

READING

READING PASSAGE 1

You should spend about 20 minutes on **Questions 1–13**, which are based on Reading Passage 1 below.

The thylacine

The extinct thylacine, also known as the Tasmanian tiger, was a marsupial* that bore a superficial resemblance to a dog. Its most distinguishing feature was the 13–19 dark brown stripes over its back, beginning at the rear of the body and extending onto the tail. The thylacine's average nose-to-tail length for adult males was 162.6 cm, compared to 153.7 cm for females.

The thylacine appeared to occupy most types of terrain except dense rainforest, with open eucalyptus forest thought to be its prime habitat. In terms of feeding, it was exclusively carnivorous, and its stomach was muscular with an ability to distend so that it could eat large amounts of food at one time, probably an adaptation to compensate for long periods when hunting was unsuccessful and food scarce. The thylacine was not a fast runner and probably caught its prey by exhausting it during a long pursuit. During long-distance chases, thylacines were likely to have relied more on scent than any other sense. They emerged to hunt during the evening, night and early morning and tended to retreat to the hills and forest for shelter during the day. Despite the common name 'tiger', the thylacine had a shy, nervous temperament. Although mainly nocturnal, it was sighted moving during the day and some individuals were even recorded basking in the sun.

The thylacine had an extended breeding season from winter to spring, with indications that some breeding took place throughout the year. The thylacine, like all marsupials, was tiny and hairless when born. Newborns crawled into the pouch on the belly of their mother, and attached themselves to one of the four teats, remaining there for up to three months. When old enough to leave the pouch, the young stayed in a lair such as a deep rocky cave, well-hidden nest or hollow log, whilst the mother hunted.

Approximately 4,000 years ago, the thylacine was widespread throughout New Guinea and most of mainland Australia, as well as the island of Tasmania. The most recent, well-dated occurrence of a thylacine on the mainland is a carbon-dated fossil from Murray Cave in Western Australia, which is around 3,100 years old. Its extinction coincided closely with the arrival of wild dogs called dingoes in Australia and a similar predator in New Guinea. Dingoes never reached Tasmania, and most scientists see this as the main reason for the thylacine's survival there.

*marsupial: a mammal, such as a kangaroo, whose young are born incompletely developed and are typically carried and suckled in a pouch on the mother's belly

Test 3

The dramatic decline of the thylacine in Tasmania, which began in the 1830s and continued for a century, is generally attributed to the relentless efforts of sheep farmers and bounty hunters** with shotguns. While this determined campaign undoubtedly played a large part, it is likely that various other factors also contributed to the decline and eventual extinction of the species. These include competition with wild dogs introduced by European settlers, loss of habitat along with the disappearance of prey species, and a distemper-like disease which may also have affected the thylacine.

There was only one successful attempt to breed a thylacine in captivity, at Melbourne Zoo in 1899. This was despite the large numbers that went through some zoos, particularly London Zoo and Tasmania's Hobart Zoo. The famous naturalist John Gould foresaw the thylacine's demise when he published his *Mammals of Australia* between 1848 and 1863, writing, 'The numbers of this singular animal will speedily diminish, extermination will have its full sway, and it will then, like the wolf of England and Scotland, be recorded as an animal of the past.'

However, there seems to have been little public pressure to preserve the thylacine, nor was much concern expressed by scientists at the decline of this species in the decades that followed. A notable exception was T.T. Flynn, Professor of Biology at the University of Tasmania. In 1914, he was sufficiently concerned about the scarcity of the thylacine to suggest that some should be captured and placed on a small island. But it was not until 1929, with the species on the very edge of extinction, that Tasmania's Animals and Birds Protection Board passed a motion protecting thylacines only for the month of December, which was thought to be their prime breeding season. The last known wild thylacine to be killed was shot by a farmer in the north-east of Tasmania in 1930, leaving just captive specimens. Official protection of the species by the Tasmanian government was introduced in July 1936, 59 days before the last known individual died in Hobart Zoo on 7th September, 1936.

There have been numerous expeditions and searches for the thylacine over the years, none of which has produced definitive evidence that thylacines still exist. The species was declared extinct by the Tasmanian government in 1986.

** bounty hunters: people who are paid a reward for killing a wild animal

Questions 1–5

Complete the notes below.

Choose **ONE WORD ONLY** from the passage for each answer.

Write your answers in boxes 1–5 on your answer sheet.

The thylacine

Appearance and behaviour

- looked rather like a dog
- had a series of stripes along its body and tail
- ate an entirely **1** diet
- probably depended mainly on **2** when hunting
- young spent first months of life inside its mother's **3**

Decline and extinction

- last evidence in mainland Australia is a 3,100-year-old **4**
- probably went extinct in mainland Australia due to animals known as dingoes
- reduction in **5** and available sources of food were partly responsible for decline in Tasmania

Test 3

Questions 6–13

Do the following statements agree with the information given in Reading Passage 1?

In boxes 6–13 on your answer sheet, write

TRUE	<i>if the statement agrees with the information</i>
FALSE	<i>if the statement contradicts the information</i>
NOT GIVEN	<i>if there is no information on this</i>

- 6 Significant numbers of thylacines were killed by humans from the 1830s onwards.
- 7 Several thylacines were born in zoos during the late 1800s.
- 8 John Gould's prediction about the thylacine surprised some biologists.
- 9 In the early 1900s, many scientists became worried about the possible extinction of the thylacine.
- 10 T. T. Flynn's proposal to rehome captive thylacines on an island proved to be impractical.
- 11 There were still reasonable numbers of thylacines in existence when a piece of legislation protecting the species during their breeding season was passed.
- 12 From 1930 to 1936, the only known living thylacines were all in captivity.
- 13 Attempts to find living thylacines are now rarely made.

READING PASSAGE 2

You should spend about 20 minutes on **Questions 14–26**, which are based on Reading Passage 2 below.

Palm oil

- A** Palm oil is an edible oil derived from the fruit of the African oil palm tree, and is currently the most consumed vegetable oil in the world. It's almost certainly in the soap we wash with in the morning, the sandwich we have for lunch, and the biscuits we snack on during the day. Why is palm oil so attractive for manufacturers? Primarily because its unique properties – such as remaining solid at room temperature – make it an ideal ingredient for long-term preservation, allowing many packaged foods on supermarket shelves to have 'best before' dates of months, even years, into the future.
- B** Many farmers have seized the opportunity to maximise the planting of oil palm trees. Between 1990 and 2012, the global land area devoted to growing oil palm trees grew from 6 to 17 million hectares, now accounting for around ten percent of total cropland in the entire world. From a mere two million tonnes of palm oil being produced annually globally 50 years ago, there are now around 60 million tonnes produced every single year, a figure looking likely to double or even triple by the middle of the century.
- C** However, there are multiple reasons why conservationists cite the rapid spread of oil palm plantations as a major concern. There are countless news stories of deforestation, habitat destruction and dwindling species populations, all as a direct result of land clearing to establish oil palm tree monoculture on an industrial scale, particularly in Malaysia and Indonesia. Endangered species – most famously the Sumatran orangutan, but also rhinos, elephants, tigers, and numerous other fauna – have suffered from the unstoppable spread of oil palm plantations.
- D** 'Palm oil is surely one of the greatest threats to global biodiversity,' declares Dr Farnon Ellwood of the University of the West of England, Bristol. 'Palm oil is replacing rainforest, and rainforest is where all the species are. That's a problem.' This has led to some radical questions among environmentalists, such as whether consumers should try to boycott palm oil entirely.

Meanwhile Bhavani Shankar, Professor at London's School of Oriental and African Studies, argues, 'It's easy to say that palm oil is the enemy and we should be against it. It makes for a more dramatic story, and it's very intuitive. But given the complexity of the argument, I think a much more nuanced story is closer to the truth.'

Test 3

- E** One response to the boycott movement has been the argument for the vital role palm oil plays in lifting many millions of people in the developing world out of poverty. Is it desirable to have palm oil boycotted, replaced, eliminated from the global supply chain, given how many low-income people in developing countries depend on it for their livelihoods? How best to strike a utilitarian balance between these competing factors has become a serious bone of contention.
- F** Even the deforestation argument isn't as straightforward as it seems. Oil palm plantations produce at least four and potentially up to ten times more oil per hectare than soybean, rapeseed, sunflower or other competing oils. That immensely high yield – which is predominantly what makes it so profitable – is potentially also an ecological benefit. If ten times more palm oil can be produced from a patch of land than any competing oil, then ten times more land would need to be cleared in order to produce the same volume of oil from that competitor.

As for the question of carbon emissions, the issue really depends on what oil palm trees are replacing. Crops vary in the degree to which they sequester carbon – in other words, the amount of carbon they capture from the atmosphere and store within the plant. The more carbon a plant sequesters, the more it reduces the effect of climate change. As Shankar explains: '[Palm oil production] actually sequesters more carbon in some ways than other alternatives. [...] Of course, if you're cutting down virgin forest it's terrible – that's what's happening in Indonesia and Malaysia, it's been allowed to get out of hand. But if it's replacing rice, for example, it might actually sequester more carbon.'

- G** The industry is now regulated by a group called the Roundtable on Sustainable Palm Oil (RSPO), consisting of palm growers, retailers, product manufacturers, and other interested parties. Over the past decade or so, an agreement has gradually been reached regarding standards that producers of palm oil have to meet in order for their product to be regarded as officially 'sustainable'. The RSPO insists upon no virgin forest clearing, transparency and regular assessment of carbon stocks, among other criteria. Only once these requirements are fully satisfied is the oil allowed to be sold as certified sustainable palm oil (CSPO). Recent figures show that the RSPO now certifies around 12 million tonnes of palm oil annually, equivalent to roughly 21 percent of the world's total palm oil production.
- H** There is even hope that oil palm plantations might not need to be such sterile monocultures, or 'green deserts', as Ellwood describes them. New research at Ellwood's lab hints at one plant which might make all the difference. The bird's nest fern (*Asplenium nidus*) grows on trees in an epiphytic fashion (meaning it's dependent on the tree only for support, not for nutrients), and is native to many tropical regions, where as a keystone species it performs a vital ecological role. Ellwood believes that reintroducing the bird's nest fern into oil palm plantations could potentially allow these areas to recover their biodiversity, providing a home for all manner of species, from fungi and bacteria, to invertebrates such as insects, amphibians, reptiles and even mammals.

Questions 14–20

Reading Passage 2 has eight sections, **A–H**.

Which section contains the following information?

Write the correct letter, **A–H**, in boxes 14–20 on your answer sheet.

- 14 examples of a range of potential environmental advantages of oil palm tree cultivation
- 15 description of an organisation which controls the environmental impact of palm oil production
- 16 examples of the widespread global use of palm oil
- 17 reference to a particular species which could benefit the ecosystem of oil palm plantations
- 18 figures illustrating the rapid expansion of the palm oil industry
- 19 an economic justification for not opposing the palm oil industry
- 20 examples of creatures badly affected by the establishment of oil palm plantations

Questions 21 and 22

Choose **TWO** letters, **A–E**.

Write the correct letters in boxes 21 and 22 on your answer sheet.

Which **TWO** statements are made about the Roundtable on Sustainable Palm Oil (RSPO)?

- A** Its membership has grown steadily over the course of the last decade.
- B** It demands that certified producers be open and honest about their practices.
- C** It took several years to establish its set of criteria for sustainable palm oil certification.
- D** Its regulations regarding sustainability are stricter than those governing other industries.
- E** It was formed at the request of environmentalists concerned about the loss of virgin forests.

Test 3

Questions 23–26

Complete the sentences below.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes 23–26 on your answer sheet.

- 23 One advantage of palm oil for manufacturers is that it stays even when not refrigerated.
- 24 The is the best known of the animals suffering habitat loss as a result of the spread of oil palm plantations.
- 25 As one of its criteria for the certification of sustainable palm oil, the RSPO insists that growers check on a routine basis.
- 26 Ellwood and his researchers are looking into whether the bird's nest fern could restore in areas where oil palm trees are grown.