

2024 Bi H2 Q14

Section: Sustainability and Interdependence

Topic: Social Behaviour

Question Summary

African wild dogs live in social packs. The question asks for the named social behaviour, one advantage beyond higher hunting success, interpretation of a population graph (including a projection), and how wildlife corridors reduce the impacts of habitat fragmentation.

Worked Solution

- (a) The named social behaviour is cooperative hunting by the pack.
- (b) Advantage beyond hunting success: packs defend pups and territory collectively, reducing predation on young; they also share food with injured or subordinate members, improving survival and reproductive success.
- (c)(i) From the graph the population shows an overall decrease across the period shown. Any short-term fluctuations are followed by a downward trend.
- (c)(ii) Projecting the line to 2018 gives an approximate value read from the same gradient. Accept close estimates consistent with the drawn trend and scale.

- (d) Wildlife corridors connect fragmented habitats, allowing movement between patches. This enables gene flow, dispersal of juveniles, access to mates and prey, and recolonisation of empty areas, reducing inbreeding and local extinctions.

Final Answer

- > (a) Cooperative hunting
- > (b) Pack defence and food sharing improve survival and breeding
- > (c)(i) Overall decline across the time period
- > (c)(ii) 2018 value should match a straight-line projection from the graph (accept close estimates)
- > (d) Corridors reconnect habitat -> movement and gene flow -> reduced inbreeding and local extinctions

Revision Tips

- Social behaviour can increase inclusive fitness via cooperation and division of labour.
- When projecting on graphs, extend the established trend and use the same scale.
- Habitat fragmentation reduces population size and genetic diversity; corridors restore connectivity.

