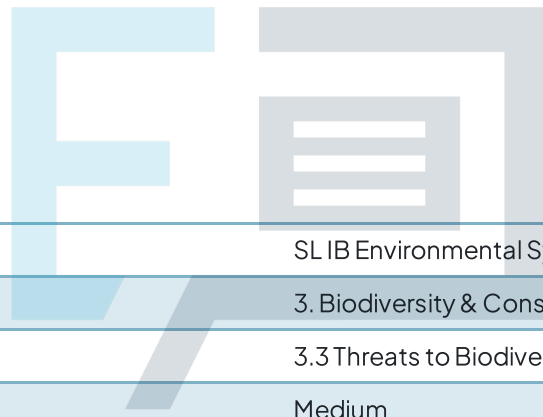




3.3 Threats to Biodiversity

Question Paper



Course	SL IB Environmental Systems & Societies (ESS)
Section	3. Biodiversity & Conservation
Topic	3.3 Threats to Biodiversity
Difficulty	Medium

Exam Papers Practice

To be used by all students preparing for
SL IB Environmental Systems & Societies (ESS)
Students of other boards may also find this useful

Question 1a

Below is some information about the plant *Rafflesia arnoldii*:

- It grows in the jungles of South East Asia
- It is noted for having the largest flower of any plant on Earth
- The flower is a bright red-brown colour and grows up to one metre in diameter
- The flower smells like rotting flesh to attract flies, which pollinate it

The photograph below shows a flower of *R. arnoldii*.



"Anthony and Rafflesia" by timjmansfield is licensed under CC BY 2.0. To view a copy of this license, visit <https://creativecommons.org/licenses/by/2.0/?ref=openverse>.

This species is now classed as endangered.

Suggest **three** reasons why this plant has become an endangered species.

Exam Papers Practice [3 marks]

Question 1b

The Royal Botanic Gardens at Kew plays an important role in plant conservation. *Rafflesia arnoldii* is one of the plant species that has been conserved at Kew.

Explain why it is sometimes necessary to conserve a plant species, such as *R. arnoldii*, outside its natural habitat (*ex-situ*).

[3 marks]

Question 2a

The African elephant, *Loxodonta africana*, is a large herbivorous mammal that mainly feeds on tree leaves. It has the longest gestation period of any land mammal and usually produces one offspring at a time. Its habitat is mainly savannah.

The meerkat, *Suricata suricatta*, also lives in the savannah of southern Africa. It is a carnivorous mammal and feeds on insects, worms, snails and other invertebrates. It grows up to 30 cm in length and lives in large family groups in burrows.

By contrasting these two species, suggest why the meerkat is less likely than the elephant to become endangered. Use your own knowledge and the information provided above.

[3 marks]

Question 2b

Every year, the International Union for the Conservation of Nature and Natural Resources (IUCN) publishes a list of endangered species known as the Red List. The Red List has a very high proportion of vertebrates compared to invertebrates.

Suggest **two** reasons why the Red List has many more vertebrates than invertebrates.

[2 marks]

Question 3a

i)

Explain what is meant by the term *invasive species*.

[1]

ii)

Invasive species can impact their new environments in a variety of ways.

Explain the negative effects that invasive species can have on an ecosystem.

[3]

[4 marks]



Exam Papers Practice

Question 3b

The Bali starling, *Leucopsar rothschildi*, is found on the island of Bali, Indonesia.

The photograph below shows a Bali starling.



The International Union for Conservation of Nature (IUCN) is the world's largest global environmental organisation. The IUCN Red List of Threatened Species™ evaluates the conservation status of plant and animal species.

The Bali starling is categorised as critically endangered on the IUCN Red List, which means that it is nearly extinct in the wild.

The Bali starling is protected by Indonesian law and trapping of the birds for sale as pets is illegal. In 2001 there were only six Bali starlings in the wild and about 1000 in captivity.

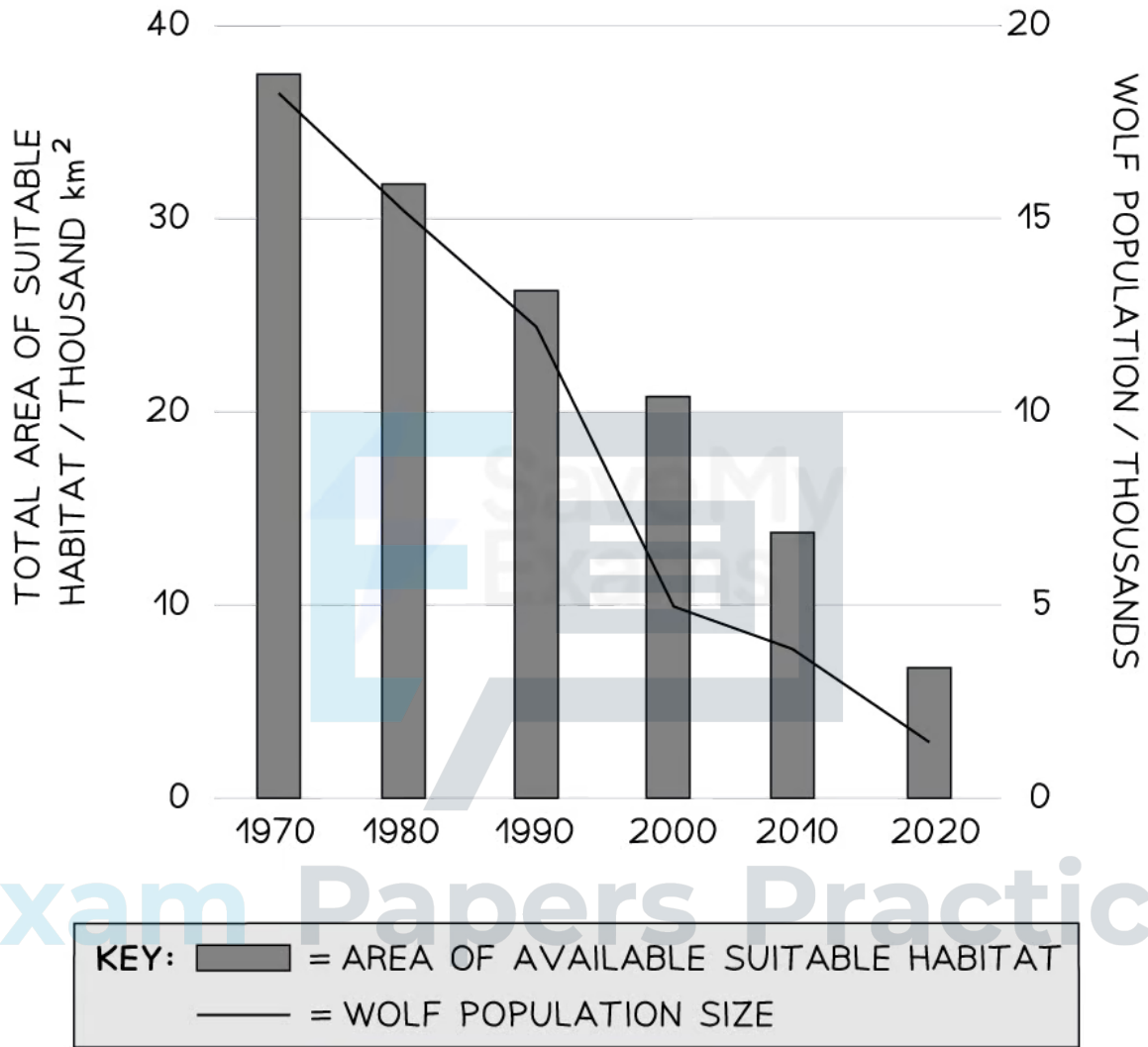
Suggest reasons, other than the trapping of the birds for sale as pets, for the very low numbers of Bali starlings in the wild

[3 marks]

Exam Papers Practice

Question 4

The figure below shows the data for a wolf population and the amount of suitable habitat that is available to the wolves.



i) Outline the relationship between wolf population size and the amount of suitable habitat between 1970 and 2020.

[1]

ii) Calculate the yearly rate of population decline between 1990 and 2000.

[1]

[2 marks]