

SCOTTISH GOVERNMENT CONSULTATION ON THE SCOTTISH SOIL FRAMEWORK

EVIDENCE SUBMITTED BY THE SOCIETY FOR GENERAL MICROBIOLOGY (SGM)

Introduction

The Society for General Microbiology, founded in 1945, is an independent professional scientific body dedicated to promoting the 'art and science' of microbiology. It has now established itself as one of the two major societies in the world in its field, with some 5,000 members in the UK and abroad.

General Comments

This is a holistic document with a genuine and fair appraisal of the attributes that make Scottish soils unique.

Specific Questions

CHAPTER 1 INTRODUCTION

Question 1: The Government is proposing the Scottish Soils Framework in order to provide a policy overview and a coordinating vision for future actions on soil protection. Do you agree this is desirable?

This is valid and an excellent focus for our future.

CHAPTER 2 THE DISTINCTIVENESS OF SCOTTISH SOILS

Question 2: Do you agree that the distinct Scottish soil resource requires protection?

Yes.

CHAPTER 3 THE IMPORTANCE OF SOILS - SOIL FUNCTIONS

Question 3: Do you agree with the analysis of the main soil functions presented here?

The coverage is correct although the aspect of biodiversity should be stated to be inclusive of genetic, phenotypic and process from the outset. And while soil is indeed a habitat the key functional process determine the relative success of the desired attributes.

CHAPTER 4 SOILS IN THE CONTEXT OF CLIMATE CHANGE

Question 4: Do you agree with our analysis of soils in the context of climate change?

The coverage and the information delivered is valid. Is there not, however, an issue of inevitability of a changing climate and could this not be described as "adapting to a changing environment".

CHAPTER 5 PRESSURES ON SOILS

Question 5: Do you agree with the analysis of the pressures and threats faced by Scottish soils? If not, which other threats need to be considered?

The points raised are valid. What about other areas such as mechanisation, legacy of persistent organic pollutants, biodiversity of vegetation, burning as a control of vegetation in uplands, habitat loss of peatland, acidification in de-

cultivated land? Coverage of perceived former problems and the reasons for discounting would also be valid.

CHAPTER 6 POLICIES FOR SOIL PROTECTION

Question 6: Do you agree with our analysis of the current role of soils in existing policy framework?

The main components of the list are valid, but a form of grouping of similar issues would be a valuable approach.

Question 7: Where do significant gaps in soil protection exist?

- i. quantification and management of diffuse pollution
- ii. impact of roads, railways and airports on neighbouring soils
- iii. soils impacted by MoD activities (these are different from brownfield and industrial)
- iv. soil recovery and reclamation – defining soil function in the context of future use.

Question 8: What are your views on the impact of climate change on the effectiveness of the existing soil protection policy framework?

The impact on soil will be sequential and less obvious. The uplands have less snow so the peatlands have a longer drier period. The Cairngorms are surrounded by mineral soils that are emerging through the deep peats and the waters of the autumn get darker and carry fuller DOC. This is an indirect impact.

The forms and recalcitrance of carbon in soils goes un-measured and the impacts are changing without observation. Furthermore the change in climate changes cropping and harvesting patterns that may accelerate these issues. These are just a few examples.

CHAPTER 7 VISION AND FUTURE FOCUS

Question 9: Views are invited on the vision and aim.

Soils are part of an integrated environment. The expansion of forests and changes in landuse must be seen in the context of the soils that are impacted. This must be the basis of the vision. All landuse change strategy (intentional or inevitable) must audit the changes in the soil and consider the long term impacts by assessing benefit against harm. A conceptual hazard or risk assessment approach.

Question 10: Views are invited on the outcomes, to which specific activities contribute to. Should we be adding additional outcomes?

Outcomes should reflect other wider policy statements. Agriculture, forestry, urbanisation evolution must be considerate of soil. The Scottish Government ought not to try for an exhaustive list here, rather to embody other decisions with best soil practice.

Question 11: Views are invited on the four work areas under which future activities will be carried out.

Area 1. yes

Area 2. yes, but integrate and make use of existing data. Not just soil and Land Capability for Agriculture maps, but published papers and Government work from all UK agencies that have soil questions at their core. Such an audit should then link to a prioritisation of what data is most needed for the next decade or so

Area 3. yes, but also disseminate to many other groups – those that use National Parks, those that live near farms and forests, those that enjoy to garden. Soil is a dynamic discipline where every citizen has knowledge to pass and to integrate

Area 4. yes, as above.

Question 12: Have the right activities been identified to contribute to achieving the outcomes?

A detailed audit should be sought and addressed/disseminated through a review group.

Question 13: Are additional activities required?

Raising the profile of the area and the protection and the link to Europe.

Question 14: Which activities need to be prioritised?

That would depend upon the budget?

Question 15: What are your views on future stakeholder engagement?

The correct people must target suitable audiences. Schools, universities, professional groups, environmentalists, farmers, foresters, etc need to be open to forums where transfer of knowledge is tailored to their needs.

Sources

This evidence has been prepared on behalf of SGM by Dr Graeme Paton, University of Aberdeen.

About the SGM

Society membership is largely from universities, research institutions, health and veterinary services, government bodies and industry. The Society has a strong international following, with 25% of membership coming from outside the UK from some 60 countries.

The Society is a 'broad church'; its members are active in a wide range of aspects of microbiology, including medical and veterinary fields, environmental, agricultural and plant microbiology, food, water and industrial microbiology. Many members have specialized expertise in fields allied to microbiology, including biochemistry, molecular biology and genetics. The Society's membership includes distinguished, internationally-recognised experts in almost all fields of microbiology.

Among its activities the Society publishes four high quality, widely-read research journals (*Microbiology*, *Journal of Medical Microbiology*, *Journal of General Virology* and *International Journal of Systematic and Evolutionary Microbiology*). It also publishes a highly respected quarterly magazine, *Microbiology Today*, of considerable general educational value. Each year the Society holds two major scientific meetings attended by up to 1500 microbiologists and covering a wide range of aspects of microbiology and virology research.

The governing Council of the SGM has a strong commitment to improving awareness of the critically important role of microbiology in many aspects of human health, wealth and welfare. It has in this connection recently initiated a 'Microbiology Awareness Campaign' aimed at providing information to the government, decision makers, education authorities, media and the public of the major contribution of microbiology to society.

An issue of major concern to the Society is the national shortage of experienced microbiologists, particularly in the field of clinical microbiology and in industry. To attempt to improve this situation long-term, the Society runs an active educational programme focused on encouraging the teaching of microbiology in university and college courses and in the school curriculum, including primary schools. Some 570 schools are corporate members of SGM.

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