

Environmental Audit Committee Soil Health

Background to CIWEM

1. CIWEM is the leading independent Chartered professional body for water and environmental professionals, promoting excellence within the sector. The Institution provides independent comment on a wide range of issues related to water and environmental management, environmental resilience and sustainable development.
2. CIWEM welcomes the opportunity to respond to the Environmental Audit Committee inquiry on soil health. This response has been formulated with the assistance of our Natural Capital Network of technical members. Further information on the protection and enhancement of soils can be found in CIWEM's Policy Position Statement on the subject¹.

Summary

3. Soil is a fundamental and essentially non-renewable natural resource. Soils perform a number of valuable functions, or ecosystem services, for society including nutrient cycling, water regulation, carbon storage, support for biodiversity and wildlife, and providing a platform for food and fibre production and infrastructure.
4. Soils in the UK continue to be degraded by human activities, such as intensive agriculture, industrial pollution and urban development. Future climate change has the potential to exacerbate these impacts, resulting in further degradation.
5. Legislation and policy around soil protection is limited. A European Framework Directive is needed to protect and enhance soils. Current initiatives on soil monitoring, sewage sludge and biowaste are likely to be more successful if tackled as part of a wider integrative framework than if approached in a piecemeal way.
6. Soil health must be made a priority in the Government's upcoming 25 year plan for the natural environment with sufficient resources made available to ensure the aims can be delivered.

Response to consultation questions

How could soil health best be measured and monitored? How could the Government develop a strategy for tracking soil health?

7. This inquiry into soil health is welcomed and needed. The importance of getting this right and creating a framework which allows repeated monitoring should not be underestimated. As such, the team set up to deliver this need to have adequate and appropriate resources

(with a long-term and secure remit) and draw on the expert knowledge within the UK soil science community.

8. Soil health cannot be measured directly, so indicators (physical, chemical, and biological properties, processes, or characteristics) are generally used. Any new measurement/monitoring scheme for soil health should ensure it draws upon previous work, such as the National Soil Inventory and the Countryside Survey. Here work has been undertaken in terms of identifying what the best metrics for determining soil health are, and again these should be referenced and built upon.
9. Measurements should additionally seek to assess soil function overall, for a given set of required services and not just individual attributes. There should also be some measure of total available soil resource to ensure soil loss through sealing is captured, as well as account taken of the potential effects of climate change.

[What are the benefits that healthy soils can provide to society?](#)

10. The benefits of soils and the central role they play in the delivery of multiple ecosystem services is known and accepted. Healthy and functional soils are critical for sustainable food production, for reducing flood risk and filtering water, storing carbon as well as actively removing carbon from the atmosphere in some cases. Healthy and functional soils support the biodiversity and landscapes we see which can contribute significantly to our health and wellbeing. The diversity of soil microorganisms is also likely to lead to further medical discoveries.

[What are the consequences of failing to protect soil health for the environment, public health, food security, and other areas?](#)

11. Failing to protect soil health will result in greater flooding, costlier food and water and reduced production yields. The recent flooding has highlighted the vulnerability of homes and assets to changing climatic patterns. The speed at which water runs off land which has limited vegetation cover and where the soils are compacted is part of the problem; these soils are not healthy and are not fully functional.
12. Soil loss as a result of increased overland flow causes problems not just to the potential future productivity of the land but also to the water environment through silting up of watercourses and eutrophication. The mismanagement of soil can affect their ability to store carbon which is a particular issue in the uplands where organic soils are drained. With soils so central to the provision of ecosystem services all these will be affected if we do not focus on ensuring our soils are healthy.

[What measures are currently in place to ensure that good soil health is promoted? And what further measures should the Government and other organisations consider in order to secure soil health?](#)

13. Legislation and policy around soil protection is limited. Biodiversity, water and air are covered by substantial European legislation, transposed into English law. The lack of a similar framework for soils is noticeable and would help secure the required commitment to protect and improve the health of our soils.

14. There are a range of guidance documents, for example those produced by Defra (such as the Soil Strategy and the Construction code) and previously MAFF, but these require review, consolidation and updating, and need clear ownership and enforcement. The planning system, and those who work within this, also need to better understand the importance of soil health; more resources will be needed within Natural England, the Environment Agency and within Local Planning Authorities to ensure this can be achieved.
15. Compliance requirements for soil health are needed including soil testing and removal of compaction. Restricting the areas currently growing 'at risk' crops such as maize and winter harvested vegetable where climate or rainfall makes them tricky to harvest, and insist on rough cultivation within 24 hours of harvest would reduce soil loss.

What role (if any) should soil health play in the Government's upcoming 25 year plan for the natural environment?

16. Soil health must be made a priority. As noted in the response to the previous question, along with air, water and biodiversity it needs to be given equal status and focus. The strategy developed must recognise the interrelationships between these aspects and the ability for healthy soils to deliver multiple benefits to society. This must be enshrined in policy and sufficient resources made available to ensure the aims can be delivered.

ⁱ CIWEM. 2012. Protecting and enhancing soils, policy position statement. Available from: <http://www.ciwem.org/media/1684753/Protecting%20and%20enhancing%20soils.pdf>