Version 1.0 03/10

General Certificate of Education

Environmental Studies 1441

ENVS1 The Living Environment

Report on the Examination

2010 examination - January series

Further copies of this Report are available to download from the AQA Website: www.aqa.org.uk

Set and published by the Assessment and Qualifications Alliance.

The Assessment and Qualifications Alliance (AQA) is a company limited by guarantee registered in England and Wales (company number 3644723) and a registered charity (registered charity number 1073334).
Registered address: AQA, Devas Street, Manchester M15 6EX
Dr Michael Cresswell Director General.

General

This paper proved to be accessible with most candidates able to attempt all questions. There were opportunities for the weaker candidates to score marks and also questions that tested the most able. Some candidates managed to write detailed and accurate answers, but many responses were vague and imprecise. However, there were very few really poor scripts.

Accurate use of terminology and a clear understanding of basic science appeared to be quite rare. A significant proportion of candidates lost marks due to the poor quality of their English. Frequently, straightforward definitions are confused, for example, 'wildlife' does not just refer to animals. Candidates still rewrite the stem of the questions.

One of the key aims of this unit is to test the application of scientific understanding to unfamiliar examples of wildlife conservation. This skill is clearly very difficult for many candidates. This suggests that centres should emphasise the need for their candidates to understand a range of different wildlife conservation strategies and how the key principles apply to them.

Question 1

This question was generally well answered, with almost half gaining full marks. Fewer than 1 % got zero. The most common mistakes were to confuse: DEFRA and the National Trust as an example of an NGO involved with conservation and landscape management; and Leopold Matrix and Public Inquiry as a method of quantifying environmental impacts.

Question 2

This question seemed to be a good discriminator between those candidates who clearly knew the work and could answer the whole question well, and those who simply could not, and scored very badly.

(a) (i) DEFRA was the most common correct answer, although many gave English Nature (which was acceptable even though the agency has changed to Natural England). The Environment Agency, possibly the most likely body to be consulted in such a case, was rarely seen.

(a) (ii) Although only 25 % of candidates got this right, Local Nature Reserve was the most common correct answer.

(b) This was not answered well by the majority; it was typical to see vague and confused statements.

(b) (i) Cost benefit analysis was not well understood (as in the legacy specification). 'CBA needs to be done to see if a project is cost effective' was a characteristic response that was not creditworthy. It must be emphasised that both the benefits **and** costs are financial. Many candidates appeared to equate benefits with environmental gains, rather than monetary gains.

(b) (ii) Environmental Impact Assessment was confused with CBA and some appeared to think that a Leopold Matrix is an EIA rather than just part of one. However, EIA does seem to be understood slightly better than CBA.

(c) This question proved to be a useful discriminator, because very few candidates gained three or four marks for this question. The first marking point seemed to be very straightforward, with candidates making the obvious link between protecting the landscape and protecting habitats, but then they were unable to expand on this. Few demonstrated a real understanding of what landscape protection and landscape enhancement involve.

Question 3

This was quite a high scoring question overall.

(a) (i) This was quite easy for most candidates and nearly 50 % got both marks. Some missed the obvious point about gribbles being detritivores (poorly spelt and frequently confused with decomposers), but got a mark with correct references to food chains. There were some interesting guesses from weaker candidates who appear to believe that gribbles remove wood that is acting as an obstruction. Crustaceans were often equated with insects.

(a) (ii) An easy question that simply required candidates to read the table. Many did assume that more shipping would enable more gribbles, without stating that the ships must be wooden. In the period detailed, this is very unlikely, so stating that more ships equalled more gribbles was insufficient.

(a) (iii) The design of the mark scheme enabled candidates to gain marks even when they demonstrated relatively little detailed understanding. Many candidates described the mark-release-recapture method with varying degrees of success. Typically there was confusion between the names of the Lincoln Index, Simpson's Diversity Index and even the Leopold Matrix. Weaker candidates made vague statements that were not worth marks, such as: 'collect timber and analyse it.' Some appeared to have little understanding of what suspended solids are, and area and volume were also used wrongly.

(b) Fewer than 8 % of candidates failed to score on this question.

Question 4

(a) (i) Only the very best candidates realised that this was about the transfer of energy through a food chain. There were many very poor answers reflecting a limited grasp of the ecological principles that govern population sizes. About 13 % managed to gain a mark.

(a) (ii) Candidates did not appear to understand the question and/or the concept of carrying capacity. Certainly, many did not appear to notice the 'how' in the stem, which meant that methods of management were required. This resulted in many very vague answers with only the 'provision of food' being creditworthy. Predator control was also seen more often than the other marking points. Waffle about environmental resistance or biotic potential and references to resources was given without sufficient detail to gain marks. Many suggested that the way to increase the carrying capacity of a reserve is simply to make it bigger, which does not answer the question.

(b) This question appeared to be quite well done.

(b) (i) Most mentioned 'gene pools', but many lost marks by referring to interbreeding or increasing mutations. Mutations (especially on recessive alleles) may become more obvious in populations with high proportions of homozygosity, but the *rate* of mutation is not necessarily affected. This is probably due to confusion between genetic disorders and mutation.

(b) (ii) More than 60 % of candidates gained both marks for this question, and only 8 % failed to score.

Question 5

(a) (i) Although almost a third got full marks, there did appear to be widespread misunderstanding about the precise meaning of *range of tolerance*. Common misconceptions included the premise that 'range' referred to an area or place; and that range of tolerance was to do with the ability of an organism to *adapt*. A number of candidates did not read the question properly and thought that the geese rather than the eelgrass had a narrow range. Some candidates could not explain the concept but managed to get a mark for mentioning an abiotic factor. It was common to see incorrect references to food resources (for example Giant pandas and bamboo) and very rare to see the third marking point.

(a) (ii) Although over 60 % managed to get at least one mark for this question, the answers revealed a very poor understanding of the nature of migration, which ought to be general knowledge. For example, there were references to eggs being predated when the geese were away. Poor examination technique also let down a number of candidates. Many answers were not related to *migration,* so that the points could equally have been made for non-migratory species. Typically, there was a lack of clarity in the responses which made it hard to mark as it was not clear that shortage of food/ predation etc. related to the *journey.* Candidates frequently made vague statements, such as the environment might change or that the geese would be exhausted or that the weaker ones would die, without giving a reason to explain their answers.

(b) Many candidates found it difficult to apply their knowledge of wildlife conservation to an unfamiliar situation and gave very little factual detail. There were far too many inappropriate and unrealistic answers which included: shortening the migration routes so that the birds don't get too tired; vaccinating *all* birds; clipping wings to prevent migration and; bringing the birds inside and altering the room temperature so that the birds are fooled into thinking they have migrated. Some also appear to think that birds become pregnant. Vague references to creating 'safe flying' corridors were frequently seen. There also was confusion between designations for landscape and wildlife conservation. SPA is not an organisation, contrary to what many appear to believe.

Question 6

(a) Good candidates distinguished between 'factor' and 'condition' and gave appropriate detail. Too many gave one word answers as examples of factors and consequently did not gain marks. Only about 5 % got all three marks.

(b) Generally quite well done, candidates do seem to know what is important when sampling.

(b) (i) 43 % know that sampling is done randomly in order to avoid bias.

(b) (ii) Nearly 60 % got this correct. The most common incorrect response was 'to increase accuracy'.

(c) Reasonably well known although there was a lot of confusion between the Lincoln Index, Diversity Index and even the Leopold Matrix. Some could only give the name of the index but nothing else.

(d) Most candidates gained two or three marks easily for stating predation, competition or disease, but could not expand on these. Better answers described the effects of these factors. Many candidates tried to give appropriate examples of competition and predation which is encouraging as they were clearly trying to add detail. However, examples were not creditworthy in this case.

(e) About a quarter of candidates got all three marks here, with the better ones making more valid points. The Antarctic Treaty appears to be well known. Surprisingly at this level, there were many references to polar bears. It was disappointing to see many answers referring to utterly inappropriate designations or organisations such as DEFRA, AONB, NNR, SPA, SSSI and even The National Trust !

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the **Results statistics** page of the AQA Website.