Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

economic: e.g. pollination of crops, tourism income, new medicines; ethical: e.g. every species has a right to exist / duty to future generations

2.2

(i) 100 km^2: larger populations and more habitats; (ii) round: less edge for the same area; (iii) with a corridor: animals can move, find mates and recolonize

2.3

few wolves have a large effect on the whole ecosystem; they reduce elk numbers and change where elk graze; so trees and shrubs by rivers can recover, which helps beavers, birds and riverbanks: a trophic cascade

2.4

restoration repairs a damaged ecosystem towards a target state, e.g. replanting mangroves on a coast; rewilding brings back natural processes and missing species, then lets nature manage itself, e.g. reintroducing beavers or wolves; rewilding has a less fixed target and less human management

3.1

(a) species-based: captive breeding and release / bans on hunting and trade; habitat-based: a network of nature reserves and replanting of bamboo forest

(b) it is popular and appealing, so it attracts public attention and money; protecting its forest habitat also protects many other species there

3.2

award up to [5]: strengths: fish and reef species recover inside the zone; larger fish spill over into fished areas, so catches nearby can rise; protects the whole community, not one species; limitations: cannot stop warming or acidification; fishing communities lose access, so the MPA needs their support and enforcement; conclusion for the case, e.g. effective if well enforced and linked to local incomes such as tourism

3.3

(a) any two: controls deer numbers, so young trees can regrow; restores a missing top predator and natural food webs; increases biodiversity

(b) e.g. conservationists: restores a native species and a natural process; brings eco-tourism; farmers: fear losses of sheep and want compensation; others: hunters lose deer

(c) any two: a large enough area of connected habitat with prey; enough animals released for genetic diversity; support from local people; monitoring after release