

Geography Group Report

Jane Harrison

Kate Bailey and Martyn Radcliffe, from the Climate Solutions Group, gave a presentation entitled "Are the World's Soils in Crisis?". Soils are a vital and dynamic resource supporting global ecosystems. They play an essential role in absorbing carbon, filtering water, and feeding mankind. However, only 3% of the world's surface area can support food production and soils are easily degraded or lost through compaction, erosion, pollution and nutrient loss. Crop over-production, over-grazing, rainforest clearance, removal of hedgerows and fenland drainage all cause degradation and in extreme cases desertification. The dustbowl of the American mid-western states, in the 1930s, are an example. Defra has estimated that in England and Wales 2.9 million tonnes of soil are lost every year. It takes 200-400 years for a centimetre of soil to form, so at present rates of loss the UN Food and Agriculture Organisation estimates that the world could run out of topsoil in 60 years.

For soils to regenerate, surfaces need to be secured, soil ecosystems diversified, and moisture retained. Kate outlined several conservation projects including a Chinese and World Bank partnership, in the 1990s, which successfully reduced loss of loess from the dry, eroded north-western plateaus into the Yellow River. Tree planting, terracing, application of organic material and bans on grazing, together with the introduction of sustainable farming practices, have enabled the plateaus to turn green again. In the semi-arid Sahel, there are ambitious plans to avert desertification by creating a 'Great Green Wall of Africa' by 2030, which will be a 15km wide and 8,000km long plant barrier. Rainwater is being conserved in 'half-moon' pools and acacia trees planted to stabilise the soils. Nearer to home, the Allerton Project, on a mixed farm in Leicestershire, has been researching the impact of different soil management techniques and sharing good practice.

Rewilding projects can also benefit soils. In Kazakhstan it is hoped that the reintroduction of native quadrupeds, such as Przewalski's horses, will encourage the regrowth of native plants and increase bio-diversity. In Ennerdale, in the Lake District, dominance of Sitka spruces, over-grazing by sheep and increasing deer populations were leading to the loss of habitats. Since 2003 rivers and mires have been restored, wetlands created, and native tree species reintroduced. Rewilding schemes, however, are not without their opponents.

Kate concluded by suggesting ways in which gardeners can preserve soils. These included protection of organic content through limiting digging and the use of plants to increase water infiltration, provide shade, protect the surface from run-off throughout the year and encourage invertebrates and wildlife.

Next meeting: Thursday 19th December. The Witham. 2pm until 3pm. Gerald Blake "The Geography of the Nativity". No charge.