A

A-level GEOGRAPHY

Paper 1 Physical Geography

7037/1

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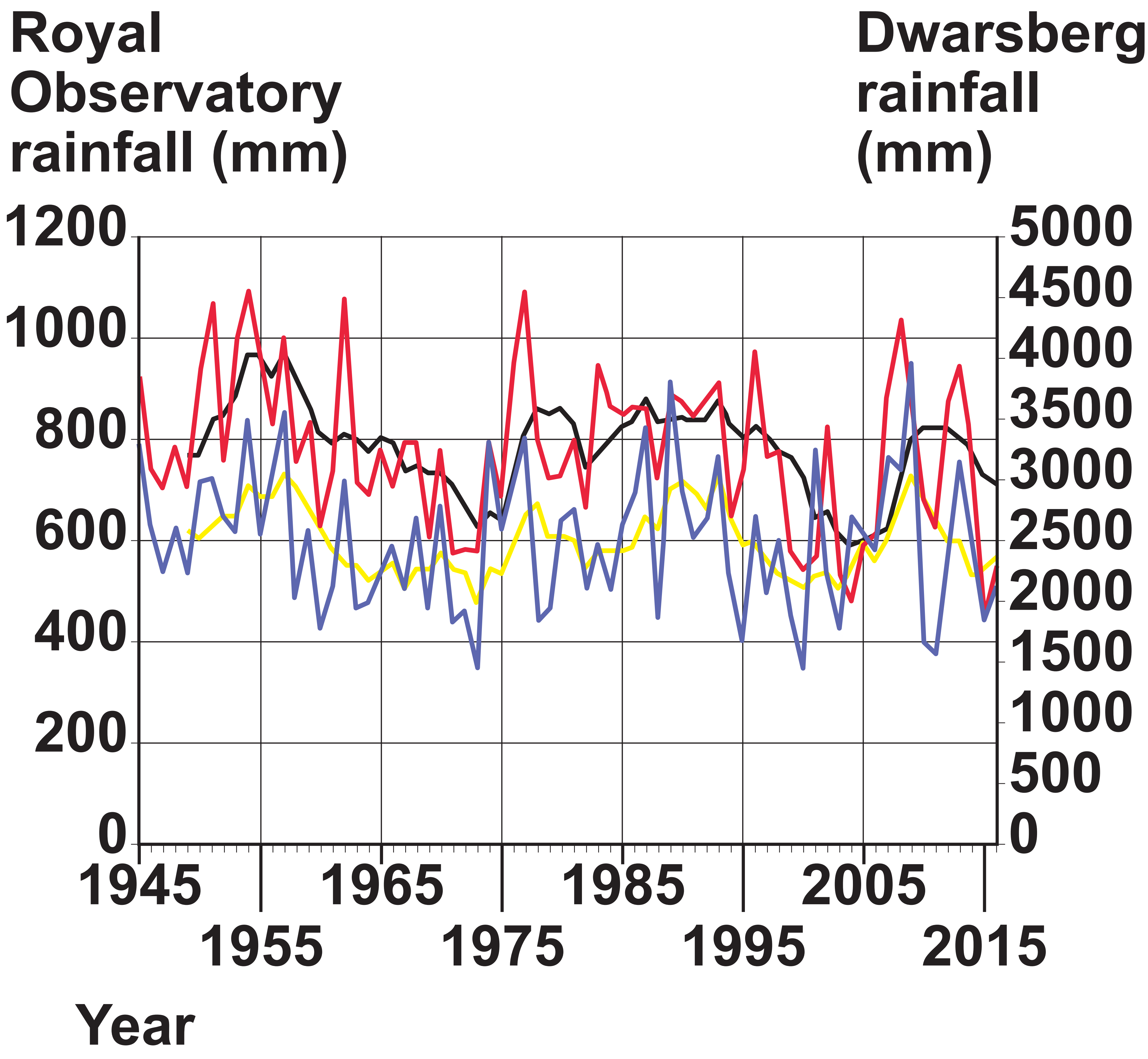
FIGURE 1

Annual and 5-year moving average rainfall data for two measuring stations in South Africa: Royal Observatory and Dwarsberg.



KEY

- Dwarsberg annual (red line)
- Royal Observatory annual (blue line)
- Dwarsberg 5-year moving average (black line)
- Royal Observatory 5-year moving average (yellow line)

Note: The 5-year moving average plots the mean value of the previous 5 years.

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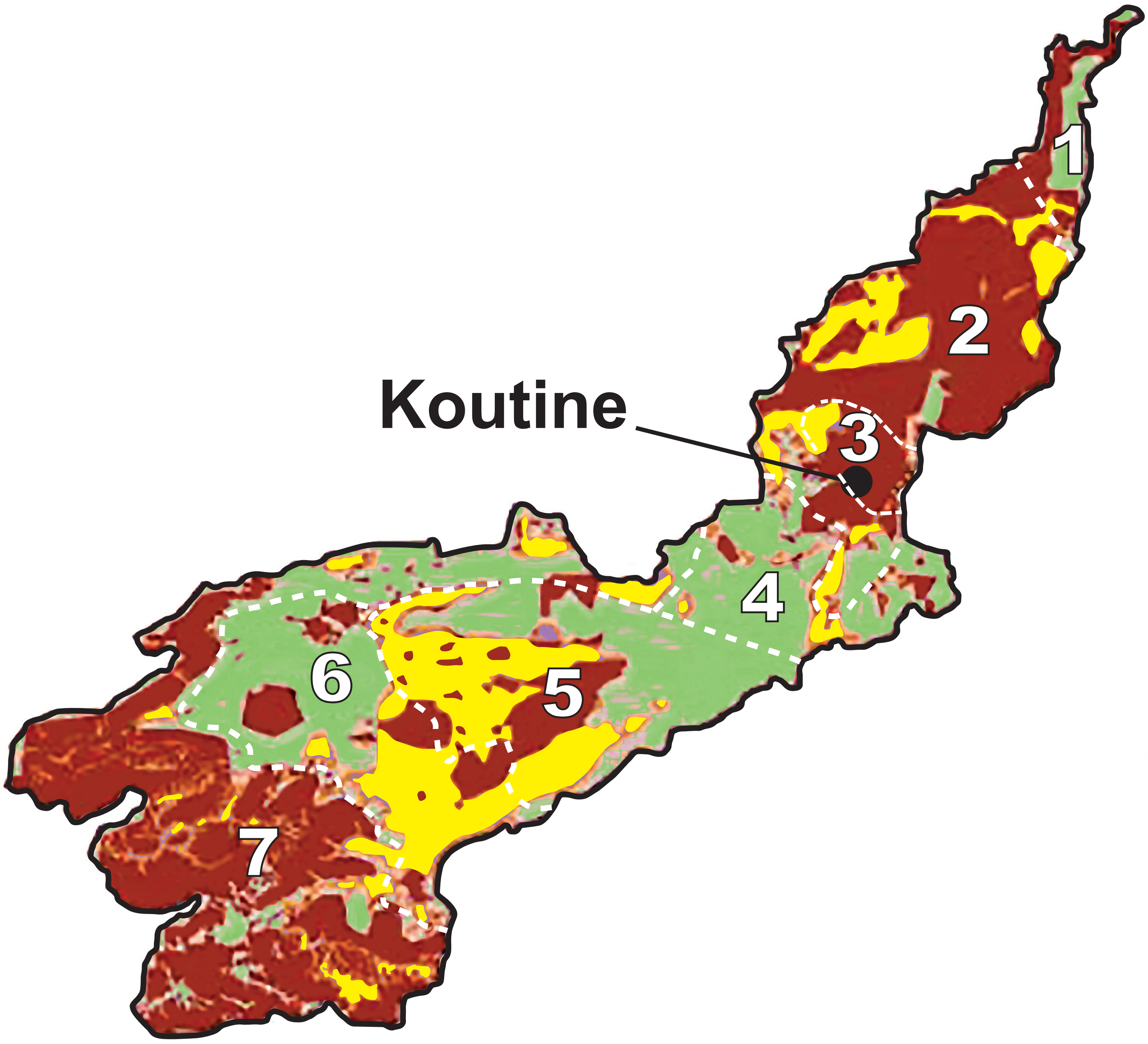
FIGURE 2

Number of days when precipitation is high enough for plant growth across southern Africa in 2000 and that projected for 2050.

Maps showing precipitation for plant growth in South Africa 2000/2050 cannot be reproduced here due to third-party copyright restrictions.

FIGURE 3 – desertification risk levels by landscape type in an area of Tunisia, north Africa.

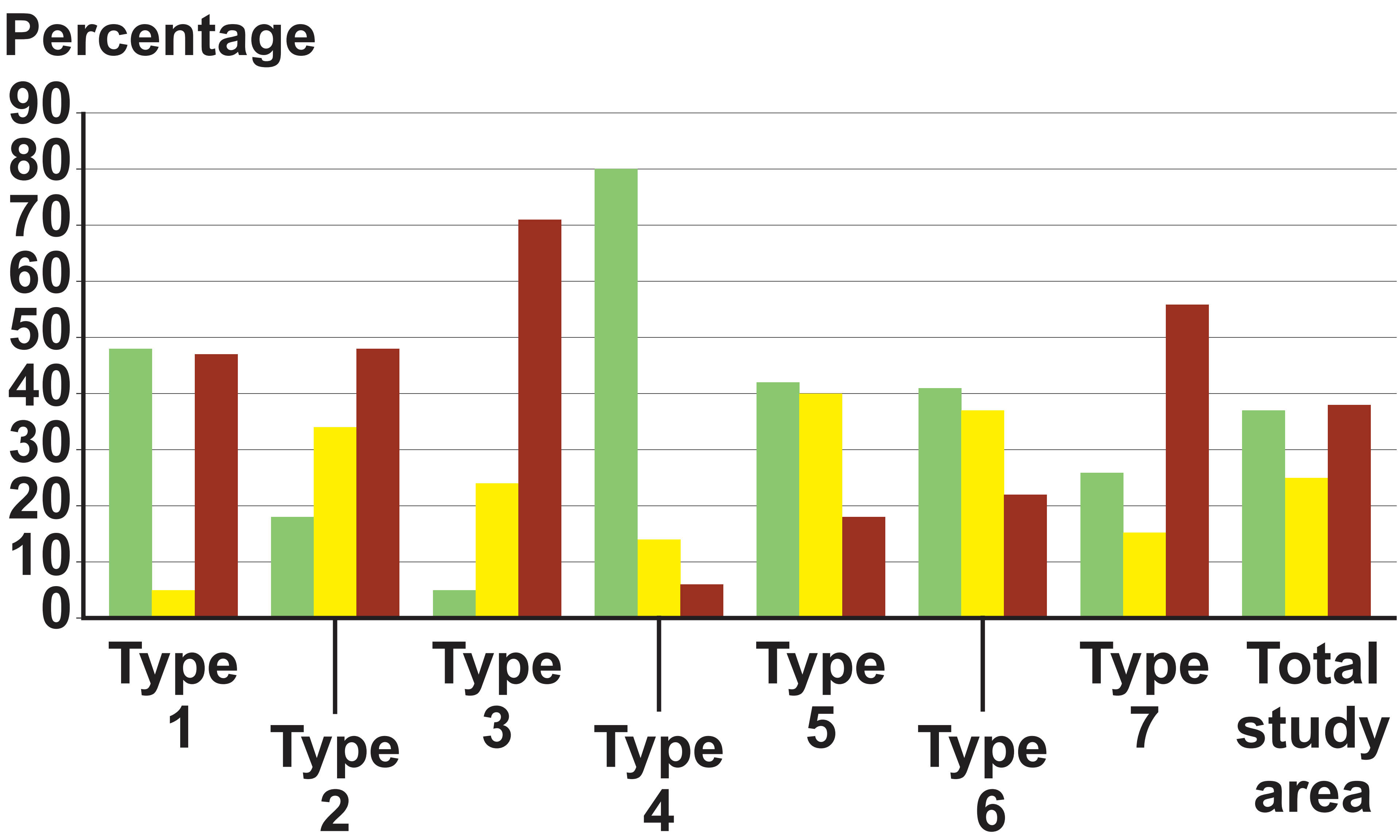


KEY

Desertification risk level

- Low to medium risk
- High risk
- Very high risk
- Landscape type limit
- Study area limit
- Settlement

0 5 km



Landscape type

Type 1: Coastal wetlands

Type 2: Croplands and grasslands

Type 3: Urbanised area

Type 4: Grassland plains

Type 5: Croplands expansion at the expense of grasslands

Type 6: Urban expansion and discontinued grasslands

Type 7: Mountains and water catchments

[Turn over]

FIGURE 4

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FIGURE 5 – the isostatic adjustment in 2010 (green arrows) for selected recording stations in Greenland. Information on the 2010 melting day anomaly is also shown.

Note: 1 Melting day anomaly refers to the extra days of melting relative to the 1979–2009 average.

2 Isostatic adjustment refers to the change in the land level relative to sea level.

KEY

plpk Recording station

10 mm Isostatic adjustment

Land not covered by ice

2010 melting day anomaly

–60 –40 –20 0 +20 +40 +60

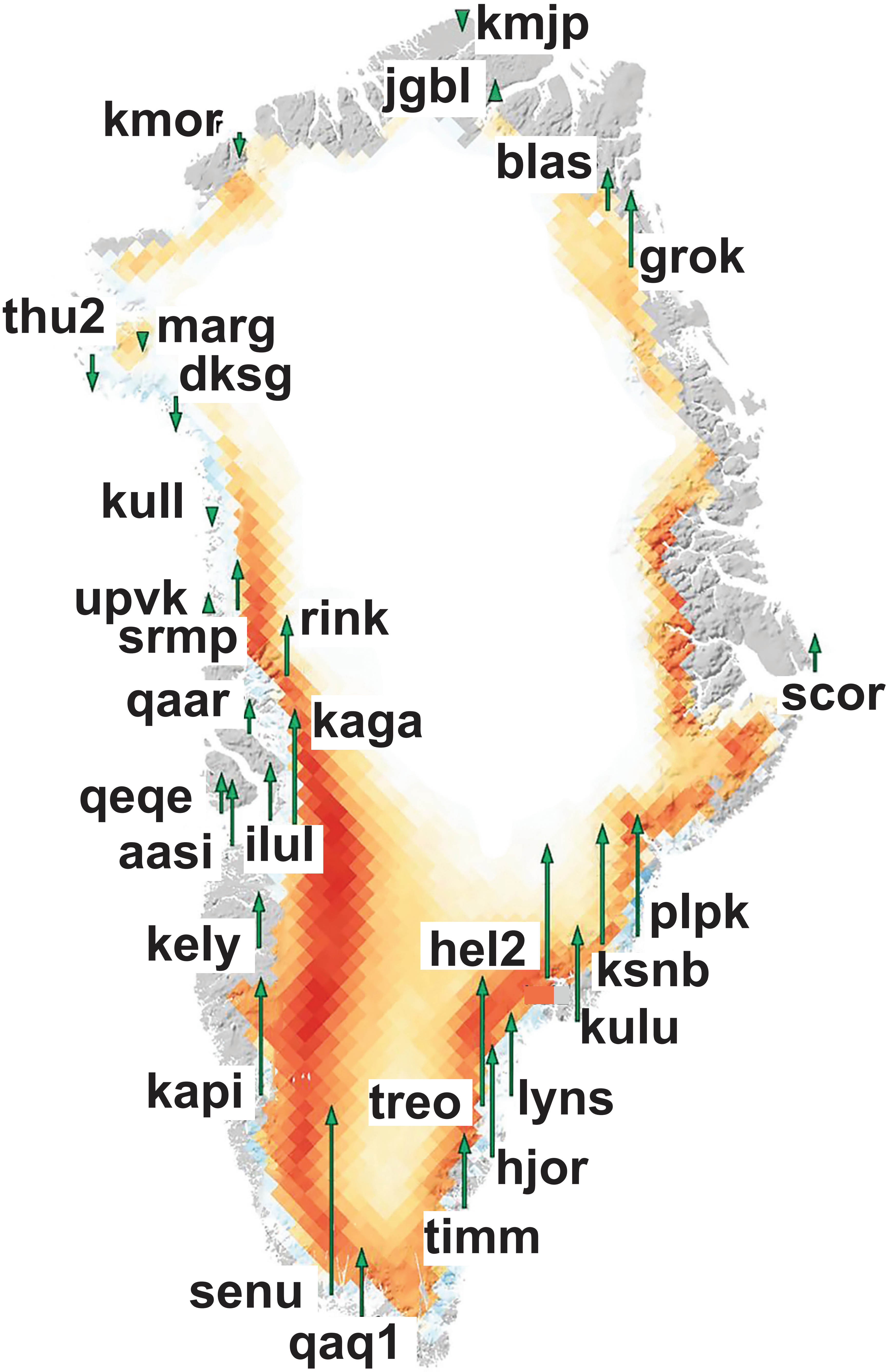
kmjp
jgbl
kmor
blas
grok
thu2
marg
dksg
kull
upvk
srmp
rink
qaar
kaga
scor
qeqe
aasi
ilul
plpk
kely
hel2
ksnb
kulu
kapi
treo
lyns
hjor
timm
senu
qaq1

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FIGURE 6

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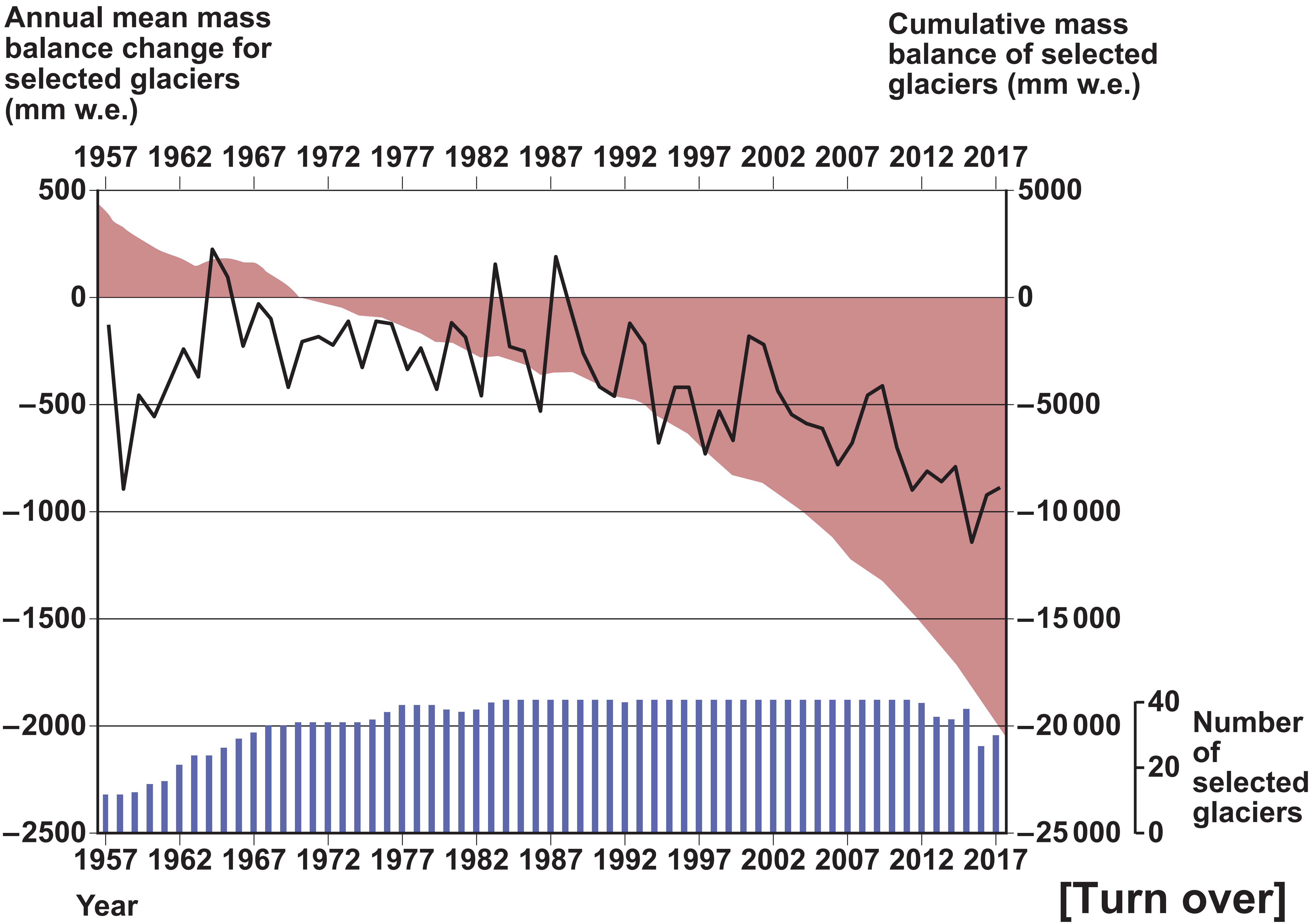
FIGURE 7

The mean mass balance and cumulative mass balance for selected glaciers around the world.

KEY

——— (black line)	**Annual mean mass balance change for selected glaciers**
Pink bar	**Cumulative mass balance relative to 1970**
Blue line	**Number of selected glaciers used to measure mean balance**
mm w.e.	**Millimetres of water equivalent**



Annual mean mass balance change for selected glaciers (mm w.e.)
Cumulative mass balance of selected glaciers (mm w.e.)
1957 1962 1967 1972 1977 1982 1987 1992 1997 2002 2007 2012 2017
500
0
−500
−1000
−1500
−2000
−2500
5000
0
−5000
−10 000
−15 000
−20 000
−25 000
40
20
0
Number of selected glaciers
Year

[Turn over]

FIGURE 8

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**FIGURE 9a – the number of global reported disasters between 1990 and 2017.
It also shows the economic costs associated with the reported disasters.**

KEY

- Economic costs
- Economic cost of selected disasters
- Number of global reported disasters over time

1 EARTHQUAKE
Kobe, Japan (US$160 billion)

2 HURRICANES
Katrina and Wilma, USA (US$201 billion)

3 EARTHQUAKE/TSUNAMI
Tohoku, Japan (US$228 billion)

4 HURRICANES
Harvey, Irma and Maria, USA (US$229 billion)

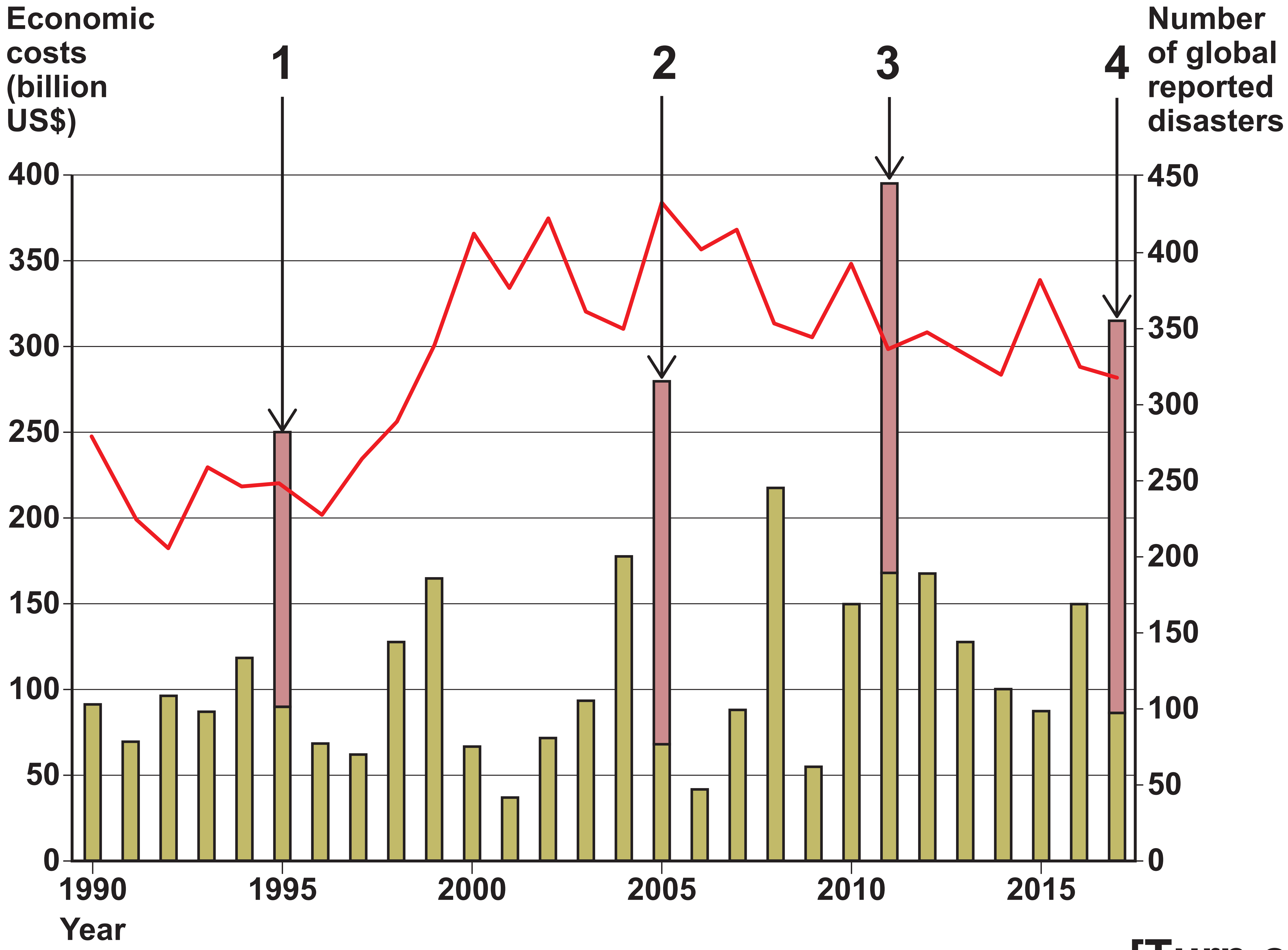
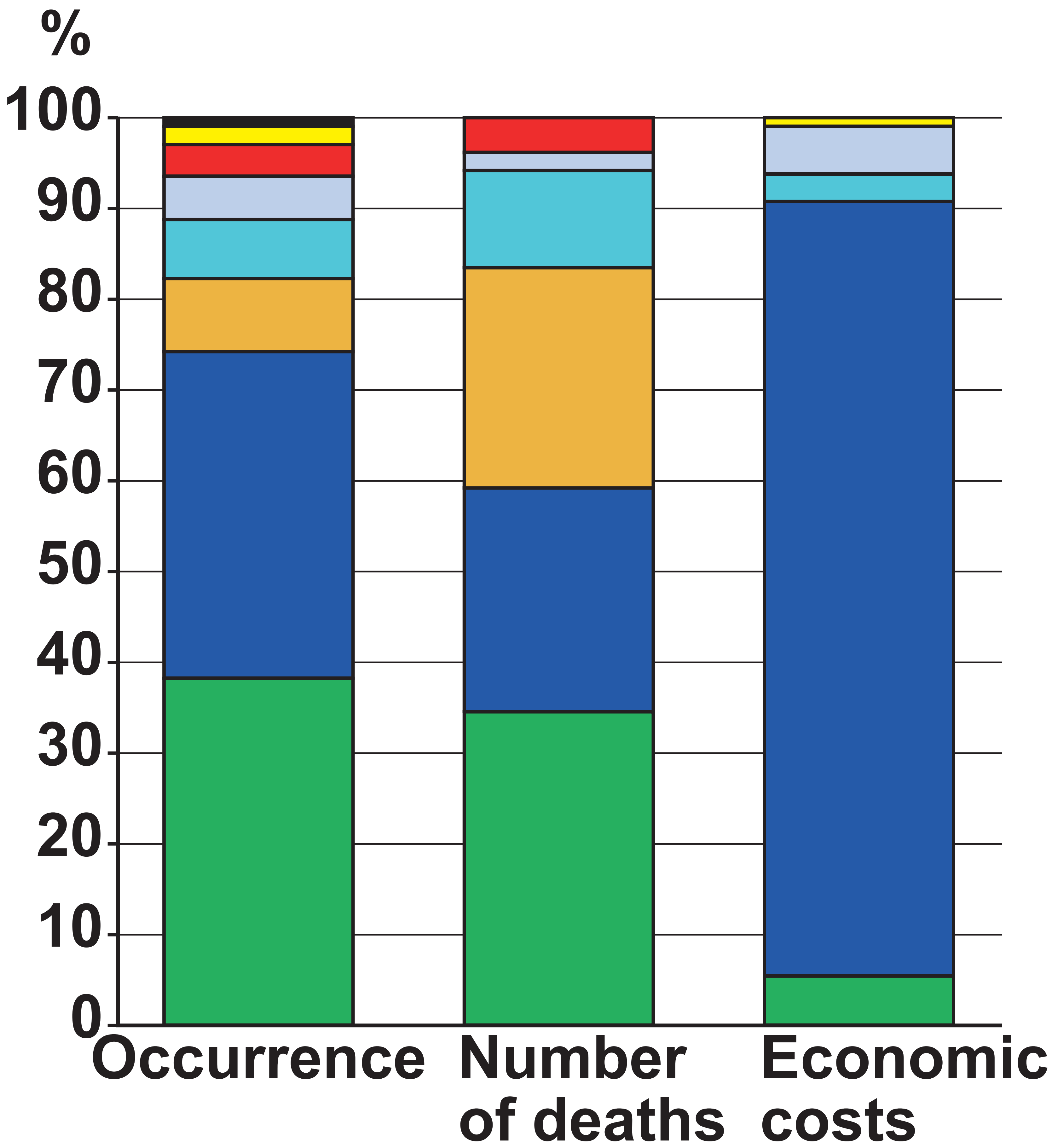

Economic costs (billion US$)
1
2
3
4
Number of global reported disasters
400
350
300
250
200
150
100
50
0
450
400
350
300
250
200
150
100
50
0
1990
1995
2000
2005
2010
2015
Year

FIGURE 9b – information about the global reported disasters for 2017 as shown in FIGURE 9a.

KEY

- Volcanic activity
- Drought
- Extreme temperature
- Wildfire
- Earthquake
- Landslide
- Storm including hurricane
- Flood


%
100
90
80
70
60
50
40
30
20
10
0
Occurrence
Number of deaths
Economic costs

[Turn over]

FIGURE 10a – the track of Hurricane Michael, and data related to the intensity and timescale of the event.

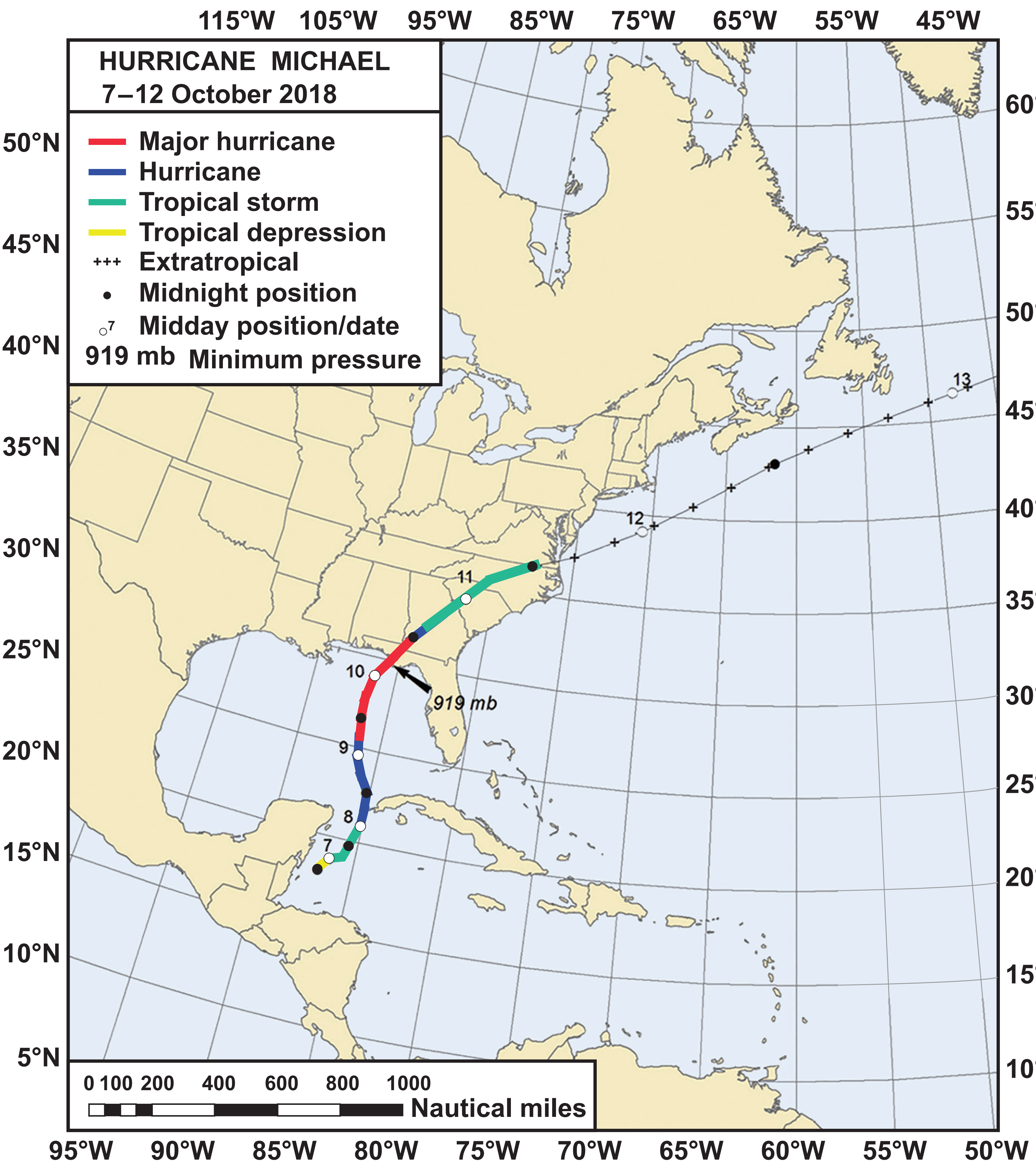


FIGURE 10b – the track of Hurricane Michael between 9–12 October and the rainfall associated with the event.

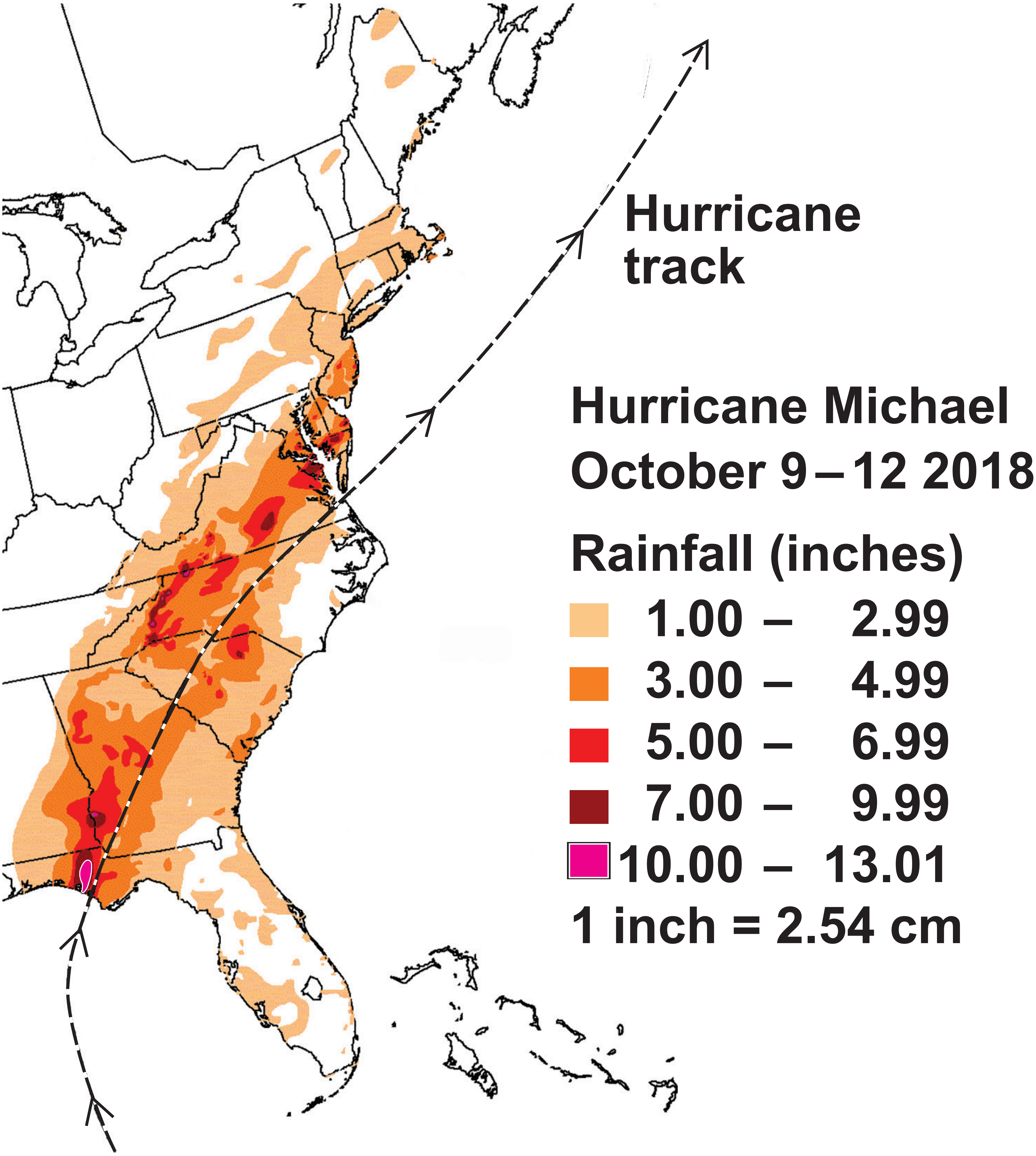


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FIGURE 10c – the aftermath of the event at Mexico Beach in Florida, USA.

An image shows an area of land covered in housing debris. Bricks, pieces of wood, sheets of metal and other items used in housing construction are covering the area.

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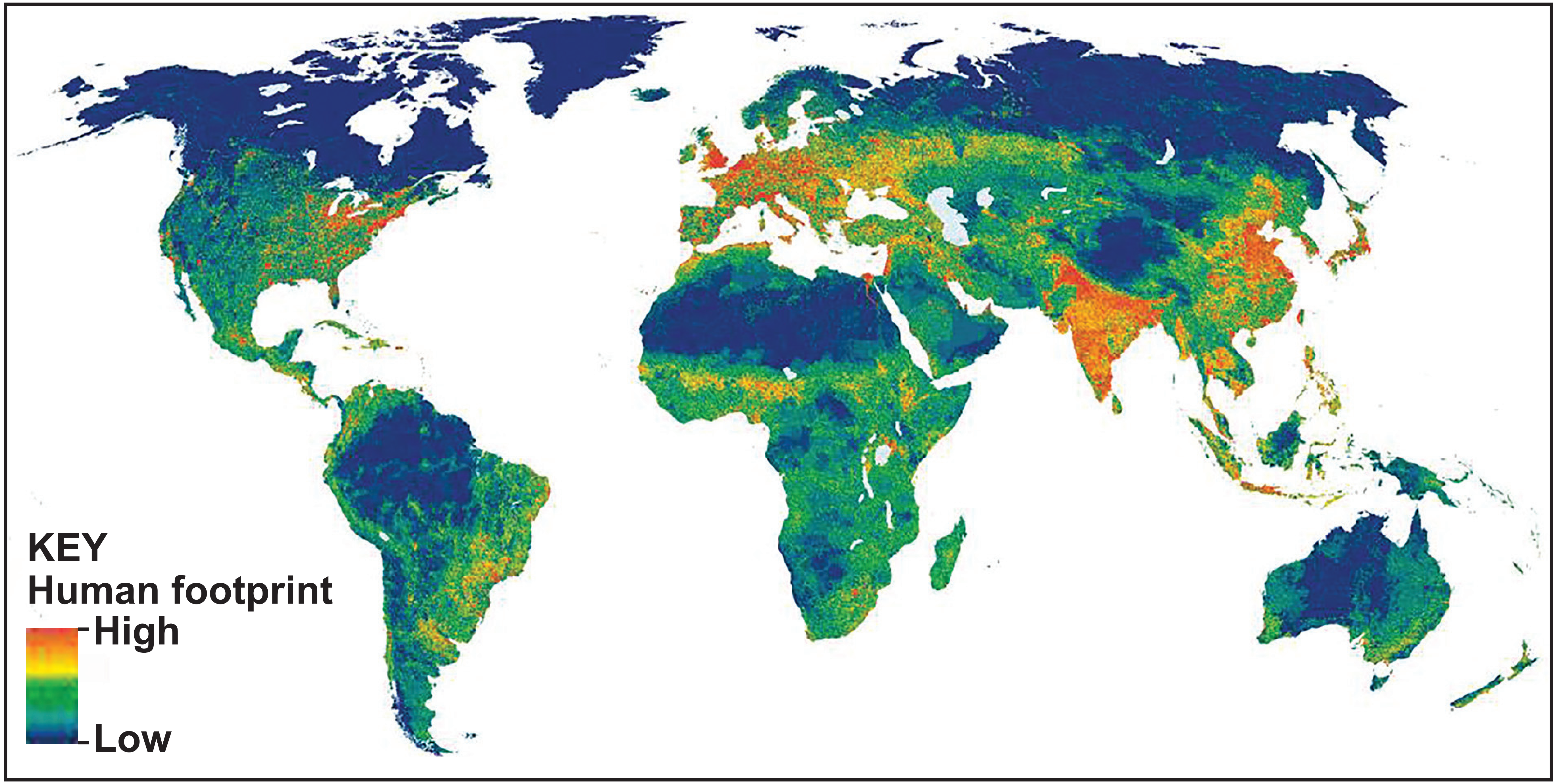
FIGURE 11a

The global human footprint in 2009.



Note: The global human footprint combines the pressures of infrastructure, human land use and human access on natural areas.

FIGURE 11b

Change in the global human footprint between 1993 and 2009.

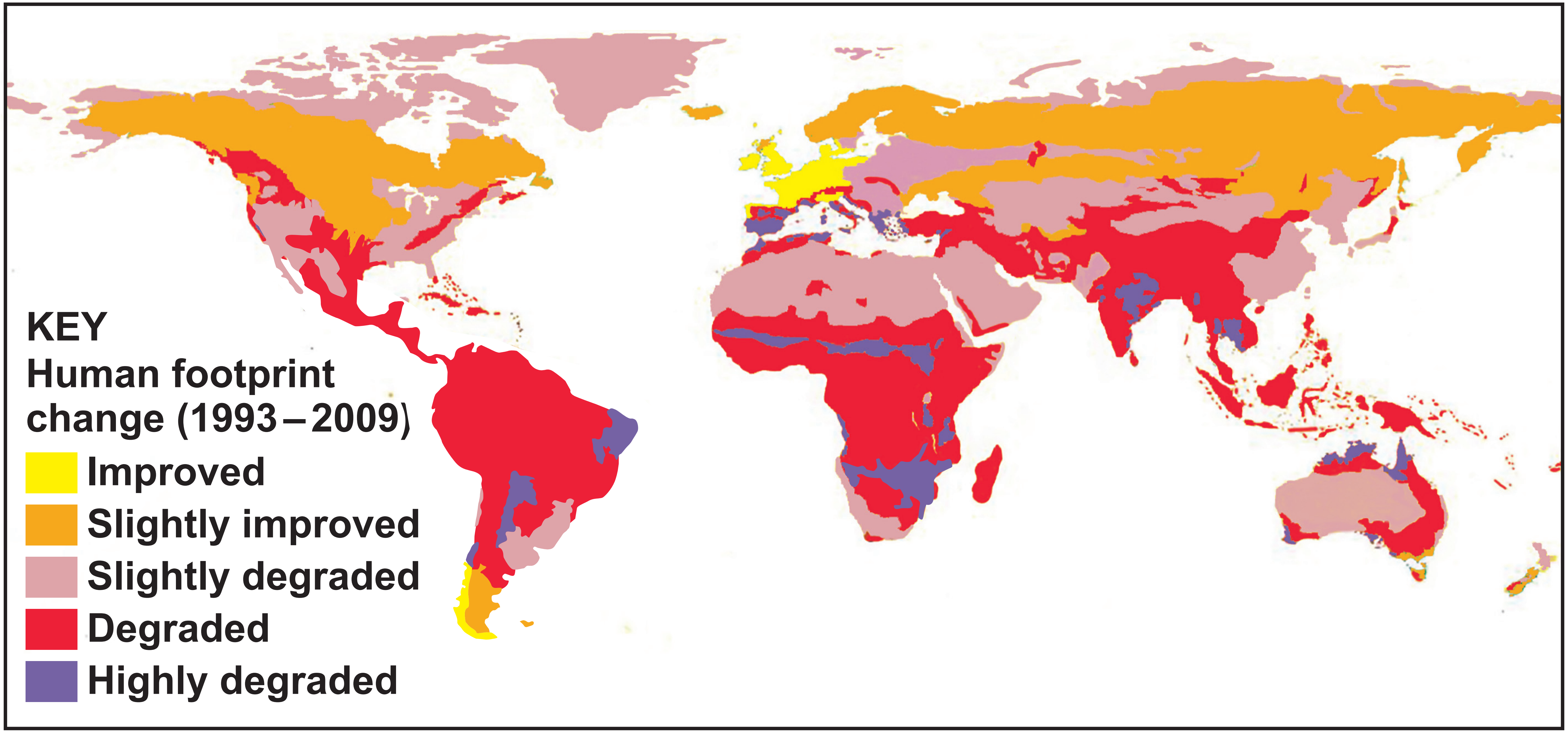


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FIGURE 12a – coral bleaching in the Great Barrier Reef (GBR), Australia, in 2016.

KEY

■ Most severe bleaching

■ Negligible or no bleaching

0 250 km

Note: When water is too warm, corals will expel the algae living in their tissues causing the coral to turn completely white. This is the process of coral bleaching.

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FIGURE 12b – estimated change in sea water pH caused by human-created CO_2 between the 1700s and the 1990s.

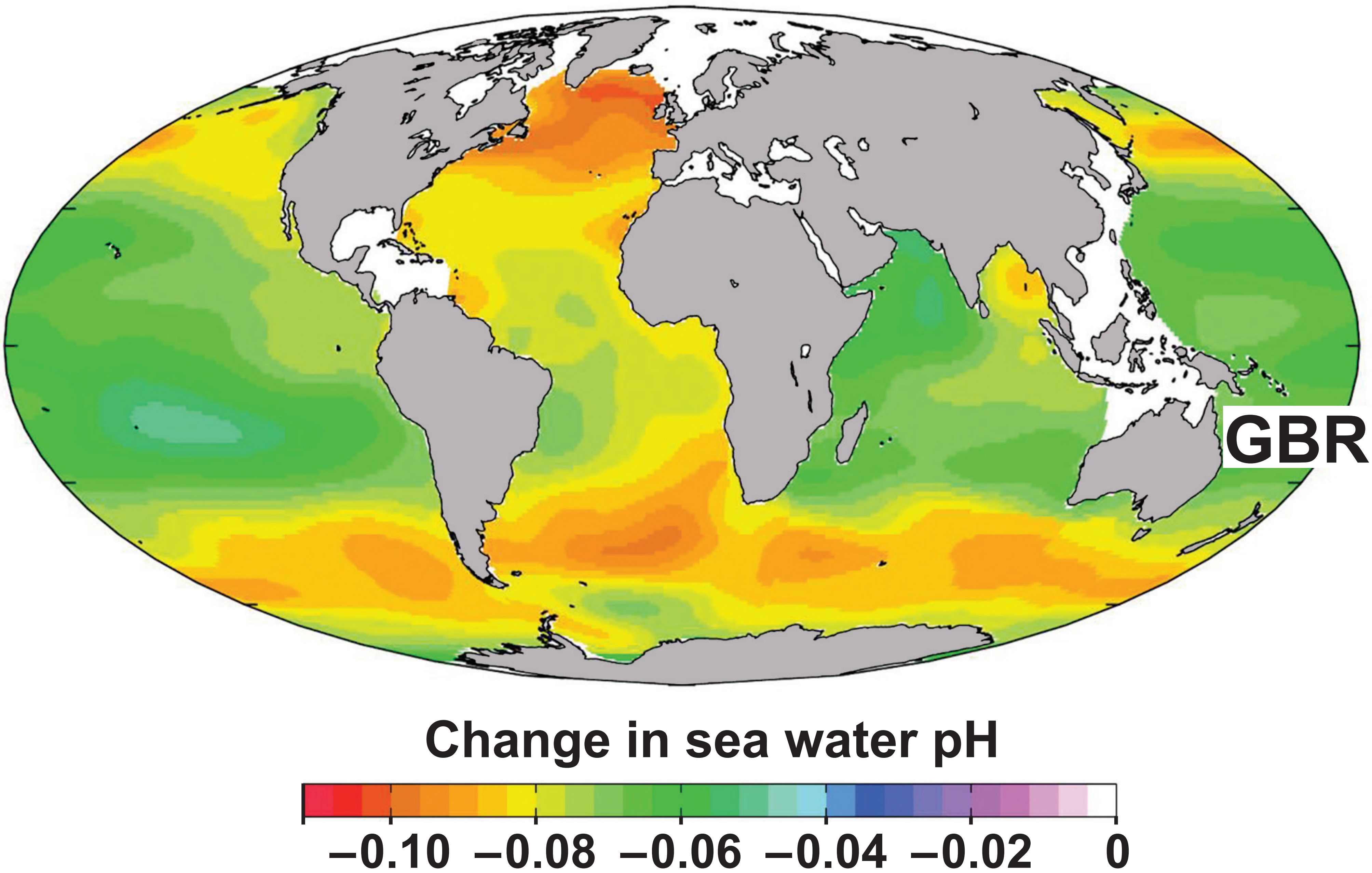
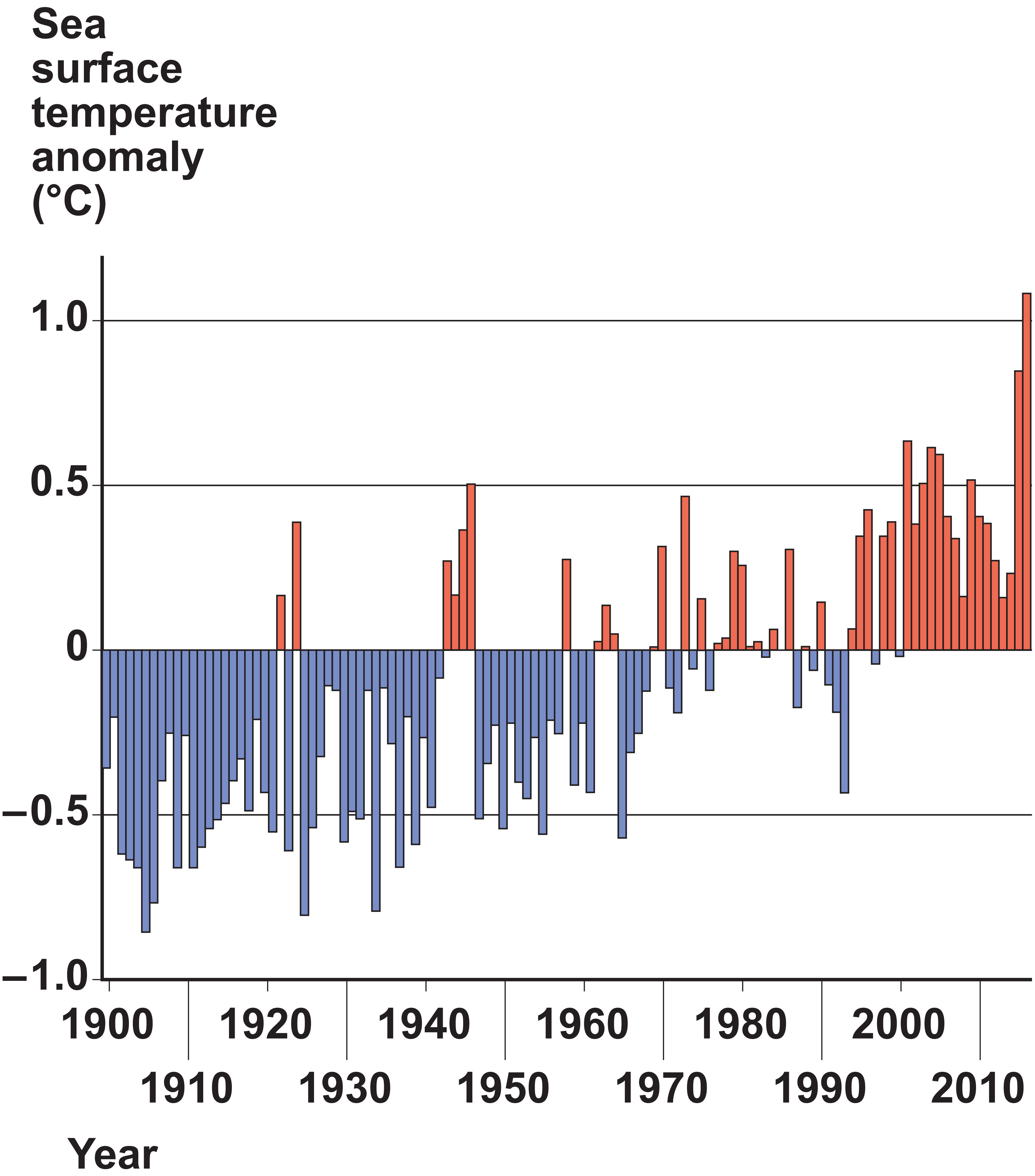


FIGURE 12c – sea surface temperature anomaly for the Coral Sea, Australia, between 1900 and 2016.



Note: The anomaly is measured against the mean for the period 1960–1991.

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