









# Extreme events

## Climate change impacts



Climate change worsens nearly all types of extreme weather and climate events, by increasing the frequency, intensity, and/or duration, and ultimately the damage caused by the event.

		Connection to climate change	Already observed changes	Anticipated future changes	Impacts to society
HEAT WAVES		Stalled air patterns & hotter temps make heat waves more likely/intense/longer-lasting	Heat waves becoming increasingly likely to occur, more frequent, and longer lasting	Very likely that heat waves will be more intense, more frequent, and last longer	Heat stress & unhealthy air, especially for outdoor workers & people without homes
DROUGHTS		Hot temps dry out land via increased evaporation, stalled systems can deflect storms	Many droughts worldwide have been made more likely or intense, e.g. in US & Africa	Longer dry periods in semi-arid regions, extreme drought as "normal," megadroughts	Crop loss, water insecurity & poor quality, exacerbate poverty, hunger
WILDFIRES		Creates ideal conditions for fires: hotter, drier, expanding growing season, earlier snow melt	Wildfire season is lasting longer and burning larger areas; dozens of fires linked to climate change	Longer season, larger fires, more acres burned	Dangerous air quality & severe property damage
SEVERE STORMS		More moisture in atmosphere provides energy for storms and increases atmos instability	More severe thunderstorm conditions, hail days, tornado outbreaks	Potentially more severe thunderstorms, increased tornado frequency/intensity	Property damage, dangerous road conditions, toxic spills & releases
FLOODING		More moisture in atmosphere leads to more rainfall, stalled storms dump more rain in area	Increase in frequency & intensity of heavy precipitation events globally and in US	Extreme rainfall events more frequent and intense over mid-lats & wet tropics	Damaged property, most severely to Black communities due to historical discrimination
HURRICANES		Warm air & water fuels, shifting air patterns slows, sea level rise worsens surge	Stronger, wetter, slower, shifting poleward, more rapidly intensify	Increase in storm intensity, more Cat 4/5 storms in Atlantic, western N. Pacific	Extensive damage, severely impacting low-wealth communities
WINTER STORMS		More moisture in atmosphere can cause more snowfall if temps below freezing	Increase in frequency/intensity in US, with slight shift in tracks toward poles	Increase in winter storms over eastern US	Industrial shutdowns, power outages, dangerous road conditions
FREEZES		Arctic warming may weaken jet stream: cold air south, early spring before last freeze	Shorter and rarer, less severe	Decrease in cold wave frequency/intensity, concern of early spring frost damage	Severe crop damages & disturbed ecosystem life cycles

For sources of information, please visit: [www.edf.org/climateimpactsources](http://www.edf.org/climateimpactsources)  
 \*Anticipated future changes are for scenarios without climate action



## COSTS

- Four-fold increase in number of billion dollar weather/climate disasters in US since the 1980s (from around 3 to around 12 per year)
- Nearly five-fold increase in cost of weather/climate disasters in US since 1980s (from around \$17B to \$84B)