



## External Assessment Report 2014

Subject(s)	Managing Environmental Resources
Level(s)	Higher

The statistics used in this report are prior to the outcome of any Post Results Services requests

This report provides information on the performance of candidates which it is hoped will be useful to teachers/lecturers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published question papers and marking instructions for the examination.

# Comments on candidate performance

## General comments

All questions in the paper were similar in standard to previous years. Questions were accessible to candidates. A balance was maintained in the marks awarded between those testing Knowledge and Understanding and Problem Solving/Practical Abilities. The quality of answers throughout the paper was generally good, with candidates indicating a very positive attitude to, and understanding of, current environmental issues.

Despite numbers declining this year, we welcomed four new schools as well as maintaining interest from established and returning presentation centres. All presenting centres should be congratulated on the support given to candidates in preparing for this examination and should be delighted with their results. This year, performance in the essay questions was surprisingly good.

The paper covered all three units in an interesting and challenging way with supporting diagrams, images and data. It included environmental issues relating to agricultural, rural and commercial practices, sustainability, renewable resources and non-renewable resources such as energy from biomass, metals and rare elements, food webs, feeding relationships and energy flow and processes, impact of humans on wildlife and conservation measures, practical investigation based on data, national parks and associated issues, aquaculture and its conflicts. The essay-based topics covered managing environmental protection or impact with reference to initiatives, legislation and policies, and impacts on land use in relation to urbanisation and transport or recreation and leisure activities. The paper reflected both national and international environmental issues.

Overall very few questions were not attempted, including essays, and some challenging questions were answered with extended responses that indicated the wide scope of the candidates' knowledge of and interest in environmental issues.

The vast majority of candidates coped well with Section A of the paper, ie the structured questions and discriminating questions in this section of the paper functioned appropriately. There were a number of high scoring candidates who did well in both essays in Section B.

A satisfactory standard was maintained in responses to problem solving and data handling questions but some candidates do find such questions difficult to answer. Also, questions requiring discrete factual information, particularly biological information as detailed in the subject specification, still prove difficult indicating that candidates may require more structured revision of terminology throughout the course.

## Areas in which candidates performed well

### Section A

Candidates performed well particularly in questions 1, 2, 3, 6 and 7 in Section A of the paper. These questions ranged across the three topic areas of the MER specification.

Most candidates showed good knowledge and/or gave sound explanations in the following questions:

- ◆ Question 1(a)(i) & (ii) diversification in farming
- ◆ Question 1(a)(iv) sustainable practices in agriculture
- ◆ Question 1(d)(i) trend shown in graph
- ◆ Question 1(d)(iii) renewable resources
- ◆ Question 2(a) constructing a pie chart
- ◆ Question 2(c) life cycle assessment
- ◆ Question 3(b)(i) & (ii) extracting information from food web
- ◆ Question 3(d)(i) keystone species
- ◆ Question 4(c)(i) impacts of humans on wildlife
- ◆ Question 4(c)(v) park rangers educating the public
- ◆ Question 5(a)(iv) abiotic factors
- ◆ Question 5(b) methods for dealing with litter
- ◆ Question 6(a)(i) organisation and designated conservation zone
- ◆ Question 6(a)(ii) types of land use
- ◆ Question 6(c)(i) SNH
- ◆ Question 7(b) prediction on population change for farmed salmon
- ◆ Question 7(d) conflict and resolution
- ◆ Question 7(e) SEPA
- ◆ Question 7(g) impacts of aquaculture (social, economic, social)

## **Section B: Essays**

In Section B, a significant number of candidates produced detailed and well exemplified accounts this year. Performance was good, with many candidates achieving the average marks and some producing near perfect responses. The average response for the structured questions was 8.9 compared to the average for questions 9A and 9B which was 7.7. This is very positive and may be indicative of improving preparation for essays by centres.

### **Question 8A**

- ◆ Initiatives at local level were numerous and diverse giving candidates an opportunity to deliver meaningful answers.
- ◆ National legislation was well exemplified and discussed in detail by a fair number of candidates. Only a very few candidates could not give examples.
- ◆ Policies of the EU Parliament proved challenging for many, but top candidates did themselves justice in this area discussing CAP / CFP.

### **Question 8B**

- ◆ Quite a number of candidates did not fully explore the measures arising from international conferences such as UNCED (Rio), Kyoto.
- ◆ The cue of SRO in the question provided an opportunity to give a wealth of information on Scotland's energy dynamics.
- ◆ Local authority initiatives were well known and related to impacts of using fossil fuels

### **Question 9A**

- ◆ A wide range of exemplars of land use change arising from urbanisation and transport development were provided. Many candidates were able to deliver distinct and

appropriate impacts and avoid overlap/repetition. Difficulties arose from citing examples of control and management of land use change.

### **Question 9B**

- ◆ Recreation and leisure was well discussed by candidates in relation to its impacts. Controlling impacts was also done well. A fair number of candidates overlooked the 'land OR water use' and discussed both, losing marks in so doing. A number of candidates called upon their awareness raised by field excursions or gained in their personal travels.

## **Areas which candidates found demanding**

### **Section A**

In Section A the following questions in questions across the paper proved difficult for a number of candidates:

- ◆ Question 1(a)(iv): correct biological terms eg eutrophication/bioaccumulation or detailed account were required in response to this question.
- ◆ Question 1(b)(i) & (ii): explanation of duty of care and description of polluter pays principle proved difficult for many candidates.
- ◆ Question 1(c): candidates did not give good responses to the disadvantage of chosen crop.
- ◆ Question 2(b)(i) & (ii): ratio and prediction were poorly done.
- ◆ Question 3(f): biological knowledge relating to population dynamics.
- ◆ Question 4(a)(ii): poor knowledge of photosynthesis equation.
- ◆ Question 4(a)(iii): few candidates related biomass accumulation to energy input.
- ◆ Question 4 (b): many candidates can still not distinguish between detritivores and decomposers. A high quality answer was required for the role of decomposers including reference to chemical breakdown / respiration
- ◆ Question 4(c)(i): lack of recognition of complex community in this context.
- ◆ Question 4(c)(iv): emphasis on practices.
- ◆ Question 5(a)(iv): validity misinterpreted by candidates as reliability.
- ◆ Question 6 (c)(ii): local natural resource needed to be stated.
- ◆ Question 7(a): choice of suitable scale influenced performance.
- ◆ Question 7(f)(i): describe and explain distribution shellfish farms.

## **Advice to centres for preparation of future candidates**

Once again many centres appear to be preparing candidates better for challenging definitions, and knowledge that is subject specific. However, some basic biological terms relating to food webs eg detritivores, decomposers, photosynthesis, and practical work questions were not well attempted. Experience of field work adds another dynamic and challenging teaching method supporting many of the concepts, skills and knowledge base required for this course eg doing a transect, a study of succession.

Candidates have difficulties with questions where an explanation is required, and need to distinguish this from a more straightforward description.

The preparation of candidates for data handling questions — particularly completing the ratio, graph and % change — have not improved significantly over the years. Calculations and graphs are an established aspect of the Higher examination, and practice in these skills is important for improvement.

Attempting both essays is essential to meeting the pass mark. This should be emphasised when training candidates in essay writing. In all essays it is important to relate factual knowledge to the stem of the question. Alert candidates to an either/or situation in the stem of an essay question. Where it is requested, a 'named area' should be clearly discernible.

Practice with past paper questions and providing candidates with succinct definitions using guidance from published marking schemes can be very supportive to candidates. Practice with essay questions in both the structured and unstructured style helps to build up candidates' confidence.

## Statistical information: update on Courses

Number of resulted entries in 2013	362
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Number of resulted entries in 2014	297
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## Statistical information: Performance of candidates

### Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark 110				
A	33.3%	33.3%	99	77
B	31.0%	64.3%	92	66
C	23.6%	87.9%	70	55
D	2.4%	90.2%	7	49
No award	9.8%	-	29	-

## General commentary on grade boundaries

- ◆ While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.
- ◆ Each year, SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.
- ◆ The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ Where standards are comparable to previous years, similar grade boundaries are maintained.
- ◆ An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in, say, Higher Chemistry, this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related, as they do not contain identical questions.
- ◆ SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.