A-level GEOGRAPHY

Paper 1 Physical Geography

7037/1

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FIGURE 1

Changes in the terrestrial water system in response to human activity and climate change between 2012 and 2016

KEY

- Probable climate change impact
- Possible climate change impact
- Probable direct human impact
- Possible direct human impact
- Probable natural variability

Change in ice thickness / water level equivalent (cm/year)

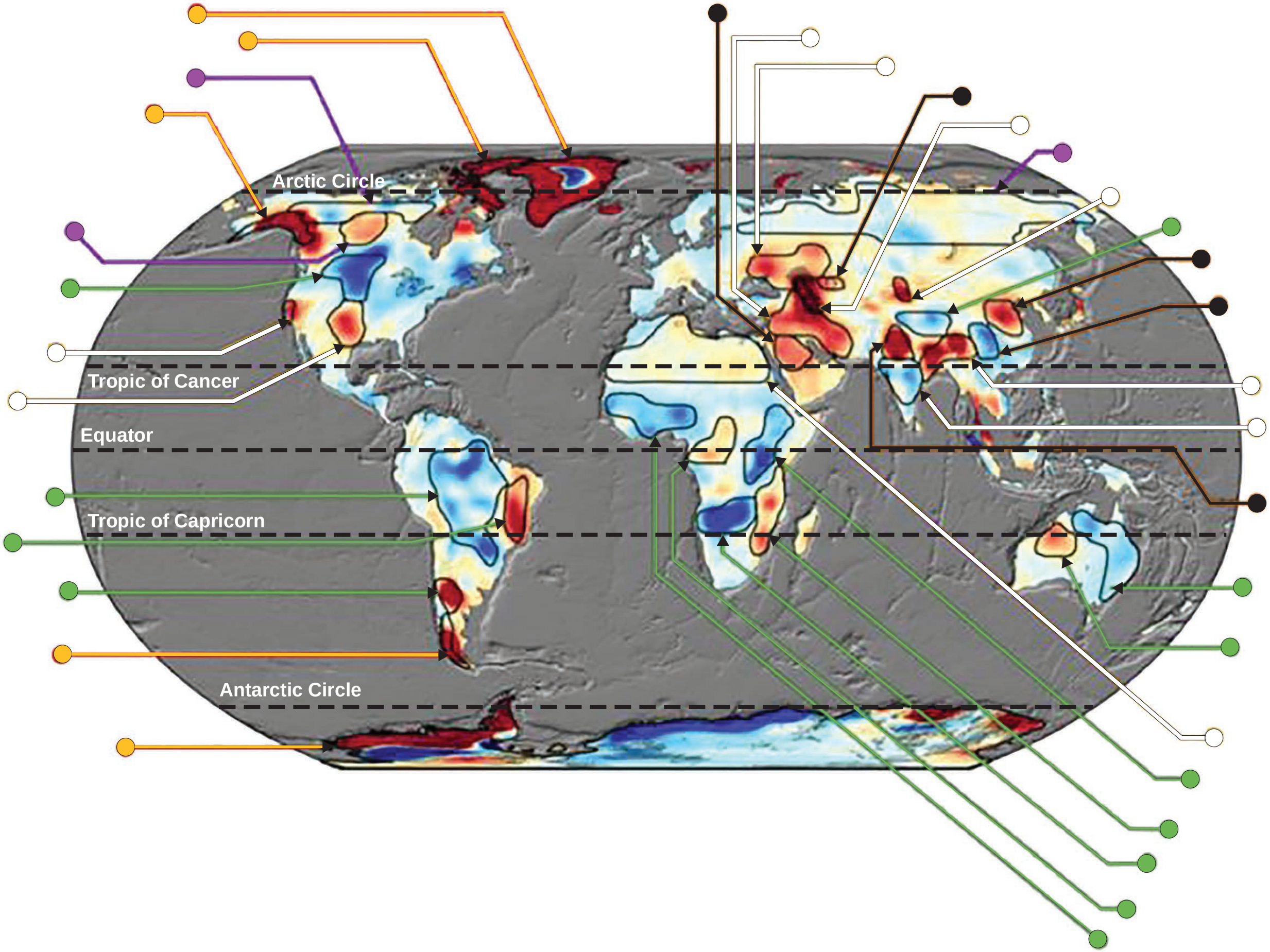
Arctic Circle
Tropic of Cancer
Equator
Tropic of Capricorn
Antarctic Circle

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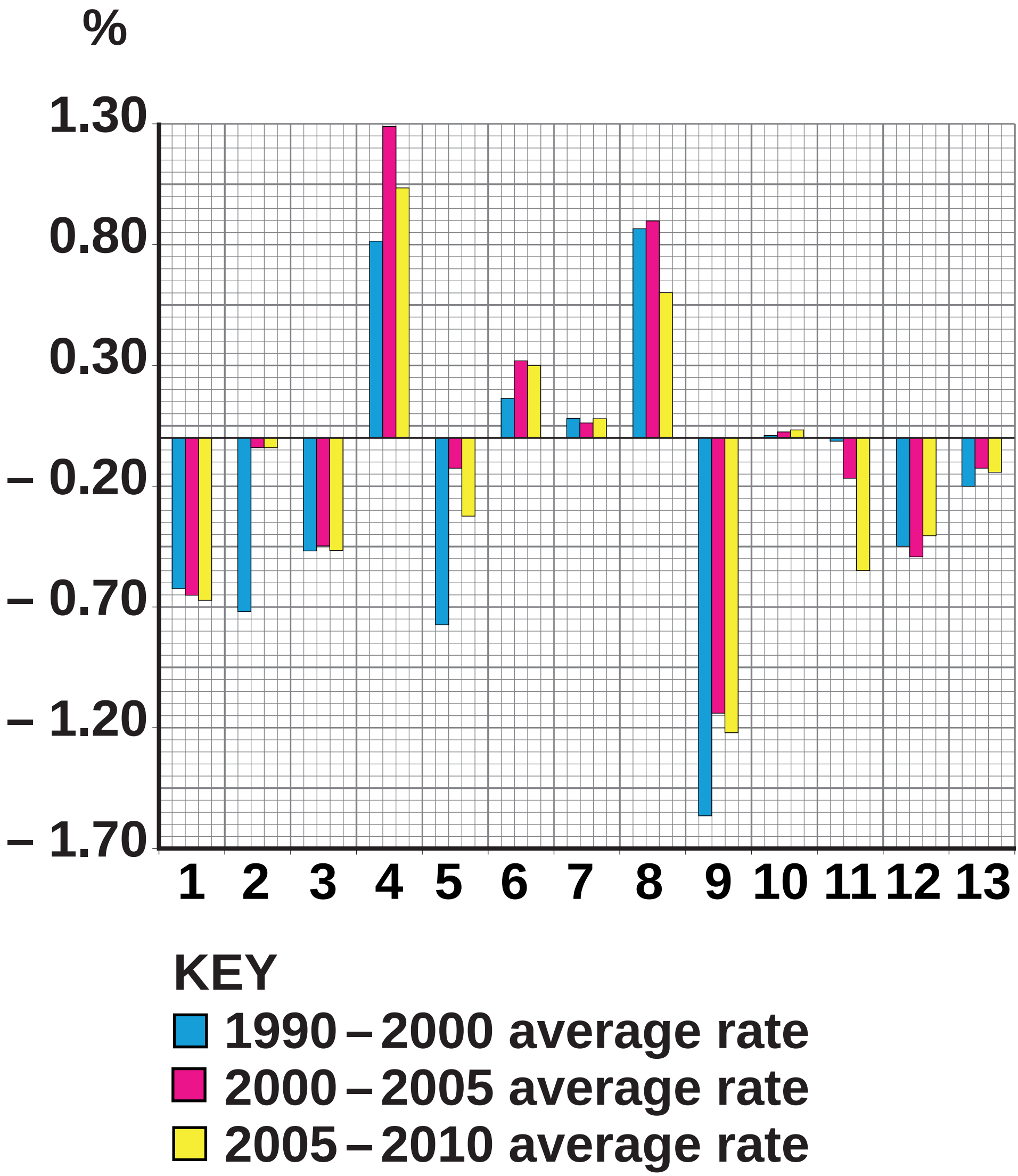
FIGURE 2

Regional changes in forest cover between 1990 and 2010



KEY

1 Eastern and Southern Africa
2 Northern Africa
3 Western and Central Africa
4 East Africa
5 South and South east Asia
6 Western and Central Asia
7 Europe
8 Caribbean
9 Central America
10 North America
11 Oceania
12 South America
13 World

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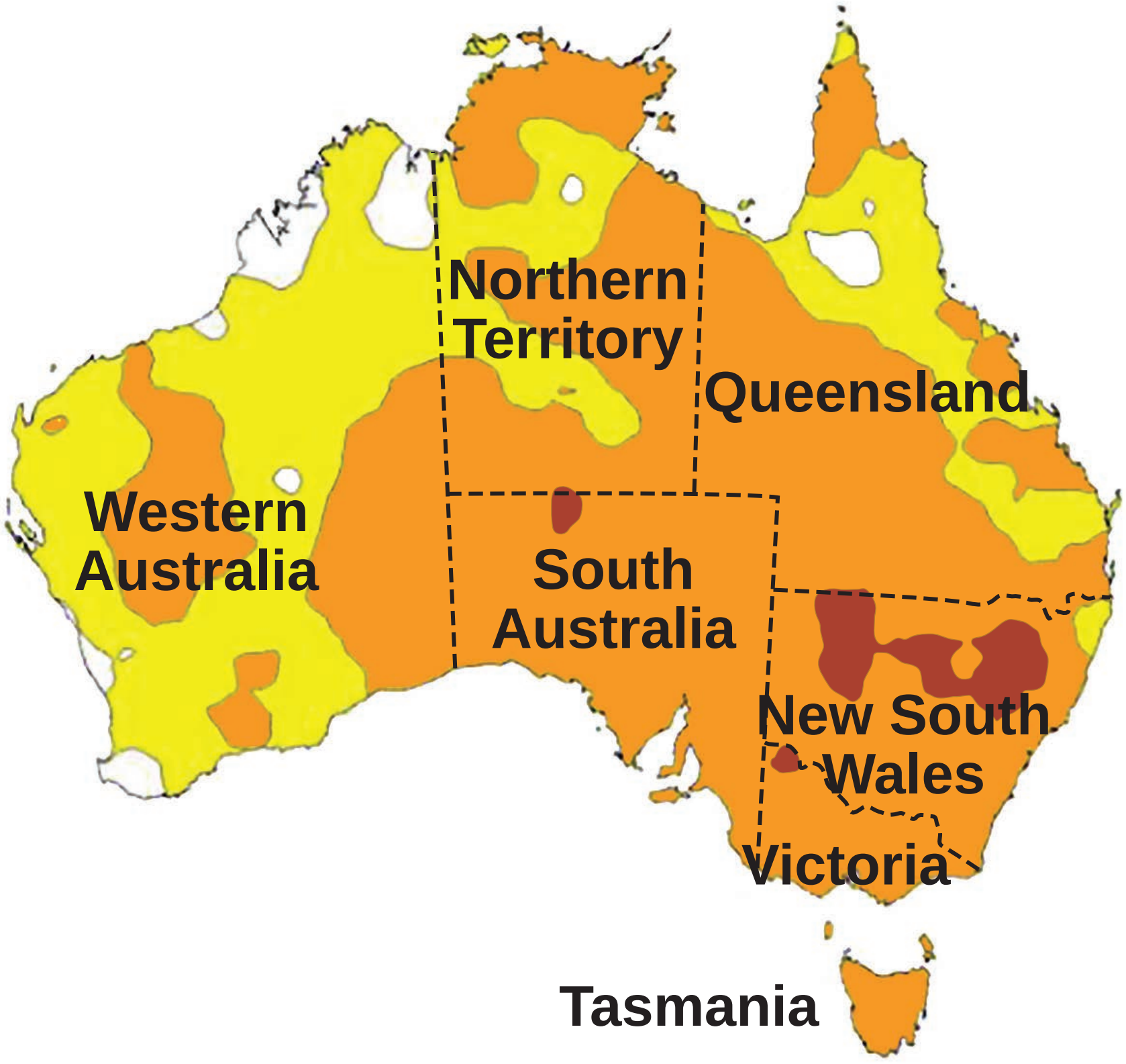
FIGURE 3a

Annual mean temperatures in Australia in 2018 compared to historical temperature observations



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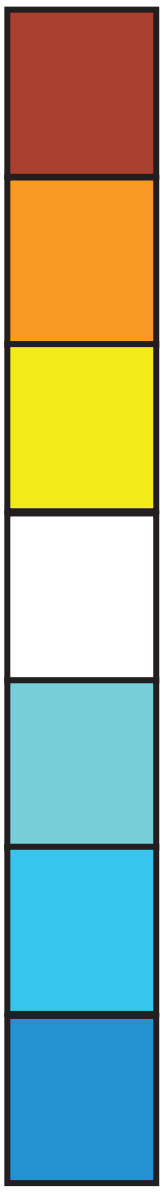
Temperature



Highest on record

Very much above average

Above average

Average

Below average

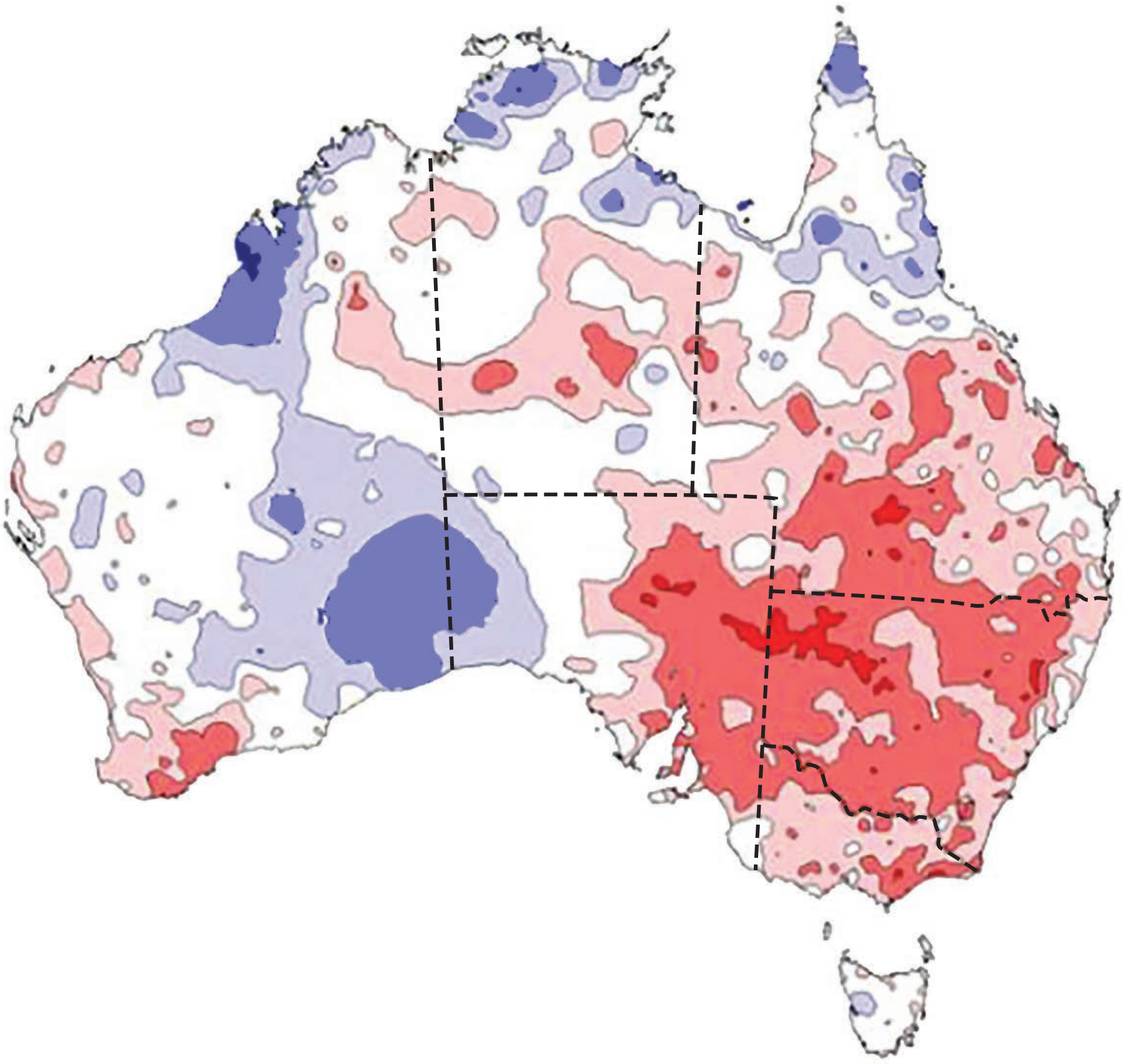
Very much below average

Lowest on record

[Turn over]

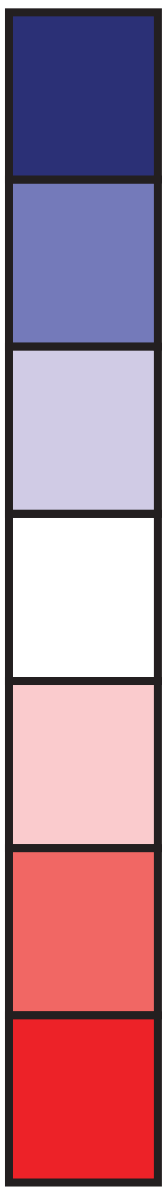
FIGURE 3b

Annual rainfall in Australia in 2018 compared to historical rainfall observations



KEY

Rainfall



Highest on record

Very much above average

Above average

Average

Below average

Very much below average

Lowest on record

[Turn over]

FIGURE 4

Note: The White Desert extends over 300 km^2 of the Egyptian Sahara Desert. Sedimentary rocks formed from oceanic deposition in an earlier geological era are now subject to hot desert conditions. Features such as those illustrated protrude above the landscape to give the White Desert its distinctive character. Mushroom-shaped formations can be as high as 4.5 metres.

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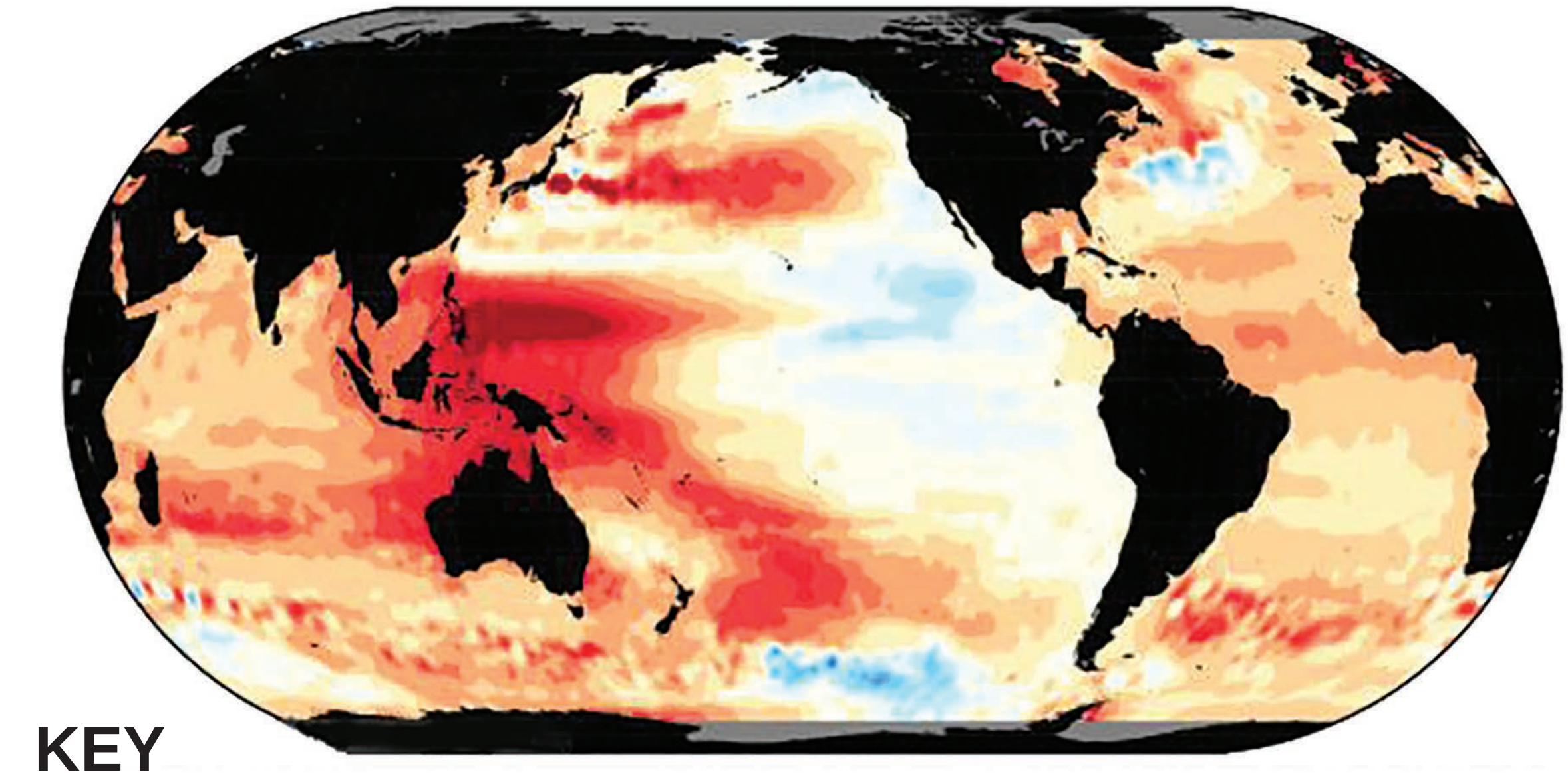
FIGURE 5a – Geographical variation in the 1992–2014 global sea level change using satellite data



KEY

−10 −8 −6 −4 −2 0 2 4 6 8 10

Sea level change (mm/yr)

FIGURE 5b – Geographical variation in the 1992–2019 global sea level change using another source of satellite data

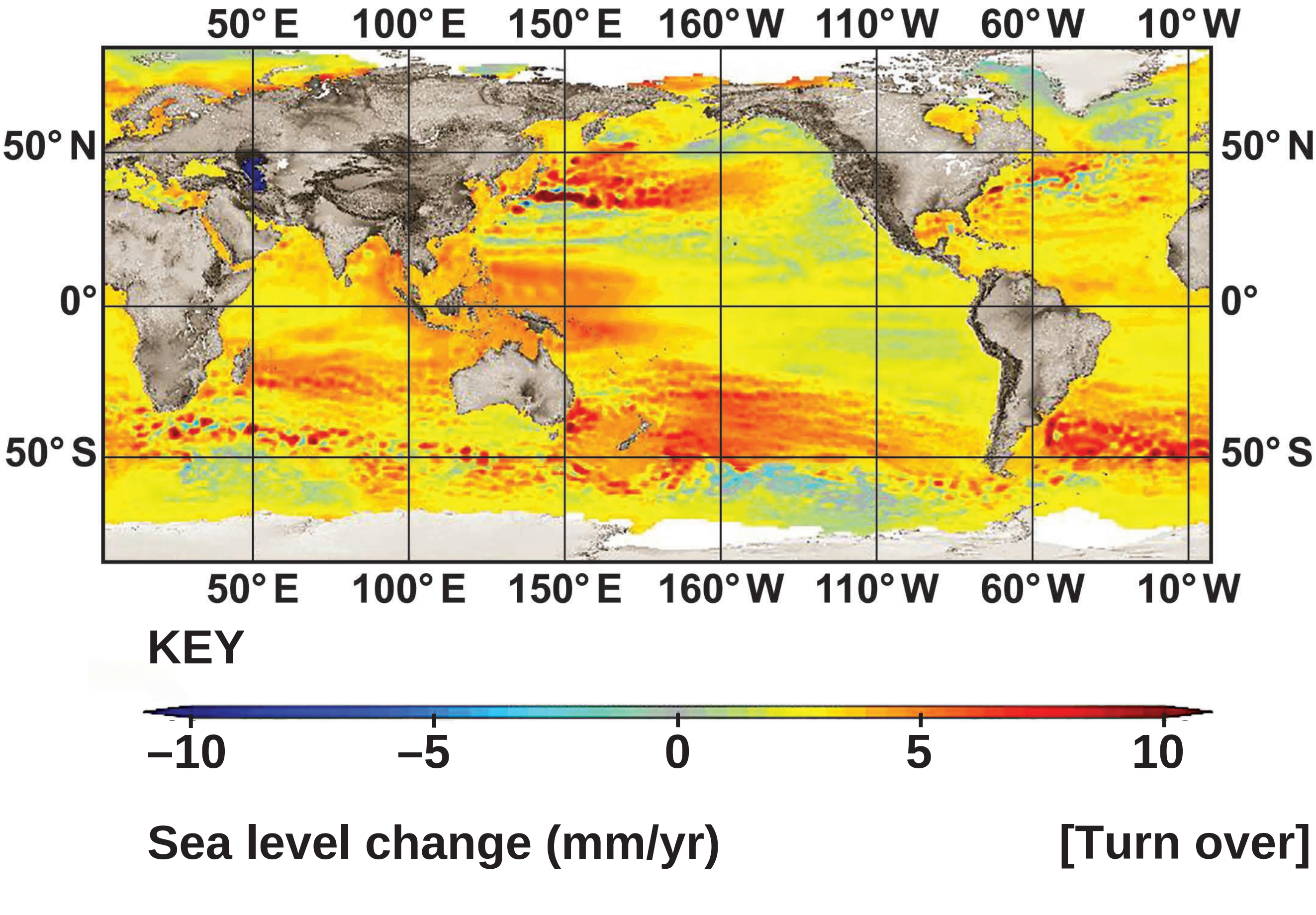


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FIGURE 6

Note: Runcorn lies about 25 kilometres from the sea on the south bank of the tidal estuary of the River Mersey where the tidal range can be as high as 9 metres. This particular photograph was taken at low tide looking towards the north bank of the estuary. The River Mersey ends its approximately 110 km course in this tidal estuary.

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FIGURE 7a

The distribution, size and type of selected Himalayan glaciers

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FIGURE 7b

The change in mass balance of the selected glaciers between 2000 and 2016

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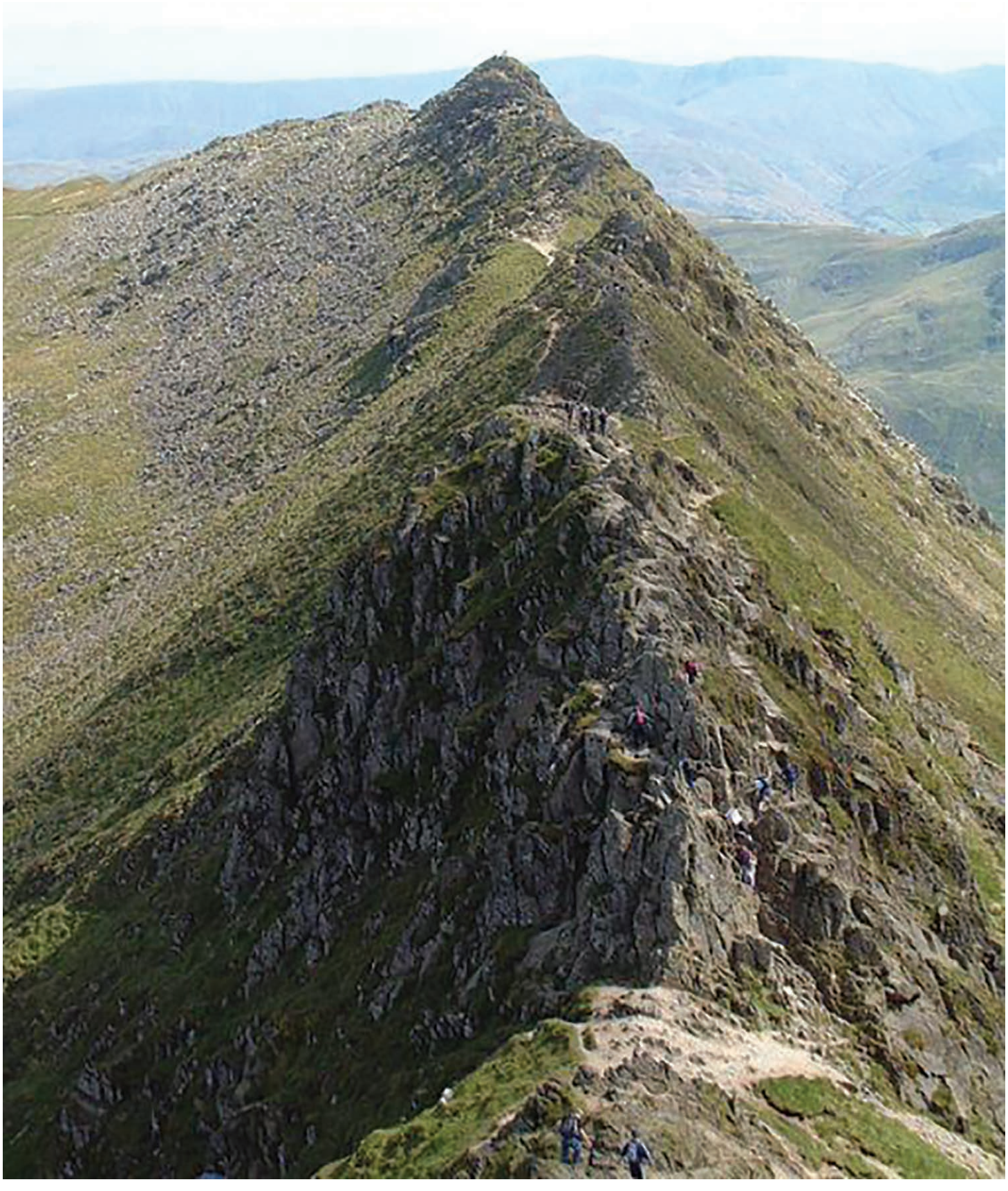
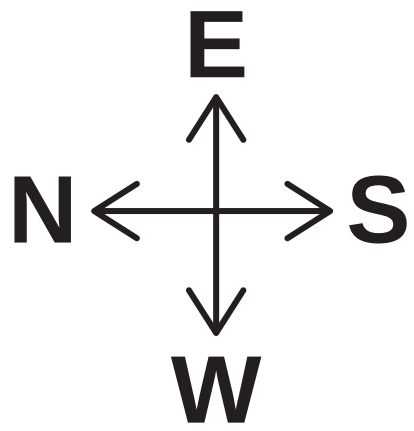
[Turn over]

FIGURE 8





Note: Striding Edge runs for several kilometres from Helvellyn Peak (950 metres) in the west towards Ullswater in the east. To the north is Red Tarn, a large corrie lake. The predominant rock type is igneous and dates back to a period of vulcanicity around 450 million years ago.

FIGURE 9

Responses by some companies and individuals to the Haiti earthquake, 2010

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FIGURES 10a, 10b and 10c

Data related to coastal flooding risk in Louisiana, USA, based upon a 2017 master plan. The information is based upon a 1 in 100 year extreme flood event.

FIGURE 10a

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Note: Louisiana is located on the southern coast of the United States of America. Tropical storms are regular occurrences in the area. The local geomorphology is a contributary factor to the hazard.

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FIGURE 10b

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[Turn over]

FIGURE 10c

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Note: In broad terms, social vulnerability refers to the characteristics of a person or group that influences their capacity to anticipate, cope with, resist, or recover from the impact of the flood event.

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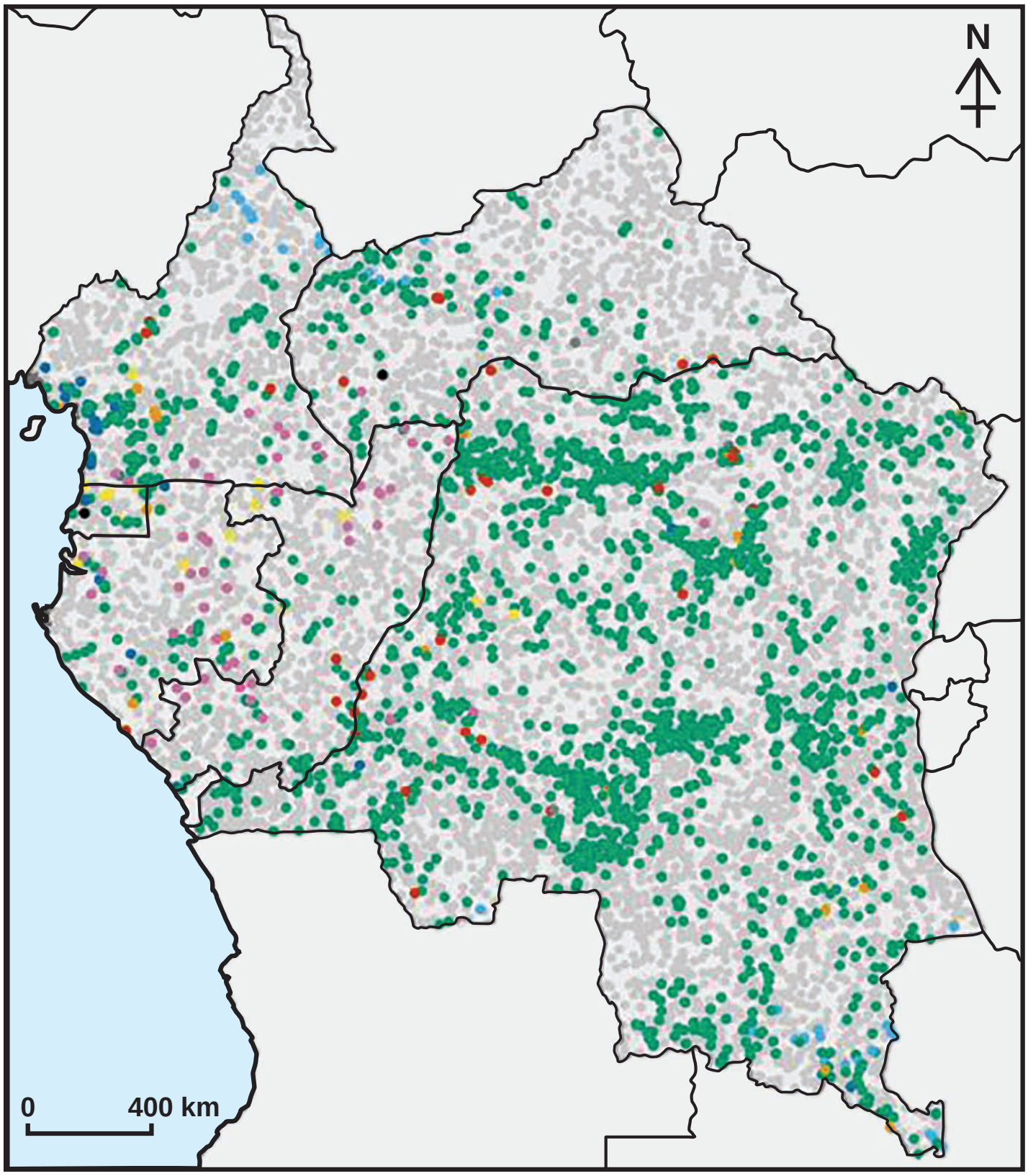
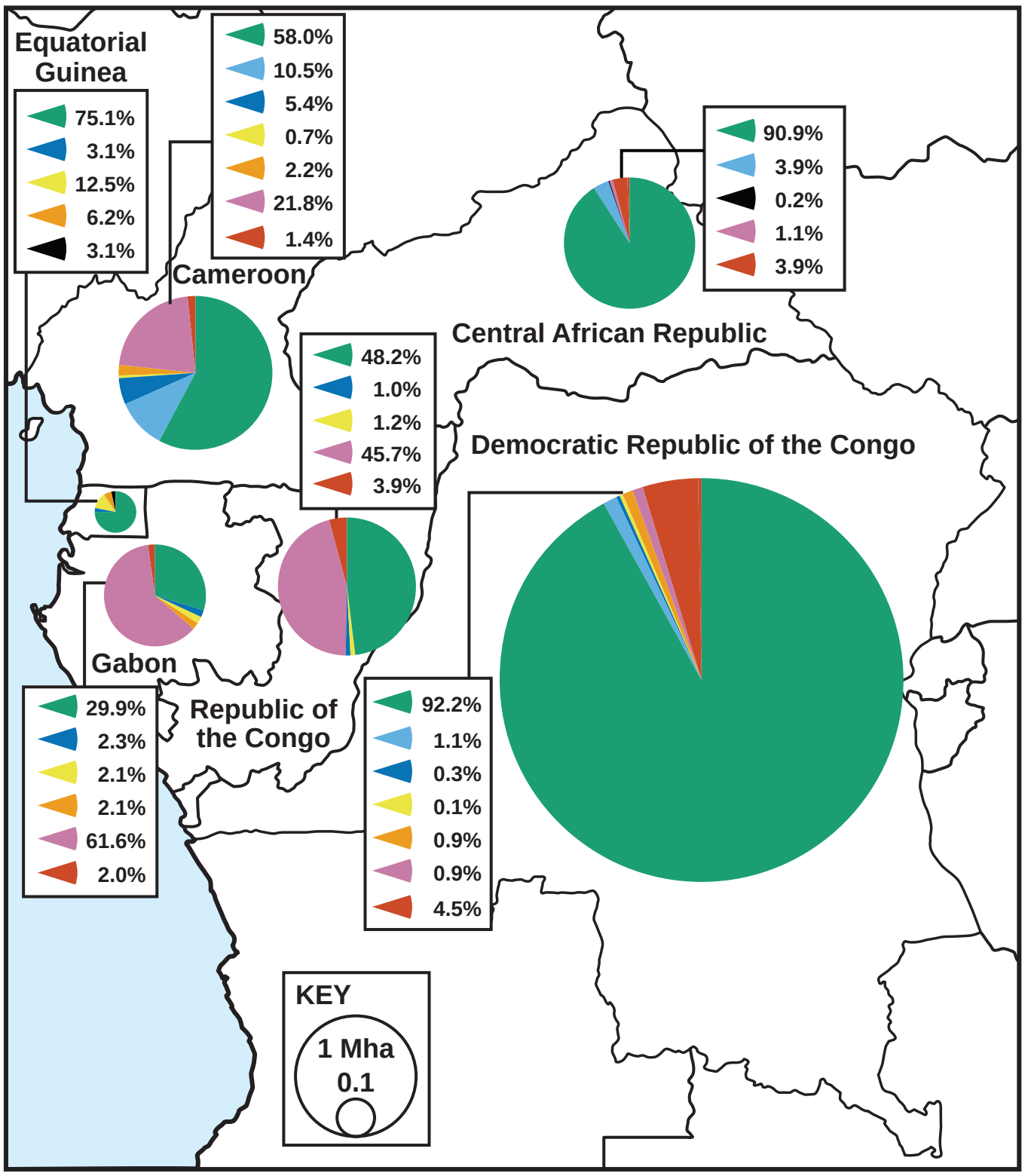
FIGURE 11a – The cause of deforestation in equatorial west Africa, 2000–2014



Reason for forest clearing				
Agriculture			Construction	
Small scale rotational	Small scale semi-permanent	Large scale	Roads	Residential and commercial

Reason for forest clearing			
Mining	Industrial selective logging	Natural fires	No forest loss

FIGURE 11b – National estimates of forest loss by area and cause in equatorial west Africa, 2000–2014



Reason for forest clearing				
Agriculture			Construction	
Small scale rotational	Small scale semi-permanent	Large scale	Roads	Residential and commercial

Reason for forest clearing			
Mining	Industrial selective logging	Natural fires	No forest loss

[Turn over]

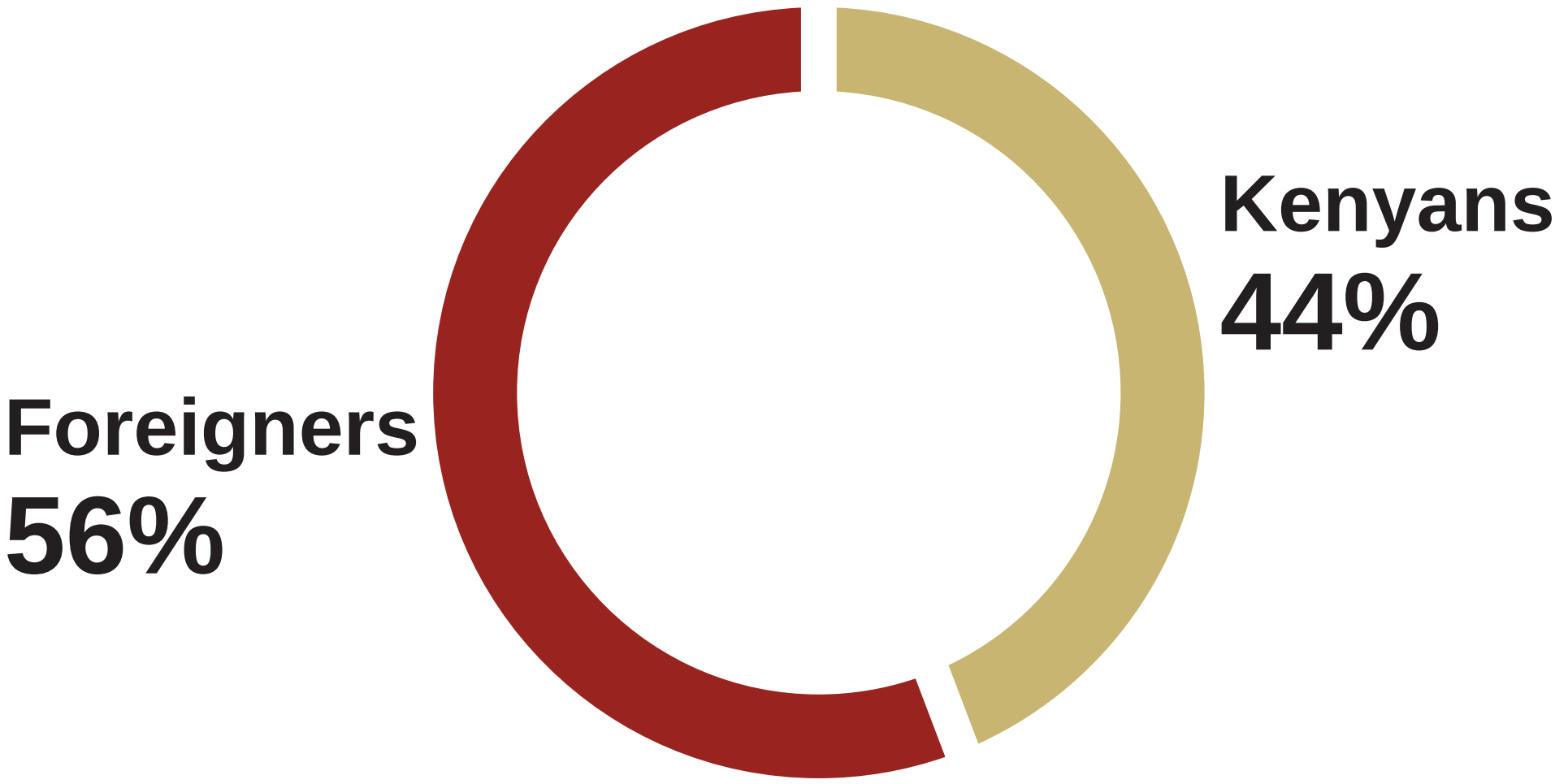
FIGURE 12

A range of issues facing game parks and reserves in Kenya, east Africa

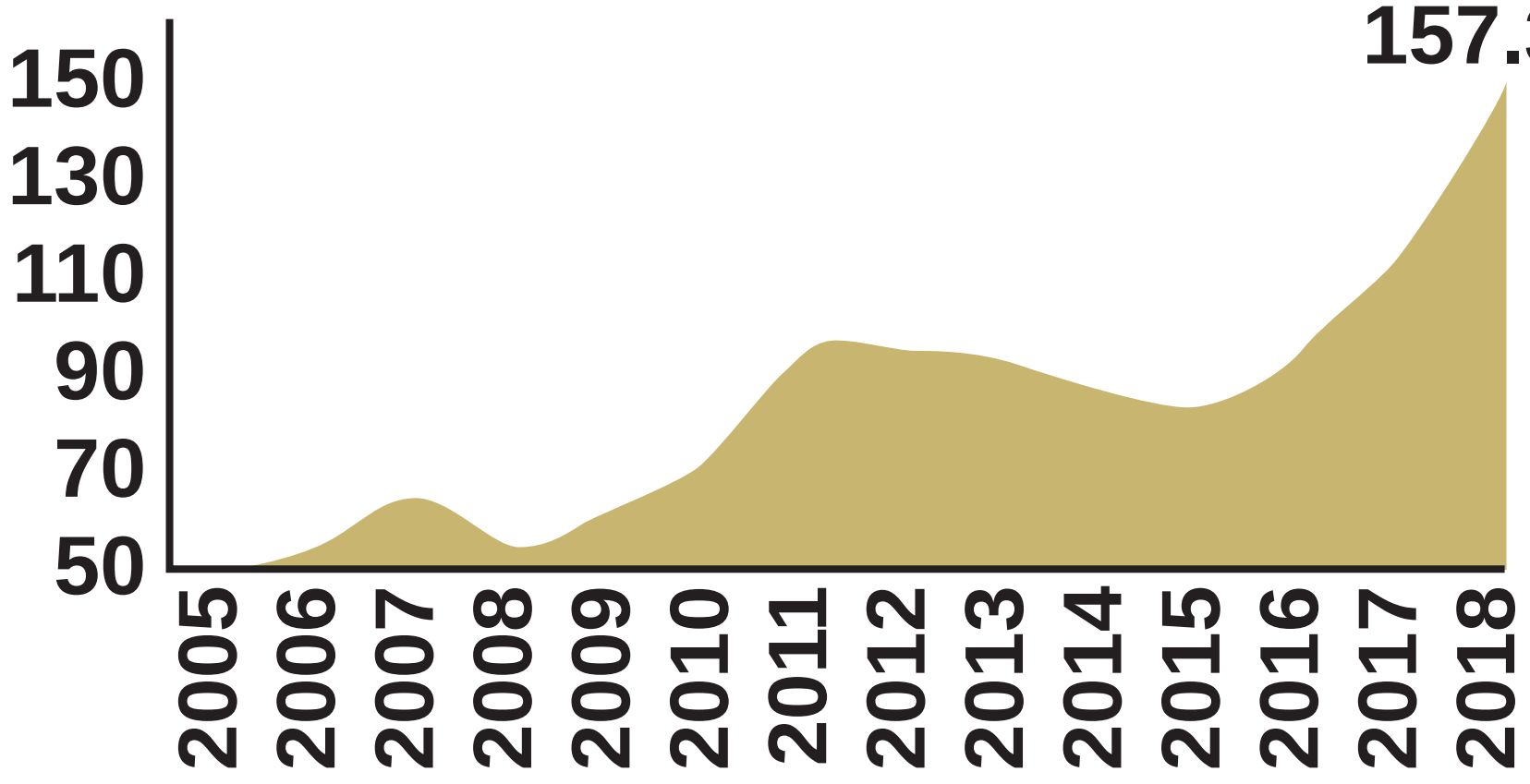
CONSERVATION – Researchers say human encroachment of protected areas should be ranked among major threats like poaching and climate change

Reduced wildebeest population

Visitors to game parks and reserves



Tourism earnings (Billion Kenyan shillings)



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How illegal grazing in the Masai Mara Game Reserve is hurting wildlife.

Comparative analysis from 1977 to 2016

- Cattle population is up by 1053%
- Sheep and goats up by 1174%
- Wildlife has gone down by up to 87.4%
- Only 174 269 wild animals migrate during the great migration, down from 477 560
- Zebras migrating have gone down by 20.4%

Park visitor traffic (’000s)
National parks and game reserves recorded visitor traffic of over 2.3 million annually.

367.7 Nairobi Orphanage

216 L. Nakuru

206.5 Hell’s Gate

200.2 Impala sanctuary

132.7 Masai Mara

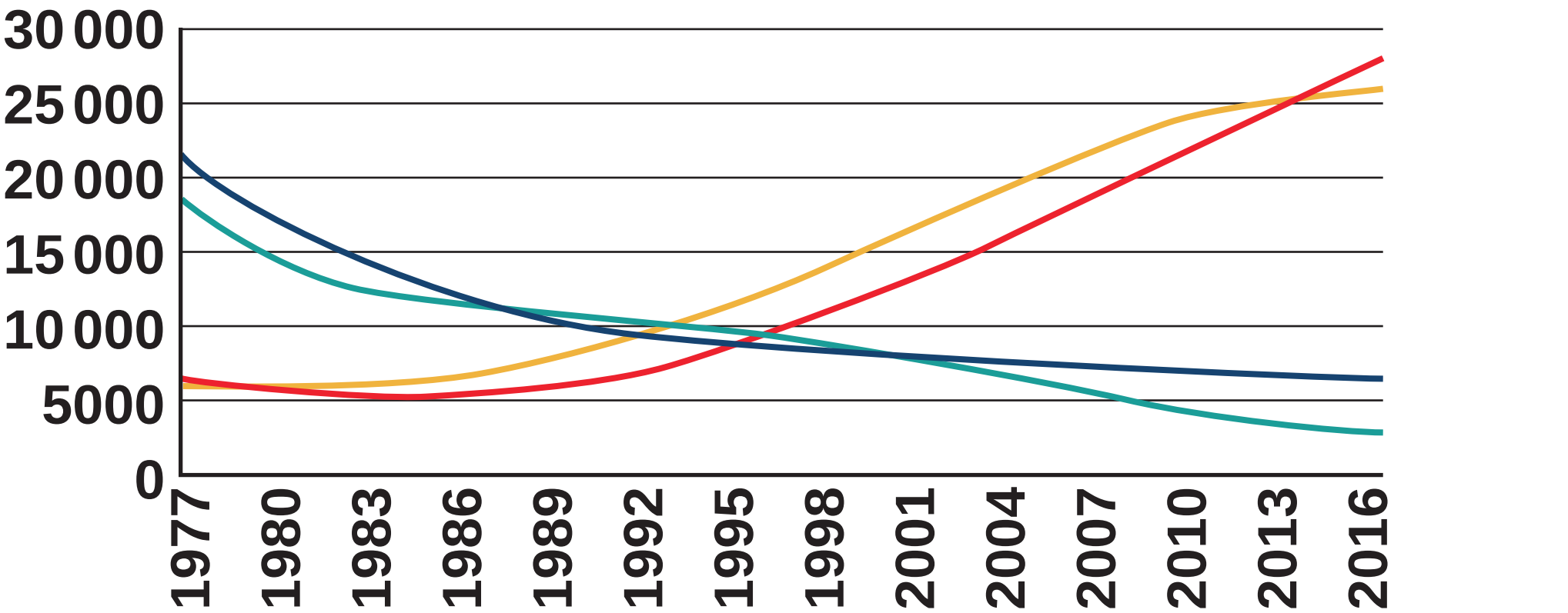
154.5 Nairobi park

145.5 Amboseli

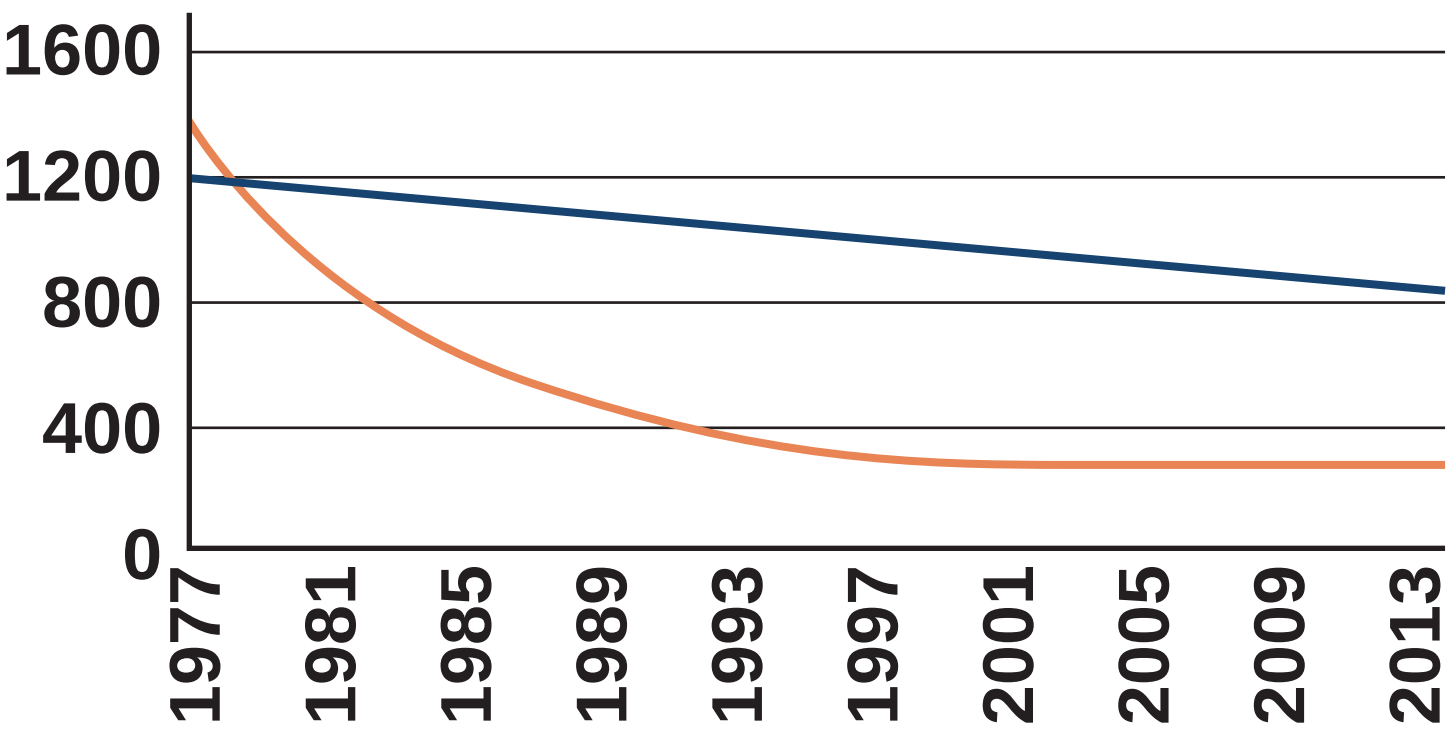
165.9 Nairobi Safari walk

[Turn over]

Wild animal population has reduced while livestock population has increased



Reduced wildlife population



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