

8 The black-footed ferret, shown in the photograph below, is one of North America's most endangered species. In 1986, only 18 individuals were living in the wild. These were used to start a captive breeding programme. Six zoos are now involved in this programme.



Black-footed ferret

Magnification  $\times 0.1$

\*(a) Suggest how this captive breeding programme in the six zoos ensures that genetic diversity is maintained in this species.

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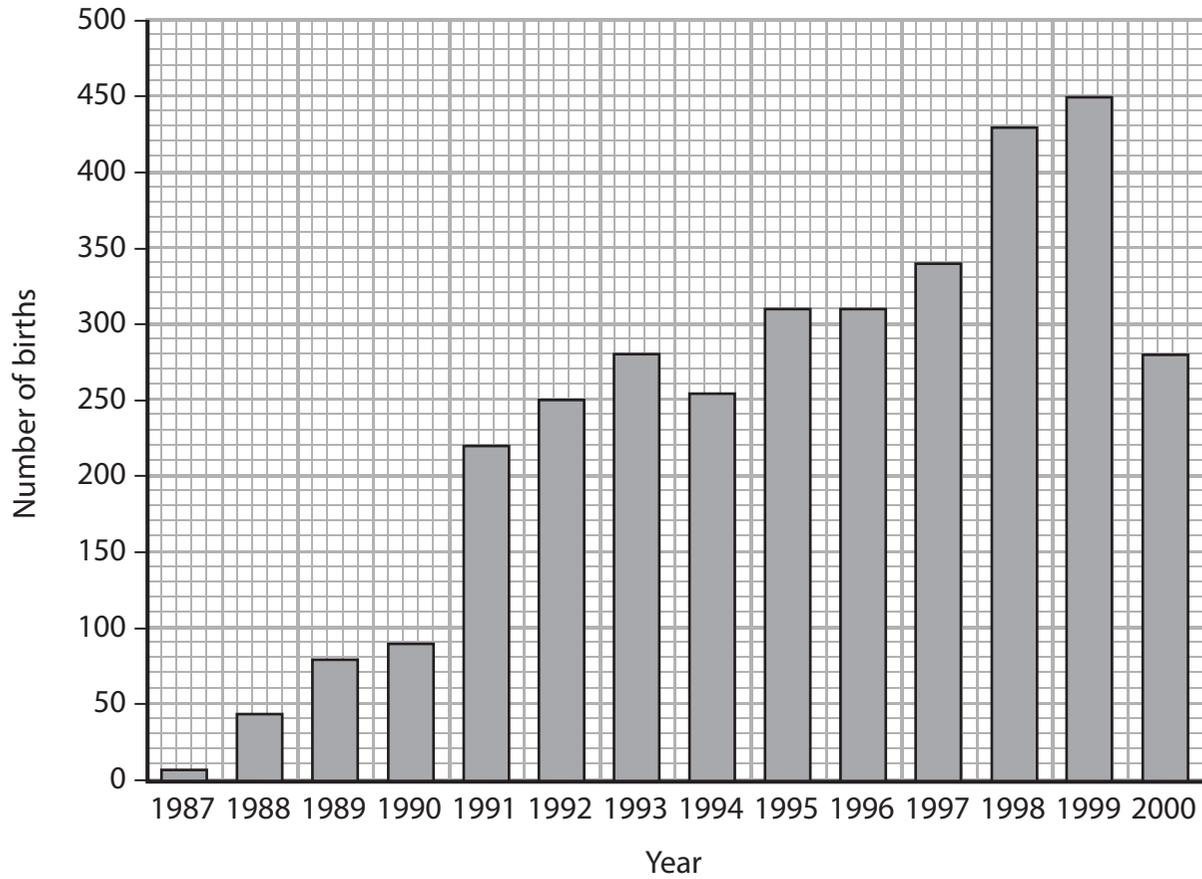
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(b) The graph below shows the number of black-footed ferrets in captivity born each year from 1987 to 2000.



(i) Each year since 1991, 200 black-footed ferrets have been released into the wild.  
Suggest why no black-footed ferrets were released into the wild before 1991.

(2)

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(ii) Using the information in the graph, suggest how effective the captive breeding programme was between 1991 and 2000.

(2)

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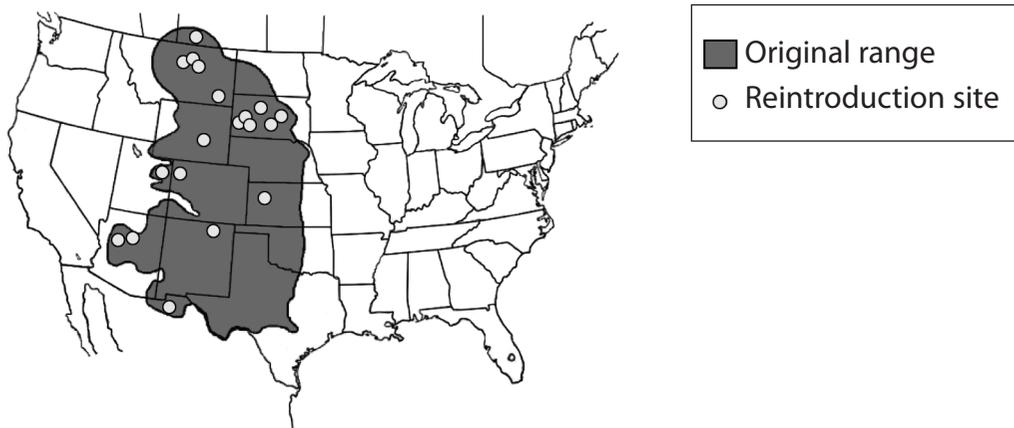
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(c) The map of the USA below shows the original range of the black-footed ferrets and the sites where they have been reintroduced. Their natural habitat is prairie, which is a type of grassland.

Only 1% of the prairie remains undisturbed by human activity.

Black-footed ferrets mainly prey on prairie dogs. Prairie dogs are treated as pests by farmers who may use poison to kill them.



Suggest **three** factors that could affect the survival chances of black-footed ferrets when they are reintroduced to the sites shown on the map.

(3)

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(Total for Question 8 = 12 marks)

**TOTAL FOR PAPER = 80 MARKS**

