OCR
Oxford Cambridge and RSA

Wednesday 1 December 2021 – Morning

GCSE (9–1) Geography A (Geographical Themes)

J383/03 Geographical Skills

Resource Booklet

Time allowed: 1 hour 20 minutes

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INSTRUCTIONS
- Do **not** send this Resource Booklet for marking. Keep it in the centre or recycle it.

INFORMATION
- This document has **12** pages.

Fig. 1 Adapted news article about an El Niño weather event

El Niño: 75% chance of extreme weather phenomenon in next three months

Experts have warned there is a 75% chance of an El Niño weather system forming within the next three months. This naturally-occurring weather event changes temperatures across the Pacific Ocean and drives extreme weather across the world.

Droughts and flooding are likely to follow as worldwide climate patterns are thrown into disarray for the first part of 2019. The most recent El Niño event ended in 2016, and was associated with catastrophic coral bleaching on the Great Barrier Reef off the Australian coast, as global temperatures reached the highest levels ever recorded. El Niño weather events can affect rainfall and temperature patterns in many regions, with important consequences for the farming industry and food security in many LIDCs.

Chances of dry conditions and drought will increase in nations from the Caribbean to southern Africa, while heavy rainfall will likely hit parts of the US and Europe. Under the most extreme conditions currently predicted, sea temperatures will rise up to 1.2 °C above average.

The Met Office has previously warned that El Niño could impact winter weather in the UK next year. “An El Niño could create wetter and windier conditions at the start of winter” a spokesperson said.

Fig. 2 Effect of El Niño weather event on world climate patterns

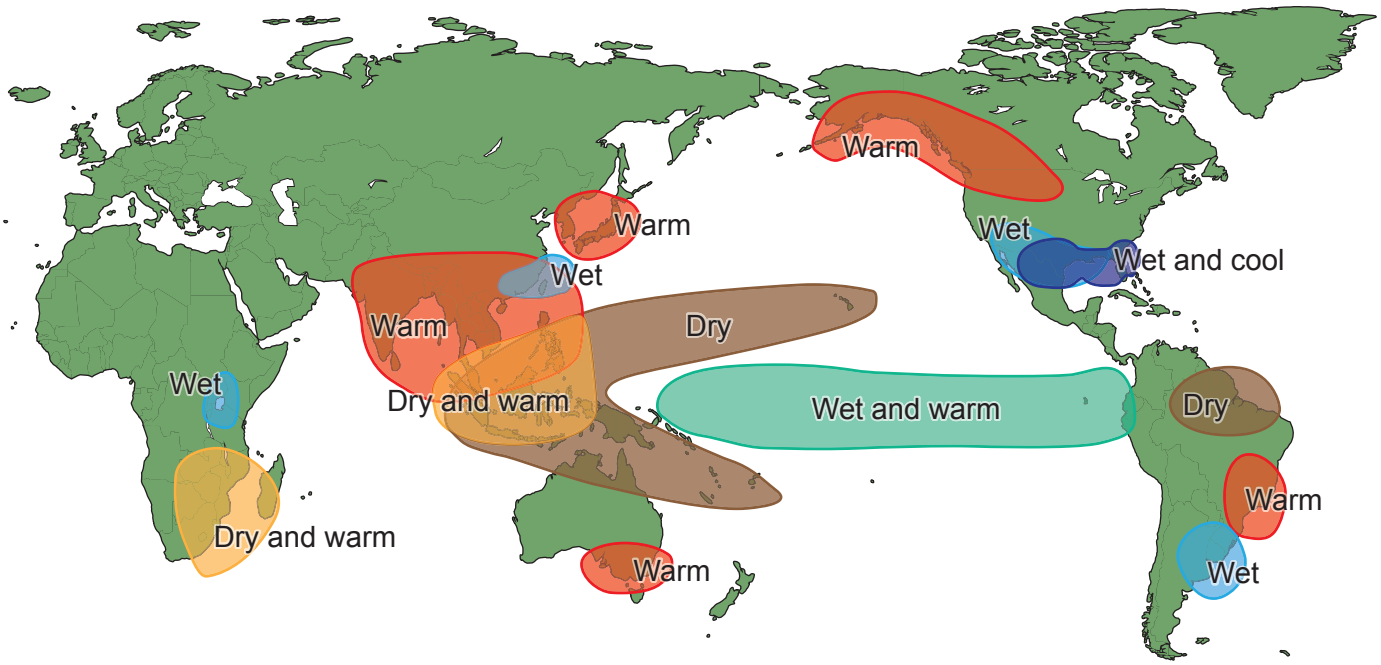


Fig. 3 River Flow in the UK, December 2018

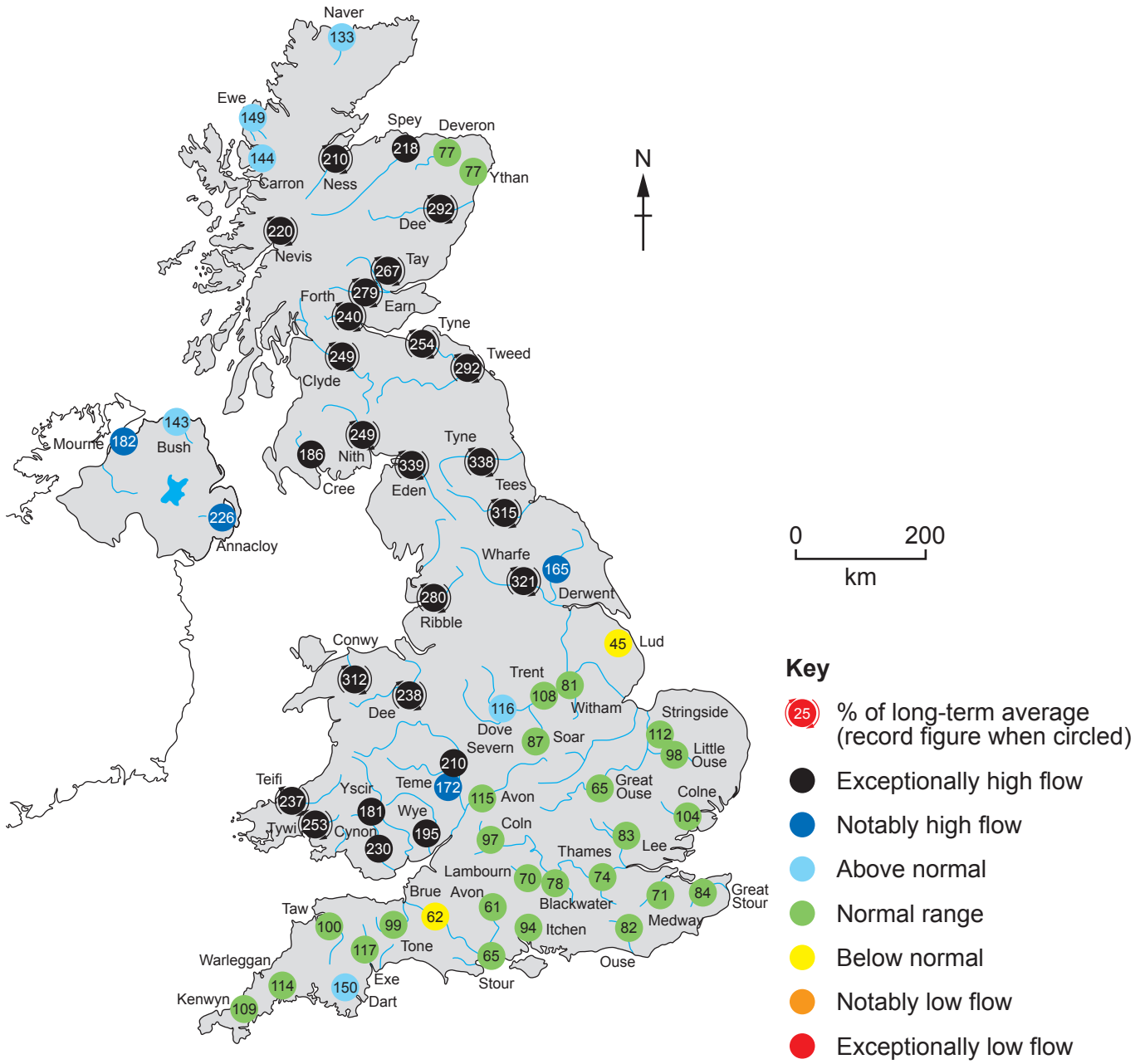


Fig. 4 Top twenty export destinations from Heathrow Airport, 2008

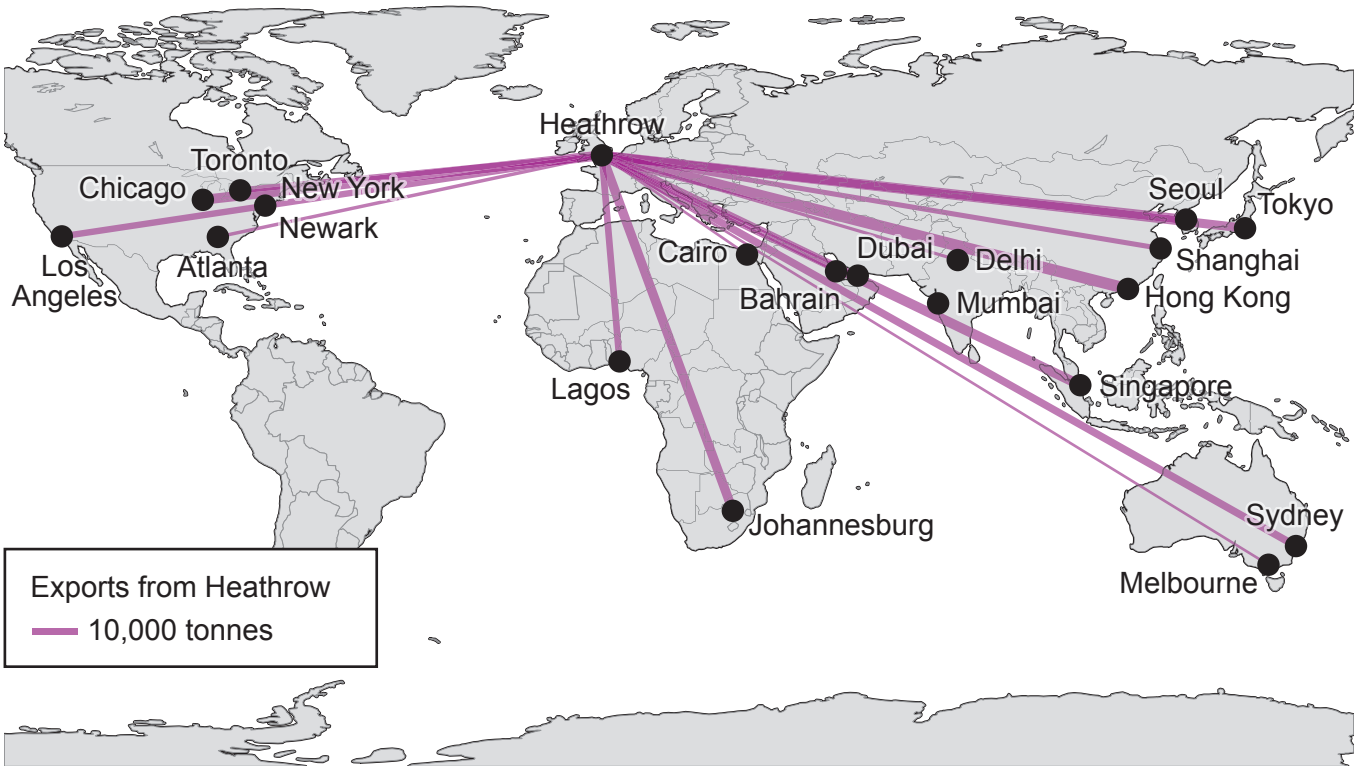


Fig. 5 Climate Graph for Isachen, Canada

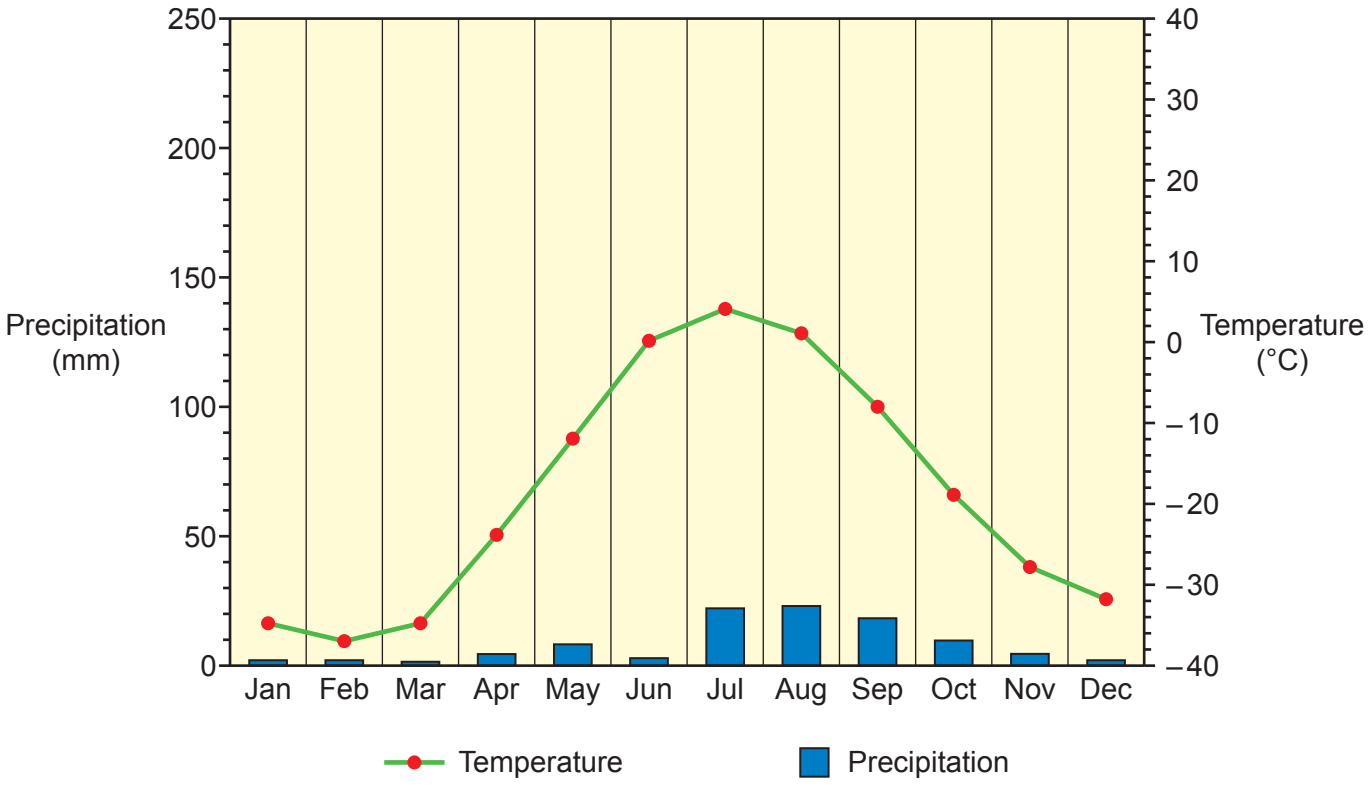
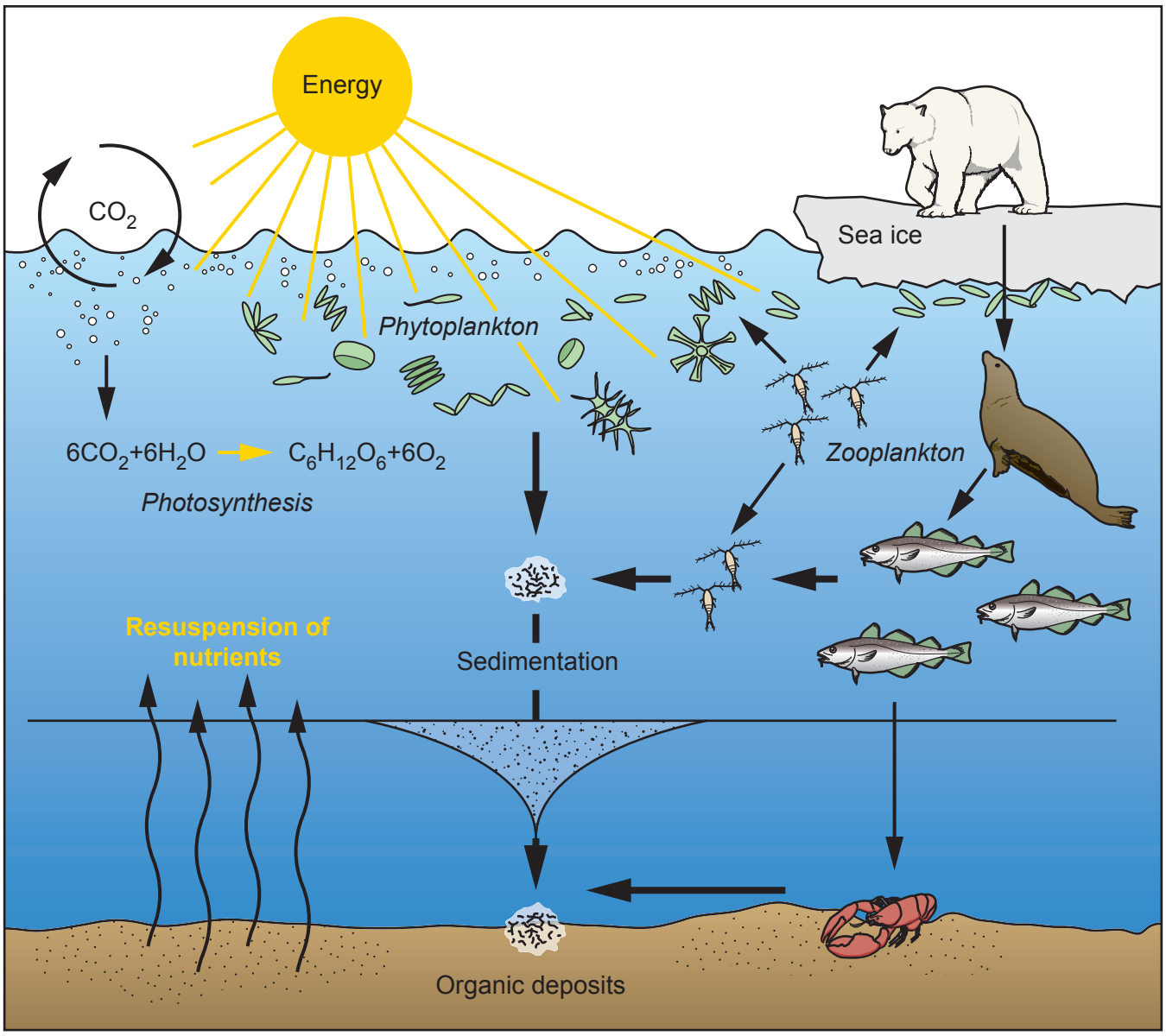


Fig. 6 The impact of climate change on polar ecosystems

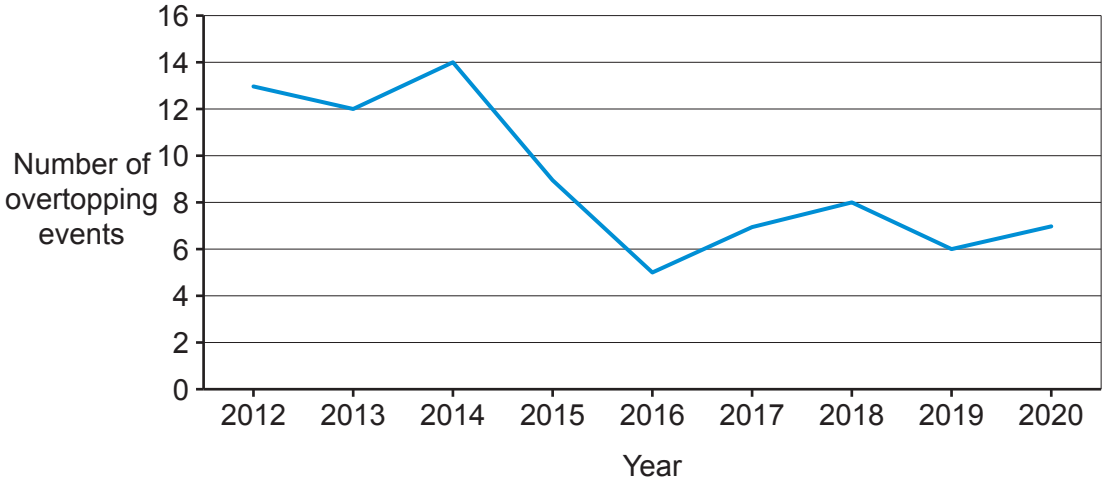


The impact of climate change on a particular species in a food web can go on to affect a wide range of other organisms. For example, the figure above shows the complex nature of the food web for polar bears. Not only is the decline of sea ice affecting polar bear populations by reducing the size of their primary habitat, it is also negatively impacting them by the effect on food webs. A decline in sea ice in the Arctic leads to declines in the abundance of ice algae. These algae are eaten by zooplankton, which are in turn eaten by Arctic cod, an important food source for many marine mammals, including seals. Seals are eaten by polar bears. Hence, declines in ice algae can contribute to declines in polar bear populations.

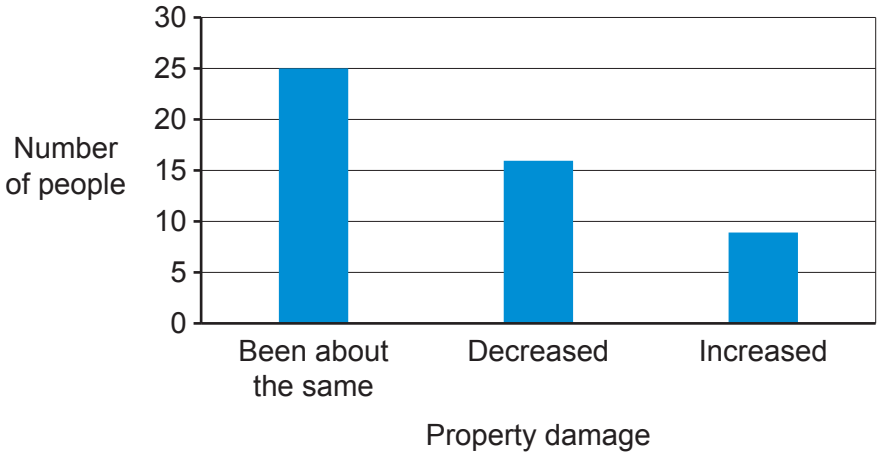
Fig. 7 Urban regeneration in a UK town centre

Fig. 8 Results of coastal fieldwork

Graph showing overtopping events (when sea water rises over the sea wall)



Question 1: Since the new coastal defence measures have been built, has damage to your property changed?



Student photo of new groynes

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