SUSTAINABLE SOILS ALLIANCE

11th May 2022

Nature Recovery Green Paper: Protected Sites and Species
Consultation response by the Sustainable Soils Alliance

The Sustainable Soils Alliance (SSA) was launched in 2017 to address the current crisis in our soils. Its aim is to campaign to restore UK soils to health within one generation by seeing soil health elevated to where it belongs as a priority alongside clean air and clean water. The SSA is a non-profit organisation (CIC number 10802764).

We would like to begin by highlighting the important but often neglected role soils play in supporting both protected sites and species on land. Healthy soils are critical to both aboveground and belowground biodiversity in such sites by providing nutrients and water as well as liveable habitats for flora and fauna. Healthy soils are also essential for flood protection, water purification, food production, and climate change mitigation.

With 28% of land currently being protected in the UK, it stands to reason that 28% of soils should also be protected. Yet, as the Green Paper highlights, most of this land is not in good condition, and when it comes to soil, the lack of investment in nationwide soil monitoring in England means we are unable to get an accurate and comprehensive picture of the state of soils in such sites. Furthermore, adequate policies to restore, protect, and maintain soil health are yet to be put in place and implemented.

There is also a research gap when it comes to understanding the link between soil health and species decline, and as it stands, we know too little about soil meso and micro fauna in the UK to adequately protect such species. However, it is evident that soils have a vital relationship to all living organisms on land, hence their health should be of utmost priority when it comes to nature recovery through protected sites and species.

We'd like to highlight the current policy and research gaps relevant to this Green Paper when it comes to: soil health targets and monitoring, soil maps and data, soil biodiversity, soil knowledge, soil regulations, and the soil carbon marketplace. The framework for a Soil Health Action Plan for England (SHAPE) is due to be out for consultation soon, and we hope that it will seek to address these gaps and as such, be an opportunity to meet the UK Government's ambition to restore nature and halt the decline of species by 2030. We strongly encourage Defra to take advantage of SHAPE and ensure it supports the new approach to protecting sites and species proposed by this Green Paper.

Protected sites: a new consolidated approach

Soil health target

The Sustainable Soils Alliance welcomes a new approach to protected sites that seeks to help to address the drivers of nature's decline including soil health and would draw attention to its goal to "*simplify and streamline environmental regulation, with a focus on delivering the legally binding targets now enshrined in the Environment Act*". To that end, we would like to highlight that the 25 Year Plan for the Environment sets out a government ambition for sustainably managed soils by 2030, but there is no legally binding

target to underpin this – or to direct the regulations referred to. The Environment Act created the mechanism for this target to be established – however this can only happen once the baseline data against which a target can be measured has been established.

Defra is working to establish such a baseline for soil under the Natural Capital Ecosystem Assessment (NCEA). In the meantime, it is developing a standardised methodology for measuring soil structure (Soil Structure Measuring and Monitoring (SSMM) scheme). This will see farmers paid to assess their soil according to a standardised protocol (for soil organic matter, earthworms and visual assessment) and may be expanded to include other land uses which could cover protected sites such as woodland. This data will be collected by Defra, enabling a non-legally binding interim target. This may in time feed into the NCEA, providing further evidence to support a future soil health target under the Environment Act.

We anticipate this will lead to consistent metrics and baselines for soil health, and we hope that a new approach to protected sites on land will take advantage of the new evidence that will be collected under this SSMM scheme. In order for this to happen, we believe there should be an ambition for the scheme to be embedded into both the Local Nature Recovery Schemes as well as Landscape Recovery and be expanded as a matter of priority to include non-agricultural land, to ensure soil health is adequately measured and tracked over time to inform us of a direction of travel in soil health across the various habitats found in protected sites.

Soil maps and data

Adequate and accessible soil maps are also required to ensure protected sites are managed appropriately according to their soil types and context. Defra commissioned the SSA last year to help explore how England's soil maps can better support the delivery of environmental policies and national commitments and this work highlighted that soils data needs to be available to help the understanding of the influence of soil on other elements (such as woodland, water) and to help inform nature restoration/conservation initiatives, land use planning, climate change adaptation/mitigation, carbon storage, water management, woodland creation and risk management.

We hosted a stakeholder workshop on the subject and a workshop report is due to be published by Defra imminently. We suggest that Defra considers the implications of our recommendations on the various soil data needs and accessibility in England to support government ambition for adequately managing protected sites on land.

Protecting species

Any new approach that seeks to make wildlife protection and management more efficient and science-led, must recognise the clear research gap when it comes to understanding the linkages between soil health and protected species as well as understanding the state of soil biodiversity in of itself.

Soil biodiversity was not considered in the Green Paper, yet, the total biomass belowground generally equals or exceeds that aboveground, whilst the biodiversity in the soil always exceeds that on the associated surface by orders of magnitude, particularly when measured at the microbial scale. A teaspoon of soil contains more living organisms than there are people in the world (FAO, 2020), including bacterial cells, fungi, nematodes (microorganisms and microfauna) as well as meso and macro/megafauna represented by arthropods, earthworms and mammals. The soil biota plays many fundamental roles in delivering key ecosystem services, including driving nutrient cycling and regulation of water flow and storage; regulation of soil and sediment movement; soil structure maintenance; and detoxification of pollutants and regulation of atmospheric composition. Yet, globally, only 1% of soil organisms species are currently known. Further research and investment are required in order for us to understand the state of soil biodiversity in England and the UK.

When it comes to connecting soil management practices with soil biodiversity, we are constrained by the lack of a nation-wide monitoring of soil biology and health referred to above. We do not know which management practices to encourage due to a lack of evidence at a national scale.

We hope that SHAPE will provide an opportunity to address these gaps in both research and monitoring on soil biodiversity, and that this work will be able to feed into the government's new approach to protecting land and species and feed into legally binding targets on biodiversity.

Delivering for nature through public bodies

Soil in Arms Length Bodies (ALBs)

Building on the above, we hope that SHAPE will also provide an opportunity to review the state of soils knowledge throughout ALBs, ensuring knowledge exchange is occurring across generations through training, advice and guidance, as well as ensure opportunities present in technological advances are seized - to adequately understand how soil health can be restored, protected and maintained according to specific contexts (soil type, land use and climate). Such knowledge will be critical in informing the management of protected sites.

Regulatory baseline for soil health

In light of the Government's commitment to reforming both Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) processes, we'd like to address the role of such regulations in protecting soil health alongside the ways in which the current regulations in place inadequately support soils.

Following the announcement of the Government's ambition to publish a SHAPE in October 2021, the Institute of Environmental Management & Assessment (IEMA) launched its latest Impact Assessment Guidance, '*A New Perspective on Land and Soil in Environmental Impact Assessment*', in the hope to help practitioners understand and record the full environmental implications of development on land and soil, embedding sustainable soil management throughout EIA. The guidance recommends a new approach taking account of all of the functions soils provide, including storing carbon, protecting water quality, reducing flood risk and providing a home for nature. We encourage Defra to ensure future reforms help embed sustainable soil management throughout EIA in such ways.

There is currently no overarching regulatory framework for soils in the UK or at a devolved level underlying EIA and SEA processes. Instead, soil management is governed by a wide variety of separate legislative instruments which impact on soils either directly or indirectly (these were not created with soil health specifically in mind – more often than not they are designed to protect other elements such as water from being affected by soil degradation - and as such, do not address holistically the range of threats facing soil, or the services soils provide).

In light of the above, it is critical for any new regulation regime developed to regulate potentially damaging activities on all protected sites to be supported by a clear, robust regulatory framework to reflect soil health. As such, we have called for the following in the past – all of which will deliver clear – direct and indirect – benefits for protected sites and species that depend upon soils:

- A dedicated soil-specific policy instrument, created with soil protection and improvement outcomes specifically in mind. This could eventually lead to a Soils Act (such as the 1989 Water Act).
- Ensure rules and guidance are widely and clearly communicated and policed, with a necessary level of investment committed to their enforcement.
- Awareness and understanding of soil-specific regulations to be improved among relevant stakeholders including advisory services, business players etc.

Financing nature recovery

This Green Paper is right to identify emerging financial support systems, including private markets, as important tools in their ability to monetise a variety of ecosystem benefits. This is the case with the soil carbon marketplace, which has an important role to play in realising biodiversity net gain (and other environmental benefits) and delivering vital new income streams.

It is crucial to note however, that whilst the recent focus on soil carbon is to be welcomed, this private marketplace must be underpinned by high standards, and the interrelations between soil carbon and biodiversity should be better understood with the right mechanisms in place to allow for better accounting.

We would like to draw your attention to the SSA's work as part of an Environment Agency funded Consortium developing a UK Farm Soil Carbon Code, a novel piece of market infrastructure that aims to create a clear, consistent, and universal approach to the measurement, reporting and verification of soil carbon sequestration that can be applied to a number of land-use practices and management by a range of stakeholders – public and private sectors.

At the heart of the Code project will be a set of minimum standards that all farm soil codes or projects should meet in order to operate in the UK marketplace. These standards would address critical elements e.g. permanence, additionality against which projects can be evaluated – and seen to either pass or fail. They should achieve a levelling up of the marketplace and embed a level of trust in the marketplace for farmers and other users.

Developing appropriate minimum standards for soils outside of agriculture in protected sites is also a necessity. Such standards would ensure the relevance and quantification of soil carbon, in order to transparently 'stack' and bundle soil carbon for the biodiversity net gain compliance market and for the upcoming emerging biodiversity and nutrients markets.

It is necessary to have standards that sit with measures of biodiversity and nutrients so that we can identify and deliver the most effective habitat that locks up carbon – mindful of the fact that soil carbon sequestration is not only about climate change mitigation, but a variety of ecosystem benefits – biodiversity, clean water, flood risk management etc. The standards will facilitate the development of a more effective market to ensure the move to being Nature Positive and enable the essential investment we need into the natural environment.