Maximum regional US temperatures projected by NOAA at increasing degrees of global warming highlighting maximum crop tolerance

Crops yields go into decline at 28°C, 30°C refers to drop below baseline.

These temperature increases do not include extreme heat events that increase in frequency, intensity and duration with global warming increase (IPCC AR5).

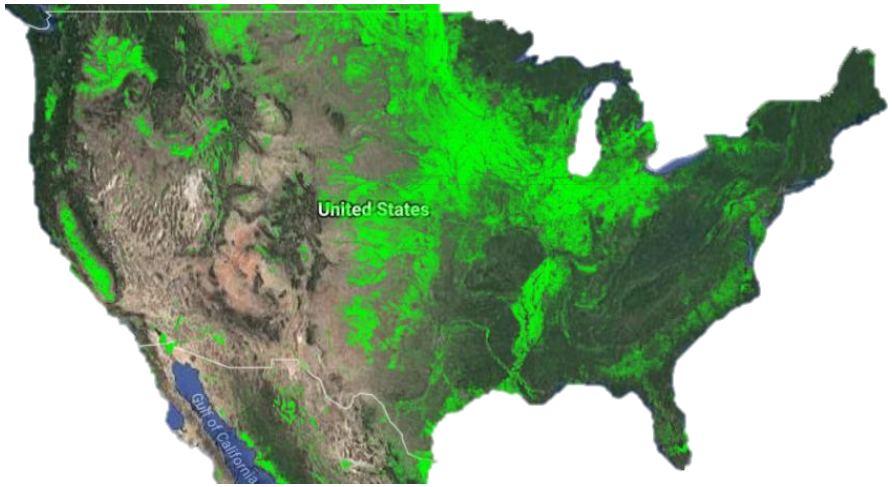
Crop temperature tolerance is only one of many adverse effects on crops of climate change

Peter Carter June 2018

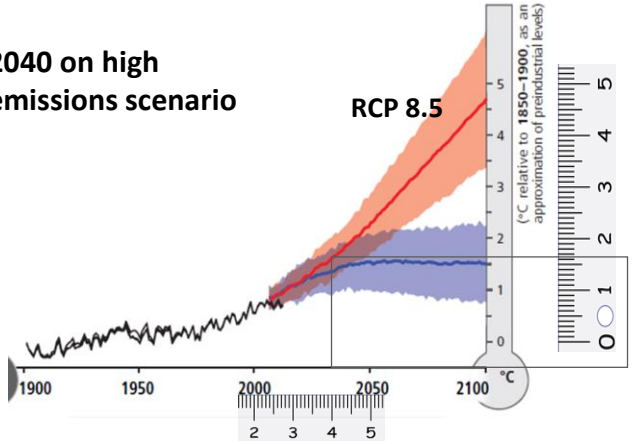
Maximum Temperatures in the USA at 1.6°C Global Warming

(does not include heat waves)

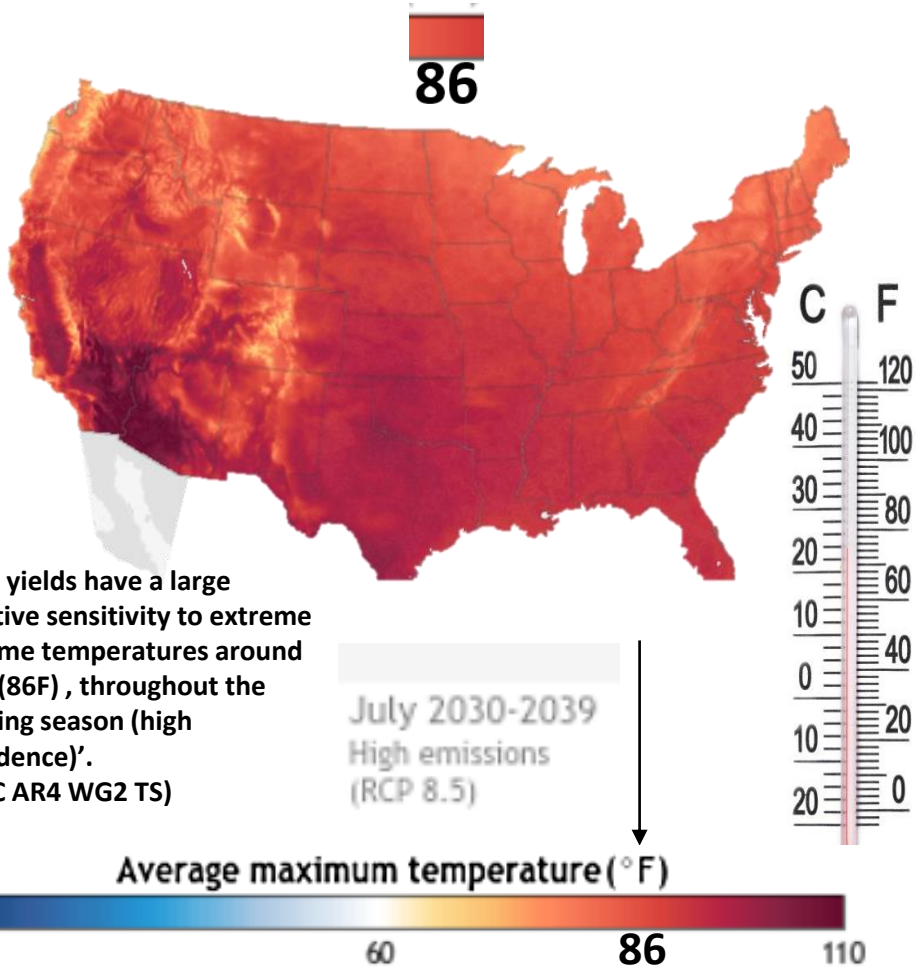
Absolute commitment by 2100



2040 on high emissions scenario



IPCC AR5 WG2 SPM Assessment Box SPM.1 Figure 1

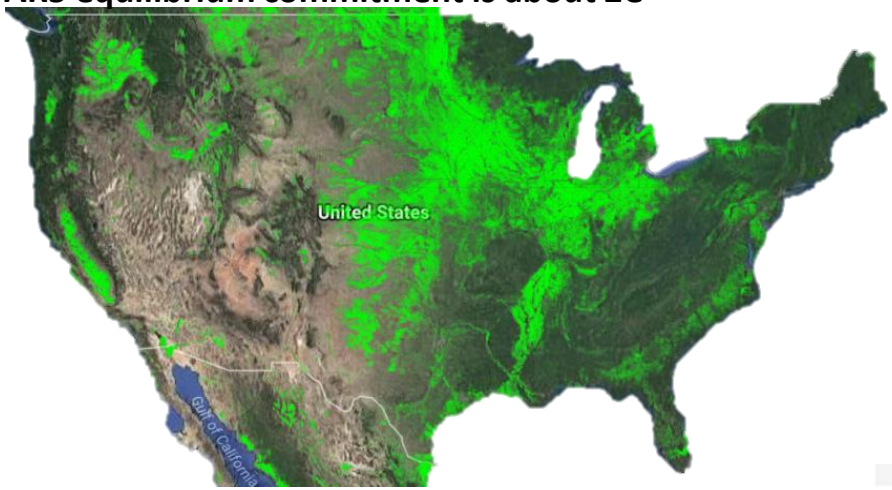


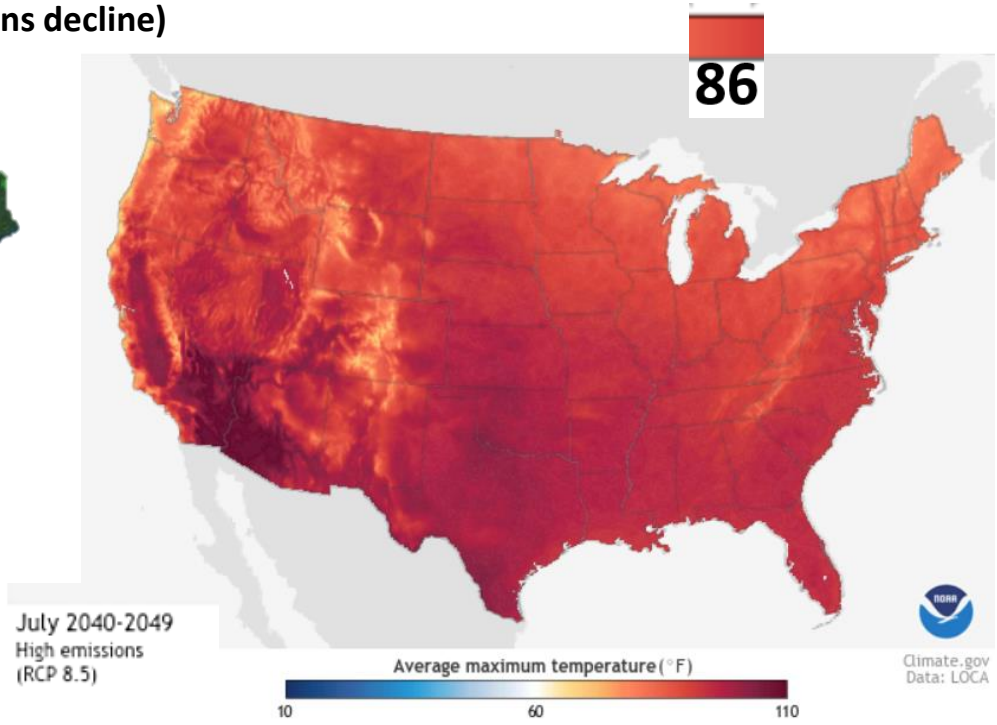
'Crop yields have a large negative sensitivity to extreme daytime temperatures around 30°C (86F) , throughout the growing season (high confidence)'.
(IPCC AR4 WG2 TS)

NOAA Climate Data Snapshots

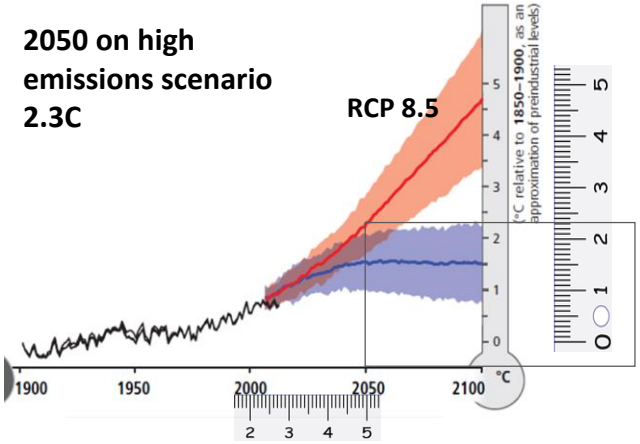
Maximum Temperatures in the USA at 2.3°C Global Warming (does not include heat waves)

Upper range of best RCP 2.6 (immediate global emissions decline)
Called a 'medium' scenario
AR5 equilibrium commitment is about 2C





2050 on high emissions scenario 2.3C



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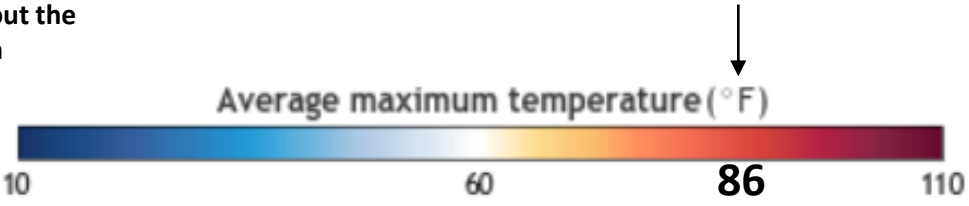
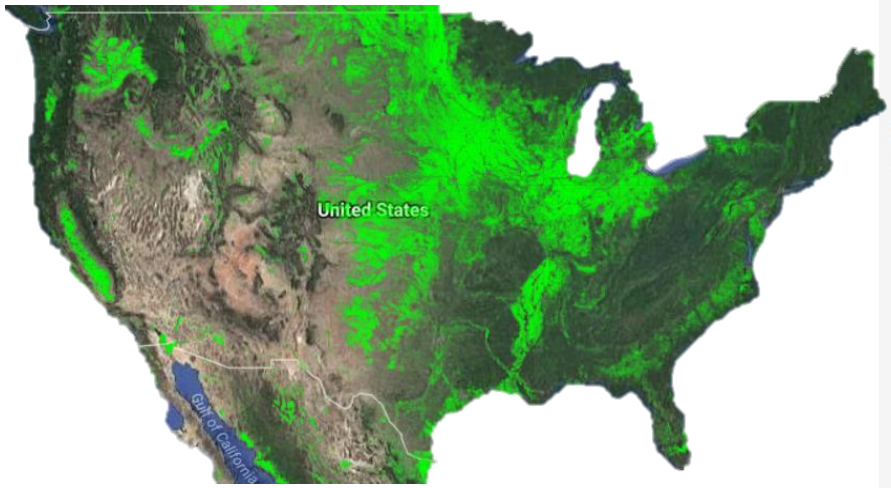
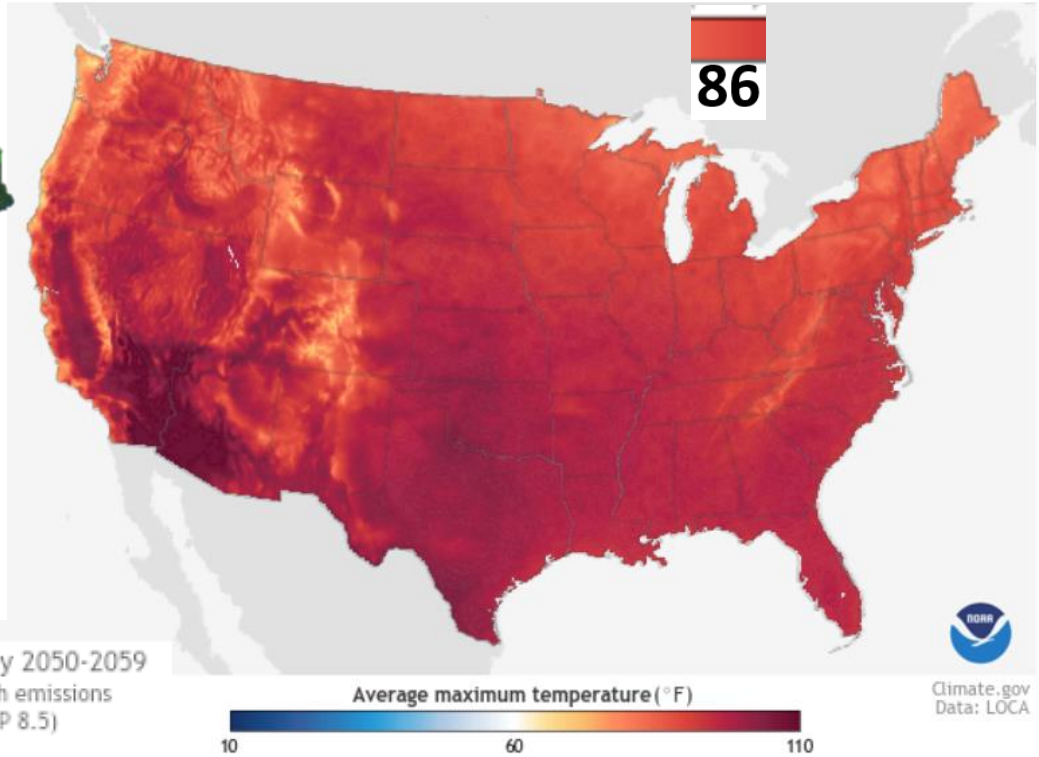
(IPCC AR4 WG2 TS)



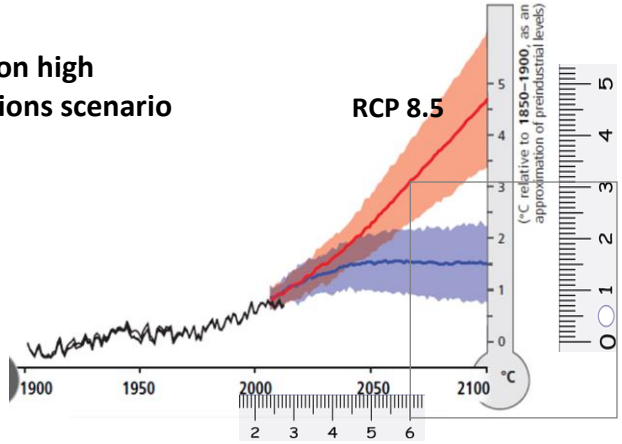
Maximum Temperatures in the USA at 3.1°C Global Warming

Combined national emissions targets (INDCs) by 2100

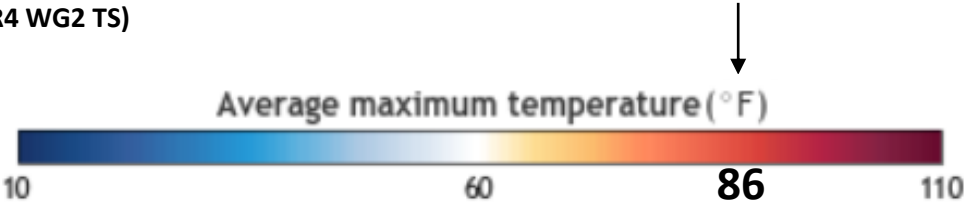




2060 on high emissions scenario 3.1C

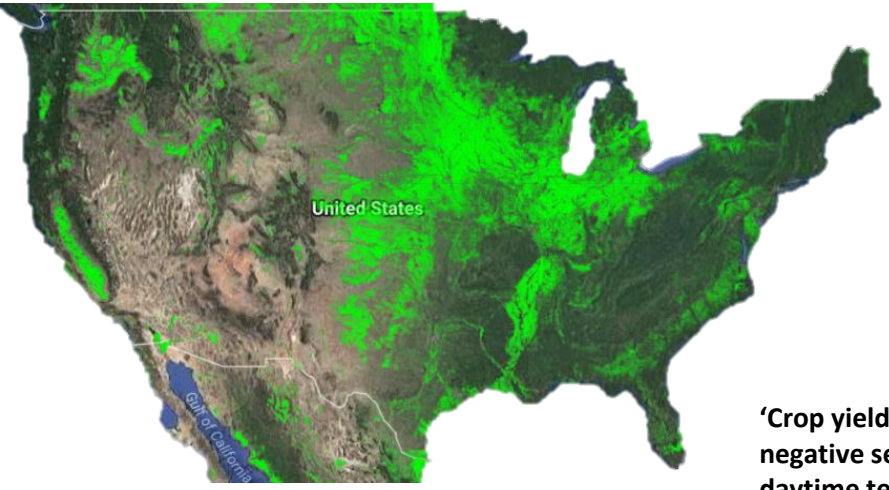


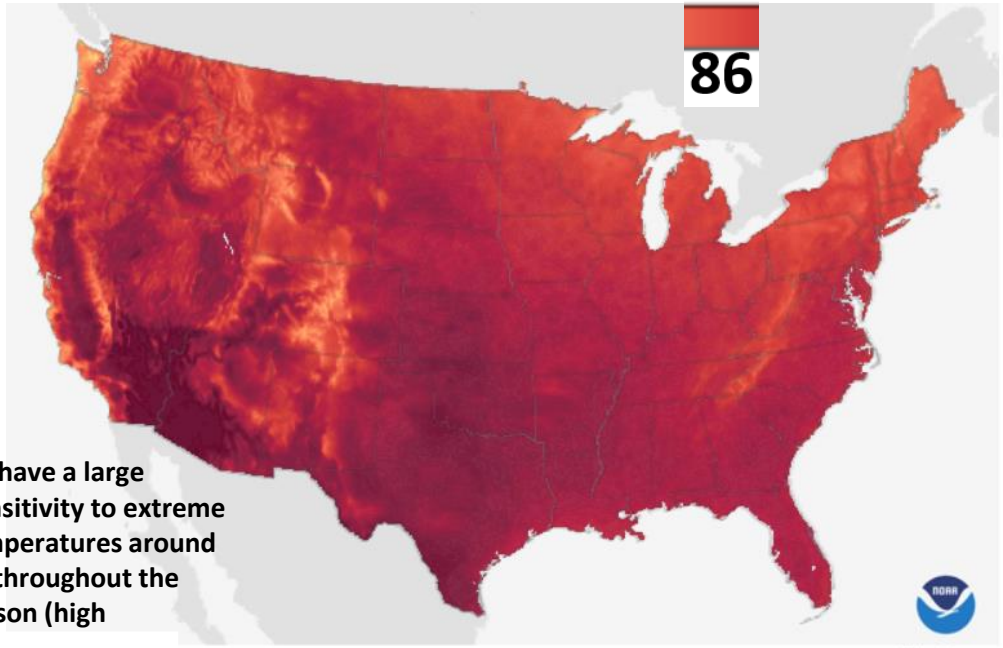
'Crop yields have a large negative sensitivity to extreme daytime temperatures around 30°C (86F) , throughout the growing season (high confidence)'.
(IPCC AR4 WG2 TS)



Maximum Temperatures in the USA at 3.9°C Global Warming

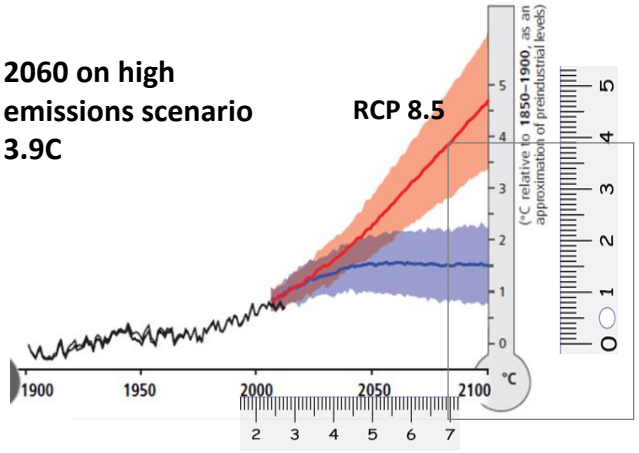
Upper range of INDCs by 2100
Current global emissions track by 2100





'Crop yields have a large negative sensitivity to extreme daytime temperatures around 30°C (86F) , throughout the growing season (high confidence)'.
(IPCC AR4 WG2 TS)

2060 on high emissions scenario 3.9C



2017 Global Fossil Fuel Emissions
On the Increase Again
Near the Worst-Case Scenario