trends for the Area within Park Boundaries

- Temperature and precipitation have increased since 1950 (Figures 1, 2), but the rates of change have not been statistically significant.
- If the world does not reduce emissions from cars, power plants, and deforestation by 40 to 70%, models project substantial warming and continued increases in precipitation (Figure 3).
- Under high emissions, the number of days with a maximum temperature $>35^{\circ}\text{C}$ (95°F.) may increase by up to 20 days per year by 2070 (Shafer et al. 2014).
- Under high emissions, the number of days with a minimum temperature $<0^{\circ}\text{C}$ (32°F.) may decrease by up to 40 days per year by 2070 (Shafer et al. 2014).
- Models project an increase in the frequency of heavy rainstorms (Shafer et al. 2014).

Table. Historical and projected changes (data Daly et al. 2008, IPCC 2013; analysis Wang et al. in preparation). The table only gives central values. Figures 1-3 show the uncertainties.

	1950-2010	2000-2050	2000-2100
Historical			
temperature	+0.4°C/century (+0.7°F./century)		
precipitation	+24%/century		
Projected (compared to 1971-2000)			
Low emissions (IPCC RCP 4.5)			
temperature		+2.3°C (+4.1°F.)	+3°C (+5.4°F.)
precipitation		+3%	+3%
High emissions (IPCC RCP 6.0)			
temperature		+1.9°C (+3.4°F.)	+3.4°C (+6.1°F.)
precipitation		+2%	+3%
Highest emissions (IPCC RCP 8.5)			
temperature		+2.9°C (+5.2°F.)	+5.2°C (+9.4°F.)
precipitation		+4%	+6%

Figure 1. Historical annual average temperature for the area within park boundaries and 1950-2010 trend. (Data: Daly et al. 2008, IPCC 2013. Analysis: Wang et al. in preparation, University of Wisconsin and U.S. National Park Service).

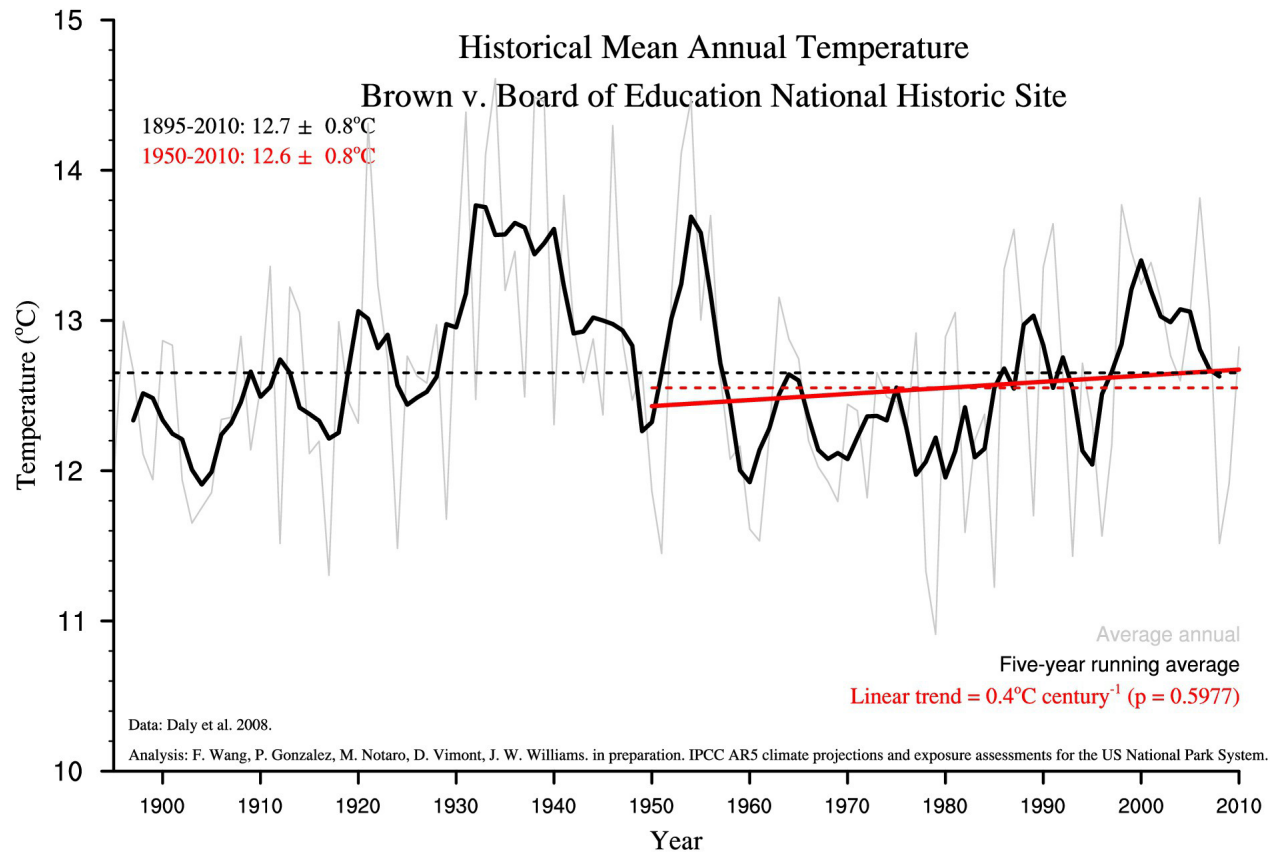


Figure 2. Historical annual total precipitation for the area within park boundaries and 1950-2010 trend. (Data: Daly et al. 2008, IPCC 2013. Analysis: Wang et al. in preparation, University of Wisconsin and U.S. National Park Service).

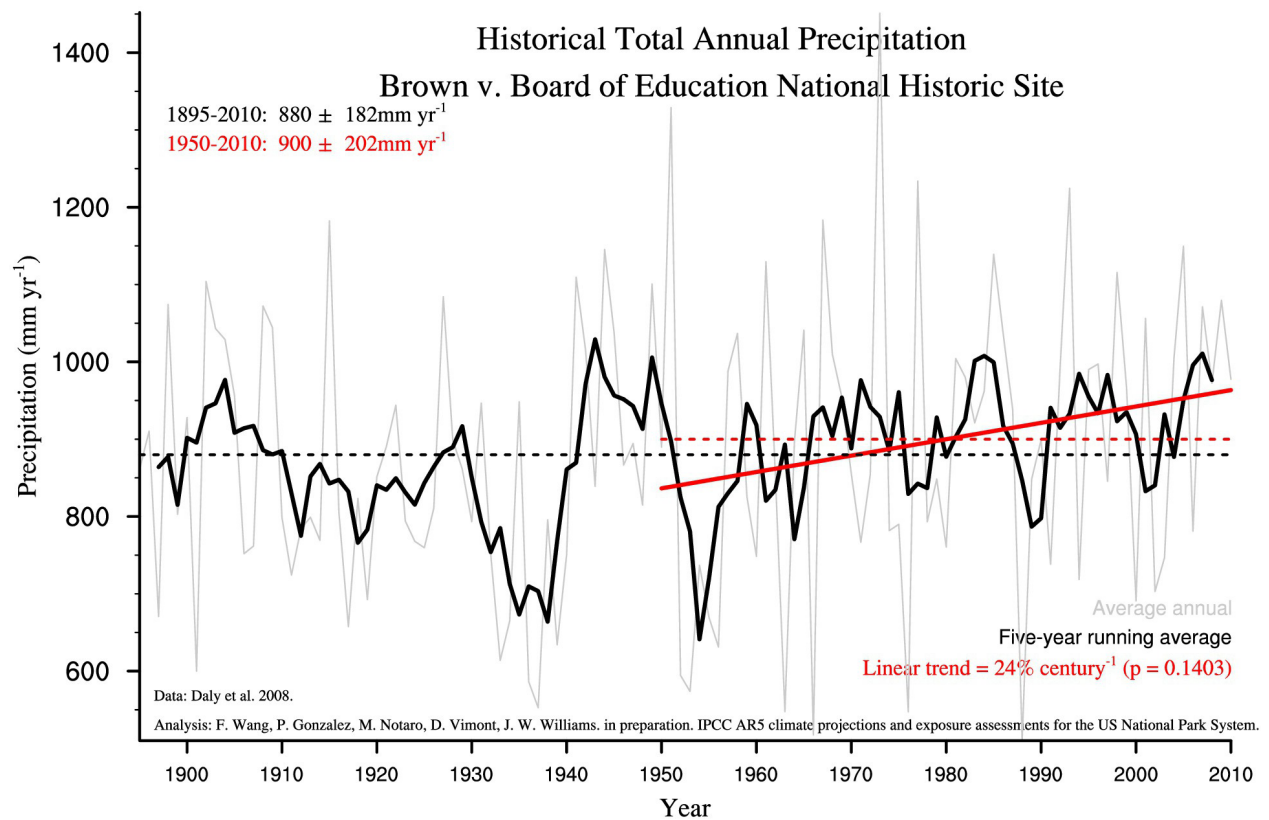
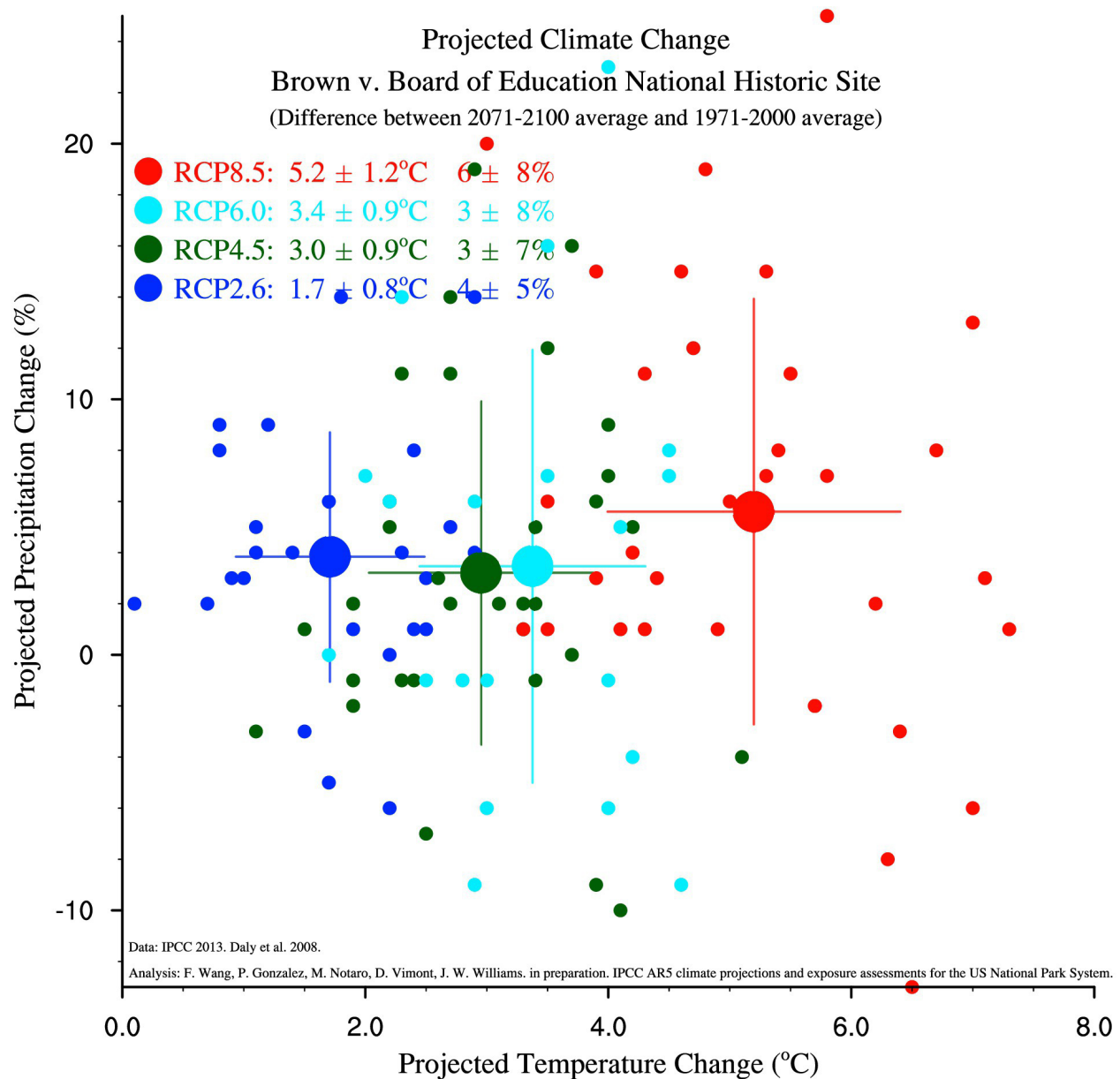


Figure 3. Projections of future climate for the area within park boundaries. Each small dot is the output of a single climate model. The large color dots are the average values for the four IPCC emissions scenarios. The lines are the standard deviations of each average value. (Data: IPCC 2013, Daly et al. 2008; Analysis: Wang et al. in preparation, University of Wisconsin and U.S. National Park Service).



References

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