Question Booklet

2018 Australian Geography Competition

1 Use a 2B pencil to complete the answer sheet. You will need a clean eraser to erase your mistakes.

YOU MUST FILL IN THE REQUIRED OVALS. The answer sheet is computer marked and all the ovals you fill in are recorded. See the left side of the Answer sheet for instructions on how to fill in the ovals correctly.

2 **Before the start of the test**

Fill in your name by writing the letters of your name in the required boxes. Then fill in the corresponding ovals beneath the letters of your name. See the **First name** example to the right. You must do this for both your **First name** and **Last name**.

On the lower left of the Answer sheet, please print your school's name where asked. Write the numbers your teacher will give you in the **School Code** and **Postcode**.

On the bottom of the Answer sheet, fill in the oval beside your **Year level**.

If you are in **Year 11**, fill in the oval beside your **age at 30 June 2018**.

Fill in the oval beside your **Gender**.

If you need to, your teacher will advise you to fill in an oval under **School assigned**.

3 **Answer** each question by filling in only one oval that corresponds to the most appropriate answer choice for that question. If you change your mind, you must erase the wrong answer completely so that only one oval is filled in for each question.

If you are in **Year 7 or younger**, or **Year 8** answer Questions 1–30.

If you are in **Year 9** or **Year 10** answer Questions 1-40.

If you are in **Year 11** or **Year 12** answer Questions 16-50 (starting on page 5).

4 Do not mark the front or back of the answer sheet in any other way as this can lead to errors in the computerised marking, or to you not getting a result.

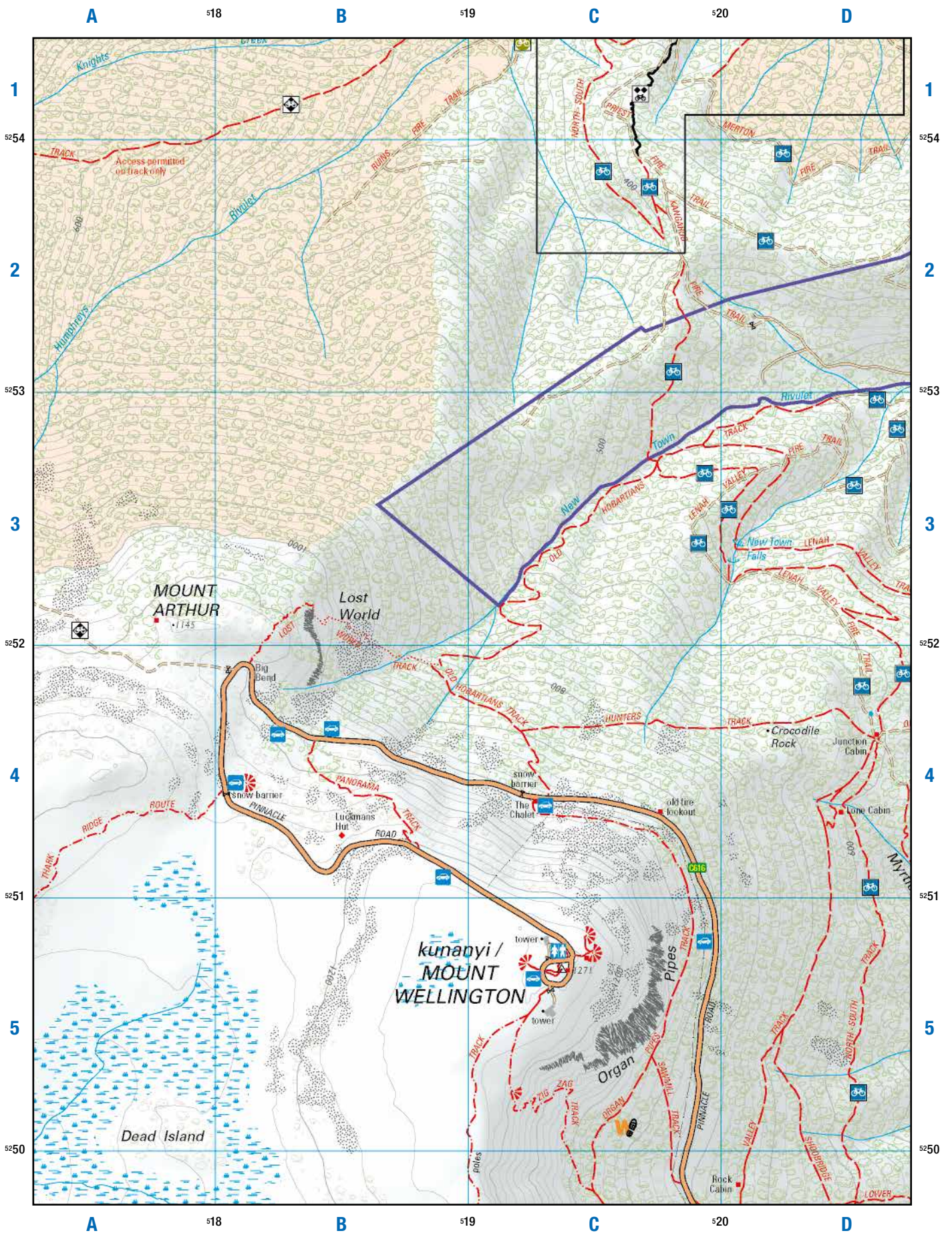**5** You have **35 minutes** to answer the questions.

Figure 1. *Extract from: Wellington Park Recreation Map, Tasmania*
*Base map reproduced with permission of TASMAP (www.tasmap.tas.gov.au) © State of Tasmania*

Legend

ROADS

Major road with route marker B64

Other public road ....

Restricted use

Formed ....

Vehicular track with gate/barrier .... – – – –X– – – –

WALKING TRACKS

Formed: high quality; may be locally rough ...

Unformed: clear and rough; marked or cairned ..

Mountain bikes only; Great Short Walk .... W

SHARED USE WALKING/CYCLING TRACKS

Easy; Moderate; Difficult; Very difficult ....

Wellington Park boundary; other reserve boundary

Transmission line ....

Public toilets; Picnic area: Car park; Information .

Lookout; Waterfall; Trig station; Spot height ...... • 324

Buildings - Public; Private; Ruin ....

Swamp; Landslide/Rock scree; Cliff ....

Dense-medium timber; Scattered trees & scrub .

Contours (20 metre interval); Quarry ....

Built up area ....

Restricted area (public access on nominated tracks only)

Roads and tracks on this map do not necessarily indicate a public right of way.
Some tracks on private property are not shown, as requested by landowners.
Walking tracks shown within Wellington Park are those approved by
the Wellington Park Management Trust.

MEAN TEMPERATURE   MEAN RAINFALL
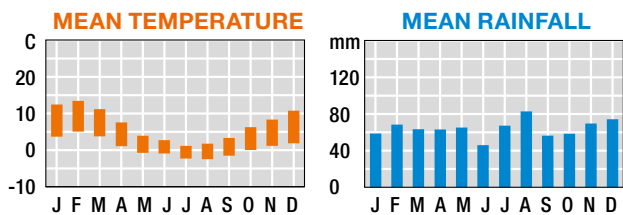
Weather station: MT WELLINGTON elevation 1260.5m

Grid North

N

SCALE 1:20000

0   250   500m   1 km
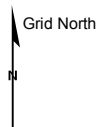
PROJECTION: Universal Transverse Mercator
HORIZONTAL DATUM: Geocentric Datum of Australia 1994
VERTICAL DATUM: Australian Height Datum (Tasmania)

Contour Interval 20 Metres

1   **Using Figure 1, the area around the building on Mount Arthur (A3) is mainly:**

A   built up area

B   cliffs

C   dense-medium timber

D   rock scree

E   swamp

2   **The direct distance between the building on Mount Arthur (A3) and Luckmans Hut (B4) is approximately:**

A   1 km

B   1.1 km

C   1.3 km

D   5.6 km

E   5.8 km

3   **What is the approximate height above sea level of Luckmans Hut (B4)?**

A   1125 m

B   1170 m

C   1230 m

D   1275 m

E   1350 m

4   **Using the graphs in Figure 1, when is Mount Wellington's monthly mean rainfall the highest?**

A   April

B   August

C   December

D   February

E   July

5   **Based on the graphs in Figure 1, which type of climate does Mount Wellington have?**

A   arid

B   equatorial

C   polar

D   temperate

E   tropical

Fold this page back on itself to see the map at the same time.

6   If you walked from Luckmans Hut (B4) to the carpark at the end of the road (C5) you would mainly be travelling:

   A   north
   B   northeast
   C   northwest
   D   southeast
   E   southwest

7   Which of these tracks should be the flattest to walk along?

   A   Lost World Track (B3)
   B   Old Hobartians Track (C3)
   C   Organ Pipes Track (C5)
   D   Sawmill Track (C5)
   E   Zig Zag Track (C5)

8   How is the Aboriginal heritage of the area recognised in the map (Figure 1)?

   A   Aboriginal ceremonial sites are marked.
   B   The Aboriginal name for Mt Arthur is given.
   C   The Aboriginal name for Mt Wellington is given.
   D   Aboriginal rock art sites are marked.
   E   Tracks follow Aboriginal trade routes.

Figure 2. *Rock formation*   © Stefan Karpiniec, CC-BY-2.0

9   In which grid square in Figure 1 was the photo in Figure 2 taken?

   A   A4
   B   B2
   C   B5
   D   C3
   E   C5

10   How was the rock formation shown in Figure 2 created?

   A   Block faulting caused the joints.
   B   Columns developed as magma cooled and contracted.
   C   Deposited sediments built up in layers and then tilted.
   D   Existing rocks were changed due to heat and pressure.
   E   A glacier scratched striations on the rocks.

11   A significant <u>cultural</u> value of an area such as Wellington Park would be:

   A   endangered ecosystems
   B   endemic flora and fauna
   C   geodiversity of the landscape
   D   historic bushwalkers' huts
   E   source of good quality drinking water

12   With a map scale of 1:20000, which distance does 1 cm on the map represent on the ground?

   A   20 cm
   B   20 km
   C   20 m
   D   200 cm
   E   200 m

Table 1. *Local liveability survey*

Indicator	Score				
	Poor	< . . . . . . >			Good
Climate comfort	1	2	3	4	5
Air quality	1	2	3	4	5
Urban design	1	2	3	4	5
Public transport	1	2	3	4	5
Personal safety	1	2	3	4	5
Vandalism and graffiti	1	2	3	4	5
Quality of schools	1	2	3	4	5
Opportunities for post-school study	1	2	3	4	5

13   Which important indicator category is missing from the survey in Table 1?

   A   education
   B   environment
   C   health
   D   infrastructure
   E   law and order

14 **A liveability index designed for overseas students coming to Australia, gives increased emphasis to:**

 A access to medical specialists

 B aged care facilities

 C choice of primary schools

 D plenty of entertainment options

 E all of the above

15 **Which of these is a spatial strategy to improve liveability?**

 A changing a city's zoning regulations to enhance sustainability

 B controlling a city's population growth

 C investing more in public transport services

 D providing funds for community development initiatives

 E upgrading recreational facilities for young people

> Start at Question 16 if you are **in Year 11 or 12**. Other students continue answering questions.

16 **Using Figure 3, between 1984 and 2014 the surface area of the water in Lake Urmia:**

 A decreased by approximately 30%

 B decreased by approximately 50%

 C increased by approximately 70%

 D decreased by approximately 90%

 E stayed the same

17 **What are the most likely reasons for the changes seen in Figure 3?**

 A decreasing evaporation, more hydroelectric dams

 B decreasing humidity, less farming land

 C decreasing rainfall, more water diverted for irrigation

 D decreasing temperatures, greater surrounding population

 E decreasing wind speeds, less local industry

Figure 4. *Lake Urmia in 2015*

18 **Which impact of the change in water level is best illustrated in Figure 4?**

 A Farmers have easier irrigation access.

 B Migratory birds have increased nesting areas.

 C Shipping on most of the lake has halted.

 D Tourist numbers to the lake have decreased.

 E Villagers have more land to build on.

Figure 3. *Astronaut photographs of Lake Urmia, Iran, taken from the International Space Station in 1984 (left) and 2014 (right); the photographs are approximately the same scale*   *Source: NASA Johnson Space Center*

19 **A realistic management plan to improve Lake Urmia's condition should include:**

    A   balancing water use and environmental protection

    B   building resorts to increase tourism

    C   melting icebergs to supplement the water level

    D   pumping water into the lake from the Caspian Sea
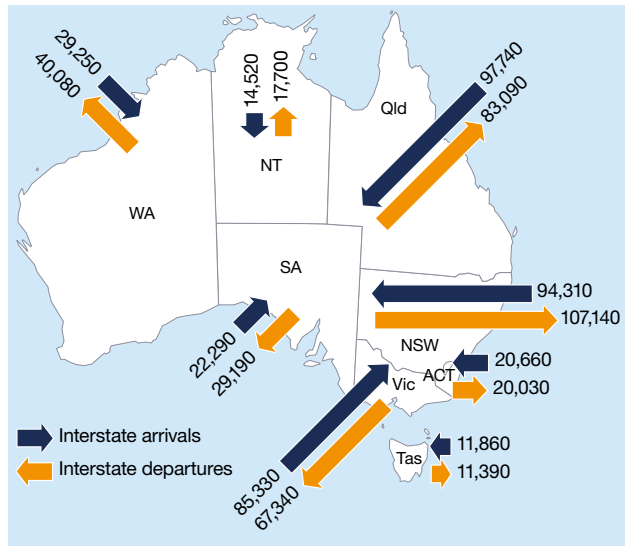
    E   stopping all irrigation around the lake

Figure 5. *Interstate migration in Australia, 2016*

Data source: ABS

20 **From Figure 5, which state had the highest number of interstate arrivals in 2016?**

    A   New South Wales

    B   Queensland

    C   South Australia

    D   Victoria

    E   Western Australia

21 **Using Figure 5, which state had the highest net gain of people through interstate migration in 2016?**

    A   New South Wales

    B   South Australia

    C   Tasmania

    D   Victoria

    E   Western Australia

22 **A significant reason why Western Australia lost people through interstate migration in 2016 was that:**

    A   baby boomers are retiring to coastal WA

    B   jobs associated with the mining boom have ended

    C   Perth's house prices are lower than Sydney's

    D   WA's cost of living is less than Victoria's

    E   all of the above

Figure 6. *Migration cartoon*   © *Simon Kneebone*

23 **The cartoon in Figure 6 is based on which of these reasons for interstate migration?**

    A   employment

    B   family

    C   lifestyle

    D   retirement

    E   study

Table 2. *Jumbled definitions*

Term	Definition
1. arable	A. growing a single crop, usually over a large area
2. greenfield	B. an area not previously built on that is earmarked for development
3. monoculture	C. description of land suitable for growing crops

24 **From Table 2, which answer accurately links a term with its definition?**

    A   1=A, 2=B, 3=C

    B   1=B, 2=A, 3=C

    C   1=B, 2=C, 3=A

    D   1=C, 2=A. 3=B

    E   1=C, 2=B, 3=A

Figure 7. *Iron ore train between Bafq and Yazd, Iran*
© *Kabelleger/David Gubler, CC BY-SA 4.0*

Table 3. *Percentage of Iran's land in agricultural suitability classes based on different criteria*

Data source: Mohsen B. Mesgaran et al

Suitability	Soil + Topography	Soil + Topography + Climate
Excluded	11.9%	11.9%
Unsuitable	24.4%	69.5%
Very poor	34.3%	2.2%
Poor	15.3%	5.4%
Medium	10.6%	7.6%
Good	3.1%	3.0%
Very good	0.4%	0.4%

25 **Which type of vegetation is shown in the photo in Figure 7?**
  A desert
  B grassland
  C savannah
  D steppe
  E woodland

26 **Which agent is the most erosive in the type of landscape shown in Figure 7?**
  A gravity
  B ice
  C temperature
  D water
  E wind

27 **Which geographical concept does the iron ore train shown in Figure 7 best illustrate?**
  A environment
  B interconnection
  C place
  D scale
  E space

28 **From Table 3, what percentage of Iran's land is classified as good or very good for agriculture, regardless of climate?**
  A 0.4%
  B 0.8%
  C 3.4%
  D 3.5%
  E 6.9%

29 **Using Table 3, which factor is the most significant in classifying 69.5% of Iran's land as unsuitable for agriculture?**
  A elevation
  B low rainfall
  C saline soils
  D slope
  E soils low in organic matter

30 **Lakes, cities and national parks are examples of areas that would be assigned to which agricultural suitability class in Table 3?**
  A excluded
  B good
  C medium
  D poor
  E very good

If you are in **Year 8 or younger**, stop at Question 30. Other students continue answering questions.

Figure 8. *Campaign postcard*

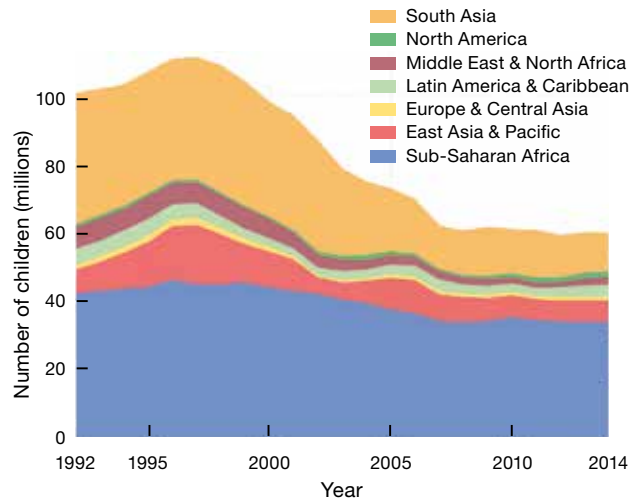**31** **The postcard in Figure 8 is appealing to tourists to:**

   A   be culturally sensitive

   B   buy local goods

   C   choose sustainable tourism operators

   D   leave their cameras at home

   E   take better care of the environment

32 **For an Australian holidaying in India, which activity would emit the most greenhouse gases?**

   A   eating Western-type food in restaurants

   B   flying to India and back

   C   staying in luxury hotels

   D   travelling around India by train

   E   visiting the Taj Mahal and other iconic sites

33 **To protect environmentally sensitive areas in Australia, tourists visiting national parks are encouraged to:**

   A   clean up Australia

   B   reduce, reuse, recycle

   C   switch off your lights for the future of our planet

   D   take nothing but pictures, leave nothing but footprints

   E   think global, act local

34 **Which of the following is a composite indicator of development?**

   A CO_2 emissions

   B   Human Development Index

   C   infant mortality rate

   D   life expectancy

   E   years of schooling

Figure 9. *Out-of-school children of primary school age*

35 **The graph in Figure 9 is a:**

   A   box scattergram

   B   compound bar graph

   C   cumulative line graph

   D   multiple column graph

   E   pie chart

36 **From Figure 9, in which region did out-of-school children increase the most between 1992 and 1997?**

   A   East Asia and Pacific

   B   Europe and Central Asia

   C   North America

   D   South Asia

   E   Sub-Saharan Africa

37 **Which statement is supported by the data in Figure 9?**

   A   Africa's share of out-of-school children of primary school age has decreased since 1992.

   B   The number of girls in primary education has increased.

   C   The number of out-of-school children in East Asia and the Pacific has declined steadily since 1992.

   D   Since 1992, the number of out-of-school children of primary school age has decreased the most in South Asia.

   E   There are more primary school aged children in Africa than in Asia.

38 Using Figure 9, programmes to achieve the United Nations goal of quality education for all should focus most on:

A   East Asia and Pacific

B   Europe and Central Asia

C   North America

D   South Asia

E   Sub-Saharan Africa

39 The reasons why children are out of school include that:

A   the children live in war zones

B   some cultures have a bias against female education

C   their governments cannot afford to build schools where they live

D   they are child labourers

E   all of the above

40 Reducing the percentage of out-of-school children in a country is usually associated with a reduction in:

A   average household income

B   GDP per capita

C   literacy rate

D   total fertility rate
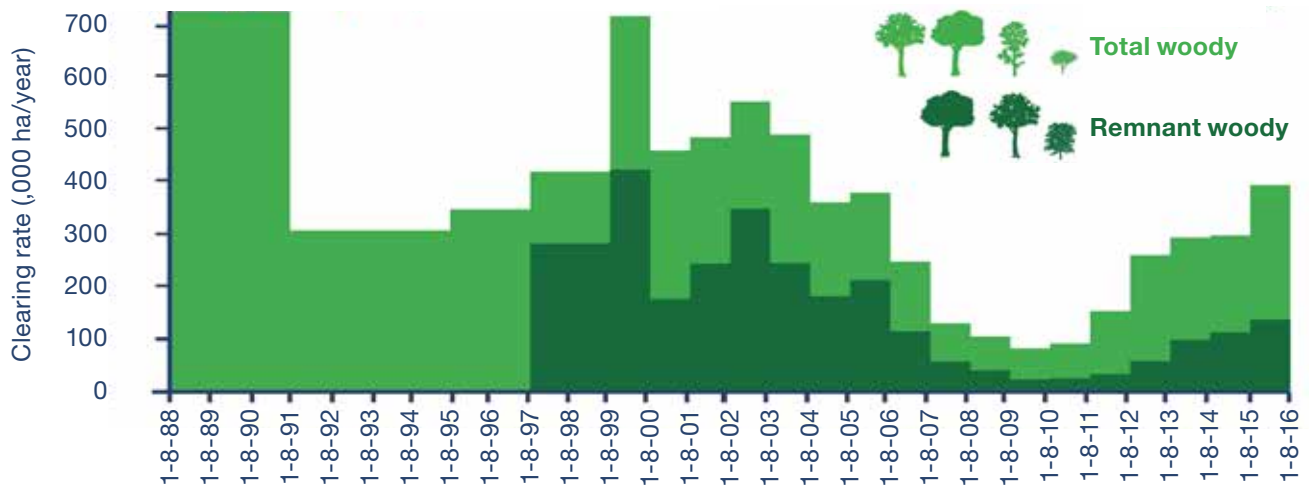
E   all of the above

Figure 10. *Annual woody vegetation clearing in Queensland, 1988-2016; separate remnant woody data available from 1997 onwards*   *Source: Qld Dept of Science, Information Technology and Innovation*

Table 4. *Woody vegetation clearing by replacement land cover by Queensland drainage division*

Source: Qld Dept of Science, Information Technology and Innovation

| Drainage division	Total area (,000 ha)	Rate of woody vegetation clearing (,000 ha/yr)								Estimated extent of woody vegetation in division (%)
		2014-15	2015-16							
		Total	Pasture	Crops	Forest	Mining	Infra-structure	Settle-ment	Total	
Bulloo	5185	3	3	0	0	0	0	0	3	30 ± 1
Gulf Rivers	45315	21	24	<1	<1	1	<1	<1	26	73 ± 1
Lake Eyre	51013	38	29	<1	0	0	<1	<1	29	20 ± 1
Murray-Darling	26252	119	168	2	2	<1	<1	<1	173	48 ± 3
North East Coast	45028	115	145	2	14	1	1	1	164	67 ± 2
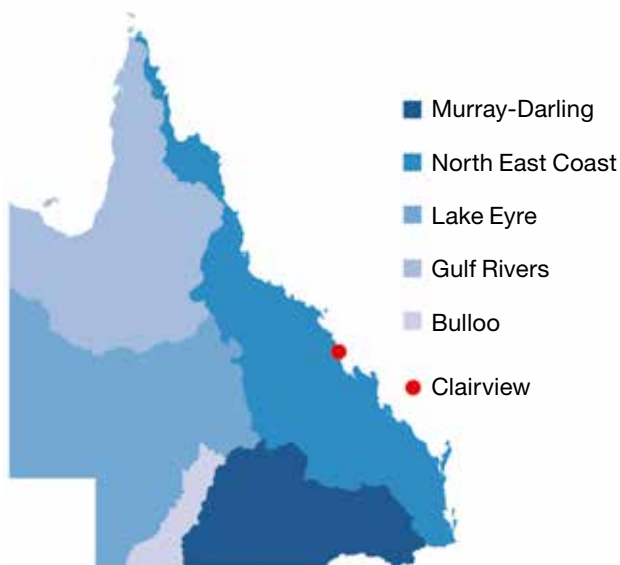
Figure 11. *Queensland drainage divisions*

© *Qld Dept of Science, Information Technology and Innovation*

41   Which is the most accurate definition of an anthropogenic biome?

A   a biome resulting from sustained direct human interactions with ecosystems

B   a biome that has had any form of human influence

C   an entirely natural biome with no human interaction or influence

D   a human settlement located in a natural biome

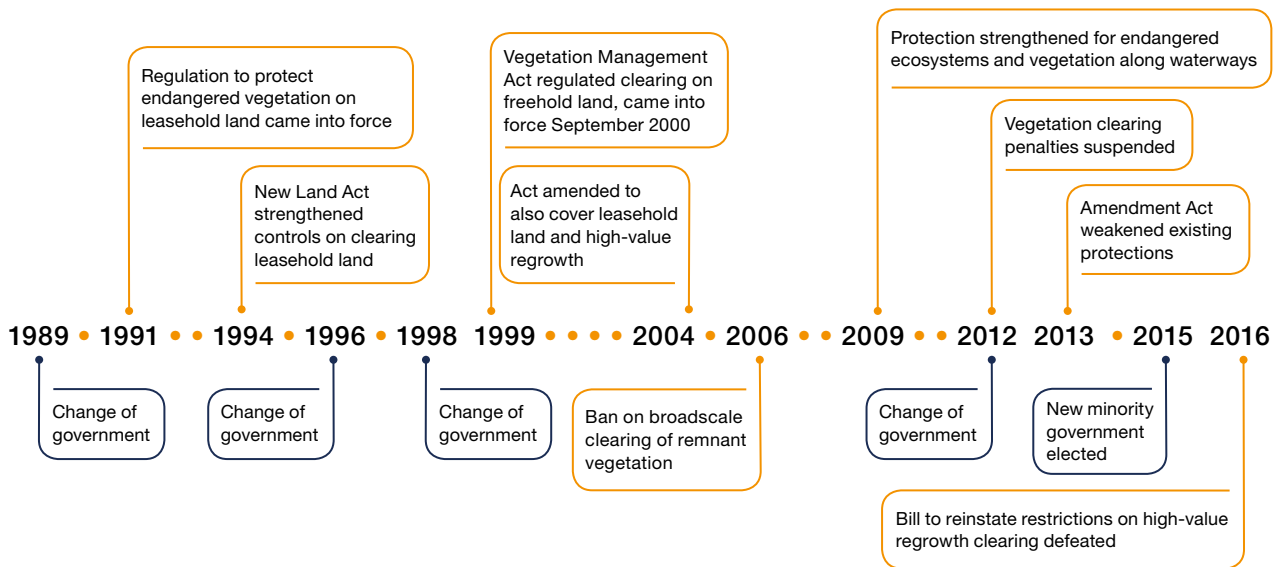E   intentional human activity that may result in changes to the biophysical environment

Figure 12. *Queensland government changes affecting vegetation clearing, 1989-2016*

Sources: V.J. Neldner et al; Queensland Country Life; Qld Premier's Dept

To answer Questions 42-50, use Figures 10-13, Table 4 and your own knowledge.

42 **How much land with woody vegetation was cleared in Queensland in 2002-03?**

- A 543 ha
- B 873 ha
- C 343,000 ha
- D 554,000 ha
- E 885,000 ha

43 **"Panic clearing" historically occurs when a political restriction of vegetation clearing is expected. Which of these years is the best example of this?**

- A 1997-98
- B 1999-00
- C 2002-03
- D 2012-13
- E 2014-15

44 **Which Queensland drainage division had the largest underline area of woody vegetation, as at 2015-16?**

- A Bulloo
- B Gulf Rivers
- C Lake Eyre
- D Murray-Darling
- E North East Coast

45 **The main reason why woody vegetation is cleared in Queensland is for:**

- A agricultural production
- B mining
- C plantation timber
- D road construction
- E urban expansion

46 **Using Table 4 and Figure 11, the increase in woody vegetation clearing from 2014-15 to 2015-16 in the drainage division affecting the Great Barrier Reef, was approximately:**

- A 13%
- B 24%
- C 30%
- D 43%
- E 49%

47 **Which statement about woody vegetation clearing in Queensland is best supported by the information in the sources?**

- A About 16,000 ha of forest was cleared in 2015-16.
- B Government decisions have a major impact on the rate of clearing.
- C Most woody vegetation in Queensland has been cleared.
- D No remnant vegetation was cleared in 1992-93.
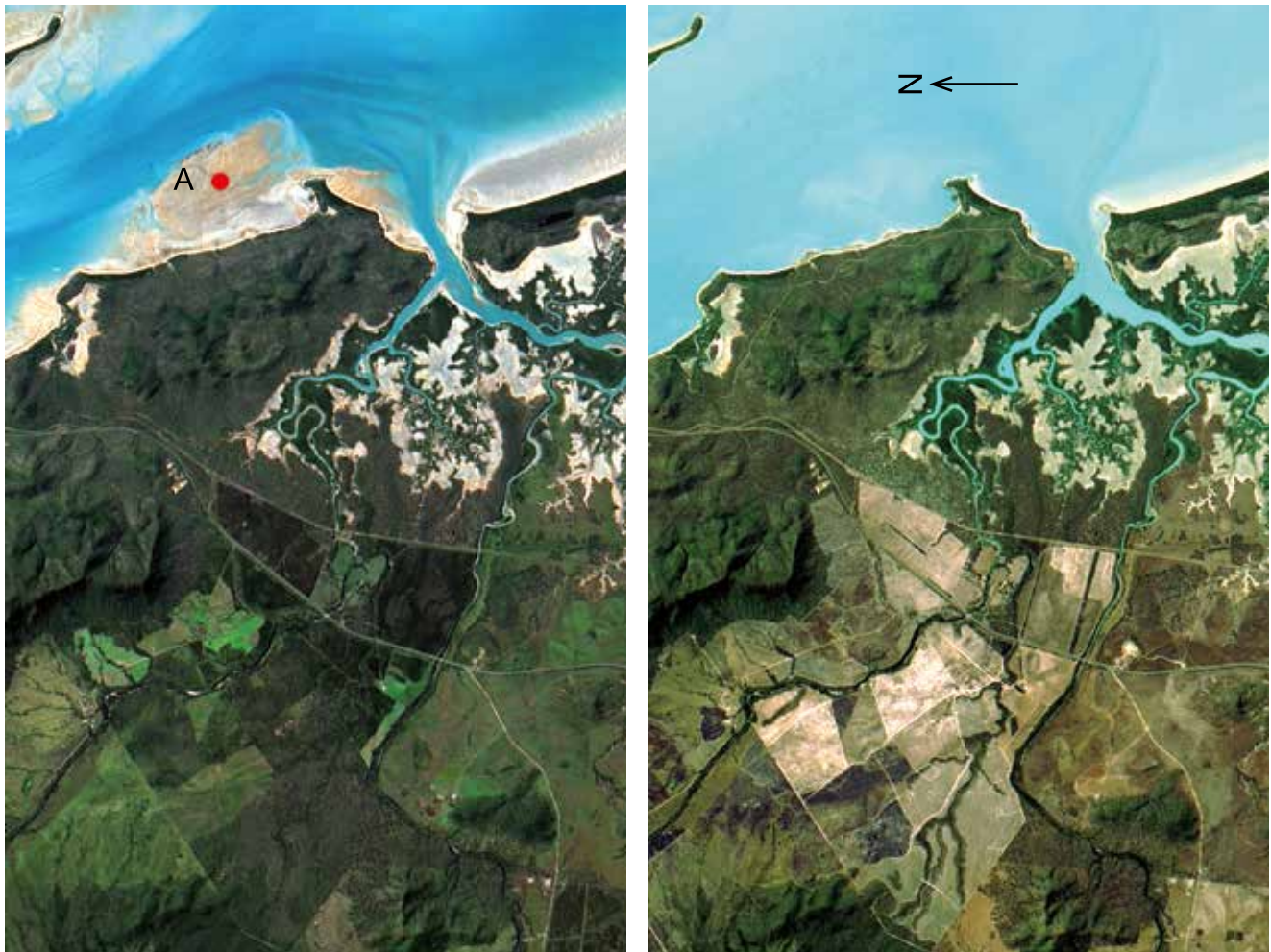- E Vegetation clearing has no benefits.

Figure 13. *Clairview area at 19 May 2013 (left) and 12 August 2015 (right); see Figure 11 for location*

© U.S. Geological Survey

48 **The area around Point A in Figure 13 is:**
- A dumped waste from dredging the river
- B land being reclaimed for development
- C mangrove vegetation
- D a mudflat uncovered at low tide
- E a silt plume from increased vegetation clearing

49 **Considering the information in the sources, which of the following statements is correct in relation to the images in Figure 13?**
- A Clearing has only occurred for building tourism infrastructure.
- B No vegetation at all has been left along waterways.
- C Selective logging has taken place between 2013 and 2015.
- D There is no evidence of broadscale vegetation clearing.
- E This type of clearing was less likely to have occurred in 2010.

50 **Which of these is the most direct environmental impact on the Great Barrier Reef caused by the changes shown in Figure 13?**
- A decreased biodiversity in forest habitats
- B greenhouse gas emissions due to burnt or decaying dead trees
- C gully and streambank erosion in catchment areas
- D physical damage to the corals from cyclones
- E reduction of coral growth due to sediment

Thank you for taking part in the 2018 Australian Geography Competition.