Common regional changes

- **Observed** warming *(high confidence)* in the Small Islands\(^1\) has been attributed to human influence *(medium confidence)*. Warming will continue in the 21st century for all global warming levels and future emissions scenarios, further increasing heat extremes and heat stress *(high confidence)*.

- Ocean acidification has increased globally as have the frequency and intensity of marine heatwaves in some areas of the Indian, Atlantic and Pacific Oceans except for a decrease over the eastern Pacific Ocean. Marine heatwaves and ocean acidification will increase further with 1.5°C of global warming *(high confidence)* and with larger increases at 2°C and higher.

- Sea levels will *very likely* continue to rise around Small Islands, more so with higher emissions and over longer time periods *(high confidence)*.

- Sea level rise coupled with storm surges and waves will exacerbate coastal inundation and the potential for increased saltwater intrusion into aquifers *(high confidence)*.

- Sea level rise will cause shorelines to retreat along sandy coasts of most Small Islands.

- Small Islands will face more intense but generally fewer tropical cyclones, except in the central north Pacific where frequency will increase *(medium confidence)* at a global warming level of 2°C and above.

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Relative sea level rise projections for 2080–2100 (SSP3-7.0) relative to 1995–2014

Regional mean changes in annual sea level in the near-term (2021–2040) and long-term (2081–2100) for three scenarios (SSP1-2.6, SSP2-4.5, and SSP5-8.5) relative to 1995-2014 for some Small Island Regions. Bar plots indicate median (dots) and 10th–90th percentile range (bars) across each model ensemble.

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\(^1\) The WGI AR6 assessment focused primarily on Small Islands in the Caribbean Sea (CAR), Pacific Ocean (PAC) and Western Indian Ocean (WIO).
Caribbean (CAR)
- Declining trend in rainfall during June–July–August in CAR will continue in coming decades (high confidence at 2°C global warming and above).
- Higher evapotranspiration under a warming climate will result in increased aridity and more severe agricultural and ecological droughts in CAR (medium confidence at global warming level of 2°C and above).

Western Indian Ocean (WIO)
- Declining trends in rainfall are observed in Western Indian Ocean islands over the past 50-60 years.

Pacific (PAC)
- Trends vary spatially and seasonally over Small Island regions in the Pacific. Rainfall has decreased in parts of the Pacific islands poleward of 20° latitude in both hemispheres (eastern Pacific and southern Pacific subtropics). This drying trend will continue in the coming decades, except in parts of western and equatorial Pacific.
- Heavy rainfall events will increase in the western tropical Pacific (high confidence at 2°C global warming and above).
- Higher evapotranspiration under a warming climate either amplifies or partially offsets, respectively, the effect of decreases or increases in rainfall resulting in increased aridity in parts of the Pacific (medium confidence at 2°C global warming and above).

Climate information for Small Islands
Though it is clear the climate of Small Islands has and will continue to change in diverse ways, constructing climate information for Small Islands is challenging due to lack of observations and high-resolution climate projections, as well as the representation and understanding of key modes of variability and their interplay with trends.

Links for further details
Common regional changes: Table 11.13, 12.4, 12.4.7, Atlas.10, TS.4.3.1, TS.4.3.2.7
Caribbean: Table 11.14, Table 11.15, 12.4.7, Atlas.10, Cross-Chapter Box Atlas.2
Western Indian Ocean: 12.4.7, Atlas.10, Cross-Chapter Box Atlas.2
Pacific: 12.4.7, Atlas.10, Cross-Chapter Box Atlas.2
Climate information for Small Islands: Cross-Chapter Box Atlas.2