

## Global sea-level rise

Global sea levels are rising due to climate change. There are several processes that cause global sea-level rise:

1. Thermal expansion: oceans absorb trapped heat in the atmosphere and expand when they get warmer.
2. Melting ice sheets: due to the warming atmosphere and ocean the Antarctic and Greenland ice sheets are melting adding water into the oceans.
3. Receding glaciers: glaciers melting faster than snowfall can replenish them also add water into the oceans.
4. Land water storage: water can be removed from the land (groundwater pumping) or impounded on land (dam building) which can cause a change in the amount of water that reaches the ocean.

### Total sea-level change:

Increasing	
Stays the same	
Decreasing	

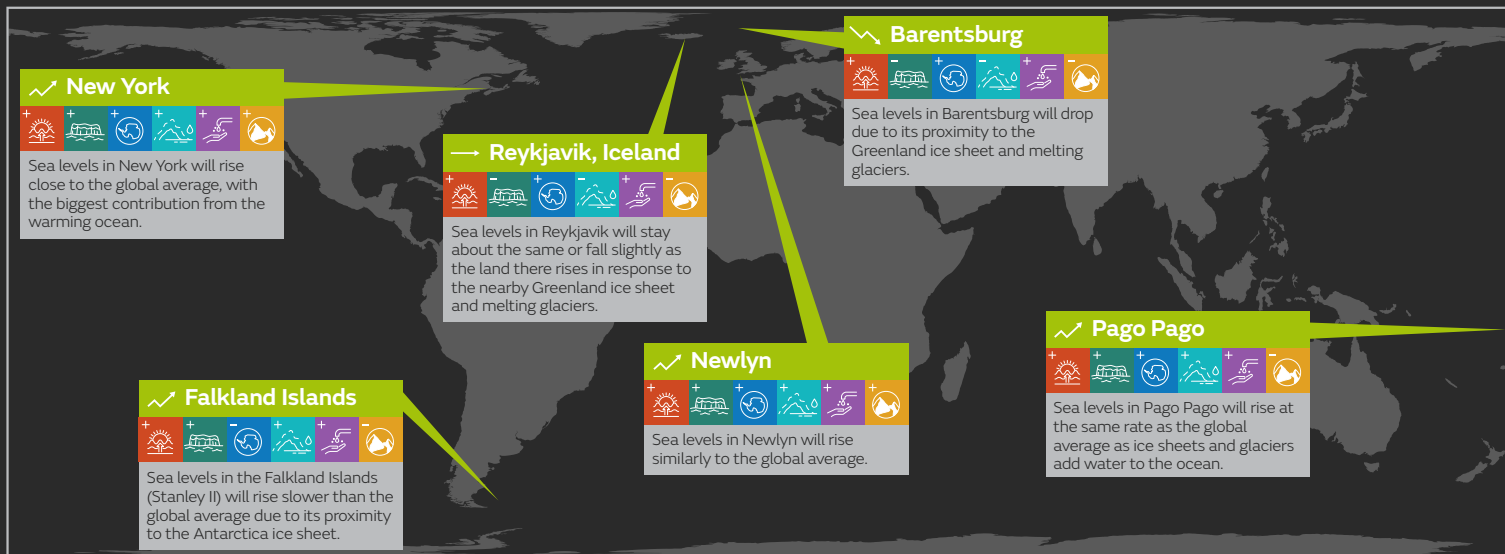
### Sea level processes:

Thermal expansion	
Greenland	
Antarctica	
Glaciers	
Land water storage	
Glacial isostatic adjustment	

## Regional sea-level change

Sea levels do not change uniformly around the world. There are several processes that cause regional sea-level change:

1. Glacial isostatic adjustment: the land is slowly rising and falling in different parts of the world in response to the removal of ice after the last ice age.
2. Ocean density: local changes in the ocean circulation, temperature, and salinity affect the height of the sea surface.
3. Melting ice sheets, receding glaciers and land-water interact with Earth's gravity field, rotation, and shape of the ocean floor (GRD) affecting regional sea level change.



Scan the QR code to learn more about local and global drivers of sea-level change



Scan the QR code to learn more about IPCC's Sixth Assessment Report (AR6)



Scan the QR code to learn more about UKCP18 sea-level projections

Produced by the Met Office.  
Met Office and the Met Office logo are registered trademarks.  
© Crown Copyright 2023, Met Office 02274