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Soils of Dartmoor: a fundamental control of its landscape.

term for farmed fieldscape).

I spent my career in soil research in the Southwest of England, and I particularly relished the detailed mapping of soils in the 15 sample surveys for that region. When the project was closed down in the 1980s, it left the important Dartmoor sample un-surveyed; it was the only one of the 15 type areas within Devon and Cornwall not mapped. However I live just outside the National Park and when I retired in 2004 I set about completing the 'box-set' as a *pro bono publico* retirement project. Over a period of ten years and after 600 plus days of fieldwork, that side is now complete as is most of the descriptive text, which also spans the nature and quality of the landscape.

The first map sheet. The map sample shown here (p.1) at final draft stage as LRE 73 goes to press, crosses from the moor to the in-bye with the colours coding different soil types. Abbreviated descriptions of what colour indicates what soil type is as much as I can offer here. *Blue* shows soils with high groundwater; *eastern pink* — indicates dry, free-draining brown earths; *moorland pink* — show the acid, peaty-topped podzols; *speckled purple* — valley peat bogs — Conan Doyle's 'grimpen mires'; *green* — identifies wet hill tops, and *grey* ribbons — medieval tin workings. A second map sheet also in preparation depicts every rock outcrop in the area, from clitter (block fields of periglacial origin) to huge boulders such as hem in the road at Lustleigh, small tors many of these hidden within woodland and large ones which form the well know landscape attraction of this National Park.

Soils characterise the rural landscape in a unique and intimate way. They are closely tied to the form of the ground, often the trees, hedges and even weeds offering clues as to what lies beneath. Soils dictate the land's productivity, economically and biologically and hence its land uses. In this mapped example the 'eastern pink land' — pre-mechanisation — used to be prized potato growing land. Now in pasture it favours burrowing animals earthworms, moles and badgers. Wet pastures in the blue areas, so difficult for the farmer, harbour rare butterflies and their food plants. Moorland ramblers, even

'Yomping Marines and Paras', do well to avoid the speckled purple patches.

And beyond all that there are cultural messages in the soils: the peaty podzols may stem from Bronze Age soil exhaustion; unusually thick topsoils in the orange patch, top right, invite an archaeological explanation; notable areas have been cut for peat. Soils and their use affect the water in rivers, streams and aquifers: humus-rich and clayey soils lock up many pollutants that ease their way through 'less vigilant' sandy ground.

The impact of medieval and later tin working on Dartmoor's landscape is well known and frequently mentioned. But the legacy of the peat cutter is more widespread, if not as spectacular. Commoners have always had the right to cut peat for domestic fuel. It was cut in the spring, left to dry and collected late in the summer. The commoners' cuts (locally known as 'ties') 20cms to 1m deep and about 40 metres long, run downslope to ensure drainage. In places they oblige you to walk up onto relatively dry baulks and down into wet excavated ground. This pattern is reflected in the vegetation — heather on the baulks, *Sphagnum* moss in the dips. In places the tin workers added their own version of 'ties'. Elsewhere lower down the moorland the rural poor cut 'vags'— indifferent quality fuel from the thin peaty tops of other wise mineral soils. On many of the highest hills, peat, sometimes several feet thick, was stripped wholesale by *Carbonarii* licensed by the Duchy of Cornwall. They burned it on the spot in clamps making charcoal to sell away, often to the tin smelters of Cornwall. In the survey area a total of 150 ha of peat was completely removed by the *Carbonarii*. By contrast with the commoners, they worked the hill tops and left doughnut-shaped mounds as the remains of their clamps (locally called 'meilers').

The second map sheet. Impressive granite tors are an emblem of Dartmoor. Yet these emblematic summits are less extensive than the not so eye-catching clitter of boulders

that often mantle the moor and parts of the in-bye. During the soil survey I mapped tors and clitter as 'rock dominant ground'. In the in-bye land many tors and clitters are hidden in woods that have grown up because the land is agriculturally unusable. These woods started with saplings finding sustenance in cracks, crevices and gaps, the rocks protecting them from grazing cattle, sheep and deer. Some even establish and flourish perched on rocks. Much of the rest of the land has scatters of boulders and rock outcrops which vary in their concentration, although some quite large areas are free from them. Sometimes the absence is as a consequence of clearance by farmers.

I mapped phases of contrasting boulderiness: the differences matter to those earning their livings from the land - if you can't drive farm machinery in a straight line it is so much harder. Boulderiness may also have a geological explanation perhaps in terms of jointing, weathering, periglaciation, and slope - but that I have not researched.
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PROJECT HERCULES – FIFTEEN MONTHS IN.

An update from Steven Shuttleworth.

LRE 68 (February 2014) reported that Landscape Research Group is one of 13 partners in a major EU-funded research project called Project HERCULES (an

acronym for HERitage in CULtural landscapES). The purpose of the project is to provide the European Union requires with advice on how best to deal with landscape issues, and specifically on 'the development of sustainable futures for Europe's landscapes: tools for understanding, managing, and protecting landscape functions and values'. HERCULES is organised around a series of 'Work Packages' (WP 1-9), some of which are based on document and GIS-based maps to assess landscape change over time, and some of which are based around detailed case studies of different landscape types across Europe. Full details about the project and its work packages can be found on the Hercules website www.hercules-landscapes.eu.

HERCULES started in December 2013 and runs for 36 months. Fifteen months in, I have been asked 'what has been achieved so far?' Here it is, quite a long account… identified by work programmes.

One of the requirements of the project is to prepare for the EU a range of written reports by key deadlines. These are known as 'deliverables'. They cover a range of topics, from the conceptual to the methodological to the practical. All are subject to a quality assurance process during preparation, and members of the **LRG** HERCULES team have been involved in this work. The topics can be found at http://www.hercules-landscapes.eu/resources.php?deliverables.

WP1 focuses on *'Pan-European systematic review and meta-analysis'*, and forms the conceptual and theoretical backbone of the project. It seeks to define core concepts around cultural landscapes so as to set up a framework, and to ensure consistency between all work packages. The project has produced one deliverable to date, setting out a framework on cultural landscapes and how these are used in the programme. Early findings suggest that integrated landscape management works to enable rather than hinder factors for success in good landscape management, and that setting out some clear principles of landscape steward-

ship, are an effective way of communicating cultural landscape ideas to local people.

WP2 focuses on *'Long-term landscape change'*, aiming to define new procedures which explain long-term development/ transformation of cultural landscapes. This draws on recent insights from landscape archaeology, geography and historical ecology. The project has produced two deliverables to date.

WP3 focuses on *'Landscape-scale case studies (short-term history)'*. It uses case studies of cultural landscapes across Europe to reconstruct the past changes faced by and the dynamics of these landscapes. It assesses the roles of the various driving forces, policies and agents. The first deliverable identifies which landscapes and the LRG HERCULES team contributes to that selection. Work so far has identified several issues for further study: the difference between actual and perceived changes; the valuation of these by local communities; the contrast between map-based analyses versus people-perceived changes; and links to perceived landscape values. However, it is too early to tell if these issues are common across all the study landscapes.

WP4 focuses on *'Cultural landscapes typology and recent dynamics'*. Its aim is to link up insights from WP1, WP2 and WP3. It is also mapping the current distribution of cultural landscapes and the dynamics therein between 1985 and 2010 (and possibly up to 2015), so as to reconstruct recent changes and detect hot-spots and cold-spots of cultural landscape loss. The first deliverable sets out a typology of cultural landscapes. It is becoming clear that there may be potential to link WP4's mapping about past landscape change to WP5's work on future landscape trends, and perhaps to map the effects of landscape protection versus non-protection of landscapes, ie to assess at EU-level what are we losing, and what is at risk.

WP5 focuses on *'Fine- and broad-scale modelling of future landscapes'*.

It builds on the cultural landscape characterization in WP4 to make a model-based assessment of processes of change in cultural landscapes at multiple levels, connecting EU level dynamics with local decision-making by land owners and managers. The first deliverable sets out 'method'. The varied ways in which common policies are differently implemented strongly shapes the impact of those policies on the ground.

WP6 focuses on *'Visioning for re-coupling social and ecological landscape components'*, to identify how best to re-couple social and ecological components in cultural landscapes and translate them into policy and management options. This involves assessing the strengths and weaknesses of current landscape practices; also developing successful tool based strategies. The work to date has identified some 100 different heritage practices being carried out Europe-wide. The implications of this finding are still unclear. What constitutes 'good heritage' - heritage as good practice linking people and places - may be key.

WP7 is developing a *'Knowledge Hub for Good Landscape Practice'*. This has been a key output of work to date, and it is now sufficiently populated with material to be well worth exploration. You can access it at http://www.hercules-landscapes.eu/knowledge_hub.php. The Hub is a platform which enables efficient collecting, archiving, using, sharing, and distributing of data and project results, and is designed to be 'Live on the Web' after HERCULES finishes. It acts as a major toolkit for communication of HERCULES insights, and at the same time provides the means for collecting feedback and input through crowd sourcing tools. Two deliverables detail the technical aspects. To maximise the outreach of HERCULES results, the Hub enables landscape practitioners, managers, users, policymakers, and the public to:
 # understand the importance and implications of the protection, management, and planning of cultural landscapes,
 # map, assess, protect, and manage the functions, services, and values of

cultural landscapes at local scale,
identify adequate areas of activity to protect and manage landscapes of historic and archaeological value,
define the necessary process steps to implement good landscape practices on the ground,
evaluate the promises and pitfalls of various landscape practices, and
# appraise the effects of landscape practices on landscape functions, services, and values.

WP8 focuses on the *'Implementation of good landscape practices on the ground'*. A key objective is to create well thought out guidance for those involved: this would aim to identify and to stimulate traditional skills and knowledge within those involved with cultural landscapes. Work to date includes completing the first series of planned stakeholder workshops (held in Spain, England, Lesvos, Estonia and France); testing and demonstrating the Knowledge Hub with stakeholders; and completing two public cultural landscape days one in France and one in England. Among many emerging lessons from this work, it has become clear that local people do not want more 'landscape policy'. Instead they want dynamic practical advice on what works in terms of practical landscape conservation.

WP9 comprises *the 'Design of recommendations for landscape policy and practice, communication, and dissemination'*. As noted in LRE 68, LRG's formal role in HERCULES is as part of the WP9 team. Work to date has focused on developing a stakeholder engagement strategy to disseminate findings at EU level through a series of workshops in Brussels (the first one, at which LRG's Peter Howard was a keynote speaker and Laurence le Du-Blayo made the closing remarks) was held in May 2014. A second focus is to create communication tools – the HERCULES website and social networking tools which operate with the Knowledge Hub. Inevitably, much of the rest of WP9's work will be in the later half of the project.

The project has also developed a Blog site at www.hercules-landscapes.eu/

blog.php. Blogs are added regularly, and we notify these on the LRG website 'News' page as they are released. The blogs are intended to stimulate debate on cultural landscape issues, and you are invited to read them and respond if suitably provoked! Topics include 'Sustaining Cultural Landscape Values'; the need for a mature ecosystem services approach'; 'What is historical ecology?'; 'What causes rural land use change in Europe?'; 'The human element in cultural landscapes'; 'landscape and heritage – two opposing systems'; 'European wood pastures as cultural landscapes', and 'Recent heritage in the Alatskivi municipality, Kodavere parish, Estonia'. A good place to start, so go on – read some of them, be provoked, and react by adding comments to the blog!

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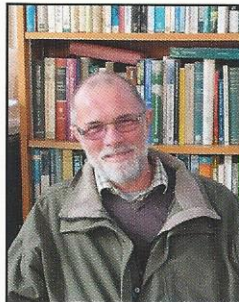
WHO FILLS IN THE GAPS?
By Peter Howard.

My concern with this problem has a long history. Fifty years ago I was required to write a dissertation as an undergraduate geography student at Newcastle University. I had been very impressed by H.E. Bracey's book on *Social Provision in Rural Wiltshire*, in which he had produced a score-chart for various facilities to establish urban status. A bank and a cinema were certainly regarded at the top end, a telephone kiosk and postbox at the bottom, and you could easily deduce a score for any settlement. I suggested that I should follow this methodology for my home county of Somerset, but I was clearly told that the dissertation was supposed to break new ground, with new ideas, not simply extend what someone else had done. So I shelved that idea, but not without wondering who, if not academics as lowly as undergraduates, might extend the idea to

the rest of the country? I am still wondering.

Thirty years later I was in the Czech Republic assisting the validation of their Institute of Terrestrial Ecology. I discovered that a major concern of the department was the compilation of an Atlas of Fish in Czechoslovakia. I was surprised as well as pleased, because in the UK such a straightforward objective seemed no longer to be considered as serious research in our universities. Regrettably, in the years since the re-integration of Europe, this interest in such research projects seems to have declined as those countries adopt western practices. This type of work may today be achieved by the use of citizen science and by NGOs — the recent production of the *Bird Atlas 2007-11* by the British Trust for Ornithology is an outstanding example, listing more than 40,000 names of the birders who took part, (including mine!)

Of course, in a long career I maintained the 'academic position', firmly encouraging students at all levels to produce **new areas of thinking**. This certainly seems entirely proper for the student's benefit. An insistence on always questing after something new is surely the very foundation of senior level education, and the real test of an educational programme must surely be to measure its effect on the students, rather than its impact on the ground. However, this does leave those **disciplines based on area** with a problem of case studies. The world is full of research case-studies, most of which are completely isolated from each other, and by no means easy to discover when working on a particular area.

The Hercules programme of the EU (see Steven Shuttleworth's account in this issue) with which LRG has been much involved, is a classic exemplar of the problem. A critical element within the Hercules project, indeed perhaps its fundamental purpose, is **knowledge transfer.** The idea is, not only to do new research into heritage and cultural landscape, but to get that knowledge to the practitioner level, the people who will have to implement any policy decisions.

University style education has in-