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Perspectives: Fossils and the Law — A Summary

by Jack J. Matthews[1]

Introduction:

Geoconservation, also known as Earth Heritage Conservation, is how we protect important examples of Earth's physical resources. Geological features can be protected for all sorts of reasons, including being important to cultural heritage, geological education and understanding, or the overall aesthetics of an area.

A great many designations, management frameworks and legal instruments have been used to govern and protect fossil-rich outcrops in the United Kingdom, but these are poorly publicized and, for example, rarely taught to palaeontologists as part of an undergraduate degree. Field work is an important part of palaeontological research, so it is a good idea for everyone who works with fossils, whether amateur or professional, to have a good understanding of the law so that they do not fall foul of it.

Here I summarize various areas of English law that apply to palaeontological research, fossil collecting and geoconservation. Historical examples have been added for context. It is important to note that this article will mainly consider the situation in England, and not the entire United Kingdom. Much legislation is similar across England, Wales, Scotland and Northern Ireland, but conservation policy is handled separately by each of these nations so there are differences. Other countries will of course have their own policies. This article does not constitute formal legal advice.

What is a fossil?

Palaeontologists may sometimes debate what is and is not a fossil, but more often than not they broadly agree on what structures represent evidence of ancient life, and what that means. The same is not true in English law, where protection of fossil specimens is complicated by a lack of clarity as to what fossils legally are. The absence of a specific definition in legislation has led to the matter being decided in case law — this is the legal precedent set by the rulings of judges in courts.

An early legal case of interest is that of *Attorney General* v. *Tomline* in 1877. Colonel George Tomline was lord of the manor of Walton-cum-Trimley in Suffolk — now the site of the Port of Felixstowe. The British War Department was a tenant on part of Tomline's land, and had constructed a circular fort called a Martello tower to defend that part of the coastline. The land was underlain by deposits from the Pliocene epoch (5.3 million to 2.6 million years ago)

containing coprolites — fossilized animal faeces — which at the time were an important source of phosphate for the fertilizer industry.

Tomline, wanting to cash in on this valuable resource, began to dig a trench on the property, removing and selling the coprolites. The War Department, not happy at the disturbance and open earthworks next to the fort, took Tomline to court to get him to stop.

The judge in the case, Justice Fry, ruled that as owner of the land, Tomline was entitled to the coprolites, but that he required the permission of the tenants to build the earthworks to remove them. Because he hadn't sought permission, the War Department was awarded half of the profits from the coprolite sales.

As ultimate landowner, Tomline possessed the mineral rights to the property, meaning that he had the right to use any minerals found on the land. The judge cited the case of *Hext* v. *Gill* 1872, in which Lord Justice Mellish stated that the term minerals

> "**…** includes every substance which can be got from underneath the earth for the purpose of profit, unless there is something in the context or in the nature of the transaction to induce the Court to give it a more limited meaning."

Justice Fry ruled that coprolites were also minerals, and thus the property of Colonel Tomline. Yet, unfortunately for the colonel, the judge didn't feel that this gave him the right to disturb the property to remove the coprolites — hence the need to pay damages to the tenant.

As a result of this ruling, it would seem that fossils still in the ground are the property of whoever owns the mineral rights, and cannot be collected without the permission of the landowner and tenant (if applicable). More-recent laws — the Theft Act, 1968, and the Criminal Damages Act, 1971 — could be used to prosecute people who remove samples without permission. Fossils no longer attached to the bedrock are a more complicated matter. In England and Wales, the prevailing opinion is that loose specimens are considered abandoned, and therefore that taking them is not stealing. However, in Scotland all abandoned property reverts to the Crown, so theoretically permission should be sought before removing loose material.

Fossil Export

Exporting fossils from the United Kingdom is also complicated. This came to light in the 1980s following the discovery of *Westlothiana*, possibly the earliest known reptile, from the Carboniferous period (360 million to 299 million years ago). When a German museum attempted to buy the specimen from the collector for £180,000, an export licence was applied for under the Export of Goods (Control) Order, 1987, which is required for anything valued at more than £20,000 and that is more than 50 years old. However, the Department of Trade and Industry ruled that because fossils are not manufactured, they are not subject

to the Order. This therefore leaves a situation where the only legislation controlling the export of fossils is at the European Union level. As a result, there is little to prevent exports to EU countries.

Geoconservation Legislation

The various forms of legislation that cover areas where fossils can be found are complex and multifaceted. They apply to both researchers and fossil collectors. The main designation that a locality can be listed as for the purpose of geoconservation in England is that of a Site of Special Scientific Interest (SSSI), under Section 28 (amended) of the Wildlife and Countryside Act, 1981 (WC Act). In England, SSSIs are overseen by Natural England, a non-departmental public body. Land with SSSI status is still owned by whoever owned it before it was designated an SSSI, but there are restrictions on what people can do there, especially in terms of building and development. SSSIs are not normally patrolled or monitored on a regular basis by Natural England. The original WC Act made it very difficult to prosecute third parties who damaged or destroyed SSSIs, because it was necessary to prove that the person knew that they were in an SSSI. A new offence was created by Section 55 of the Natural Environment and Rural Communities Act, 2006 (NERC Act): that of intentionally or recklessly damaging or destroying the natural conservation or geological features of an SSSI. Importantly, this offence does not require prosecutors to prove that there was knowledge of being within a designated area. People who are convicted can be given a fine up to level 4 on the Standard Scale (£2,500 at time of writing). The Standard Scale is a system for setting criminal financial penalties, allowing for increases in the level of the scale when inflation requires, without the need to amend all the laws.

The management plan for each SSSI includes a list of “operations likely to damage the special interest”. Among other things, SSSIs may include controls on the “extraction of minerals, including peat, topsoil, subsoil and stone” and the “removal of geological specimens, including rock samples, minerals and fossils”. Anyone who wants to extract or remove geological specimens from an SSSI including these controls must get permission from Natural England.

Areas of geological significance are often in Areas of Outstanding Natural Beauty (AONB). This designation offers protection from development, but no extra regulation of access to or removal of specimens. The power to designate and oversee AONBs rests with Natural England.

A great deal of England’s upland areas are also open-access land where there is what is called a right to roam — meaning that anybody has the right to walk there. Natural England is able to restrict access for “the purpose of conserving flora, fauna or geological or physiographical features” under Section 26 of the Countryside and Rights of Way Act, 2000 (CROW Act). It is possible to restrict access for the purpose of geoconservation, but it is thought that this power has never been used. The CROW Act also made amendments to previous legislation about SSSIs and AONBs.

The WC Act also establishes Limestone Pavement Orders to protect natural landforms made

of exposed limestone. Most of these Orders are in place in the Yorkshire Dales National Park, or in the country between Kendal and Lancaster. Removal of rock from these areas, even if it is loose or lying in a field, is a criminal offence.

The National Parks & Access to the Countryside Act, 1949 (NPAC Act), allowed for the creation of national parks. These offer very limited protection to specific outcrops of rock, and are mainly concerned with controlling development. The NPAC Act also enabled the designation of National Nature Reserves. Unlike other designations, these areas of land are managed directly on behalf of the nation — usually by Natural England, but also by other bodies, such as Wildlife Trusts, the Royal Society for the Protection of Birds (RSPB) and local authorities. There may be restrictions on sampling and research in these areas. An example of a geological National Nature Reserve is the Wren's Nest in Dudley, renowned for its coral-reef deposits from the Silurian period (444 million to 419 million years ago). These deposits contain fossils of the trilobite *Calymene blumenbachi*, known locally as the Dudley Bug.

There are also a number of other designations, not directly created for geoconservation, that may affect palaeontological research. These include Country Parks, Local Nature Reserves and Scheduled Ancient Monuments. Sites may also be designated as Regionally Important Geological Sites, although these are not supported by legislation and have little effect other than to recognize the importance of an area. International inscriptions, such as UNESCO World Heritage Site or Geopark, may also be used to highlight the worldwide significance of a site, but other designations would be required to control collection and research on fossiliferous outcrops.

The English conservation system has been built mainly to control of development in and around a site. SSSI or AONB status does not affect the ownership of the land, so control of access to the property is for the most part left to the landowner.

The English system has an obvious bias in favour of managing development and the actions of landowners; this is evident from the language used in the CROW Act, where "owner or occupier" is used to describe people who may apply for permission to do something that is otherwise prohibited in an SSSI. If this is refused, they may also appeal to the Secretary of State. This disregards the reality that many of those who may legitimately seek a permit to remove samples, including researchers and fossil collectors, are highly unlikely to be the landowner.

Case Study: The Long Mynd

The Long Mynd in Shropshire, England, is a heath and moorland plateau owned by the National Trust, a conservation charity operating in England, Wales and Northern Ireland. The Long Mynd is the type locality — meaning the place where certain rocks types were first defined — for the Longmyndian Supergroup, one of the thickest and most complete packages of sedimentary rock from the Precambrian (everything before 541 million years

ago) in southern Britain.

The rocks here have been of interest for some time, with geologists such as John Salter and Charles Darwin writing about them and associated possible traces of life. The roughly 2,000-hectare site is protected by byelaws, which were created by the National Trust under Section 24 of the National Trust Act, 1971.

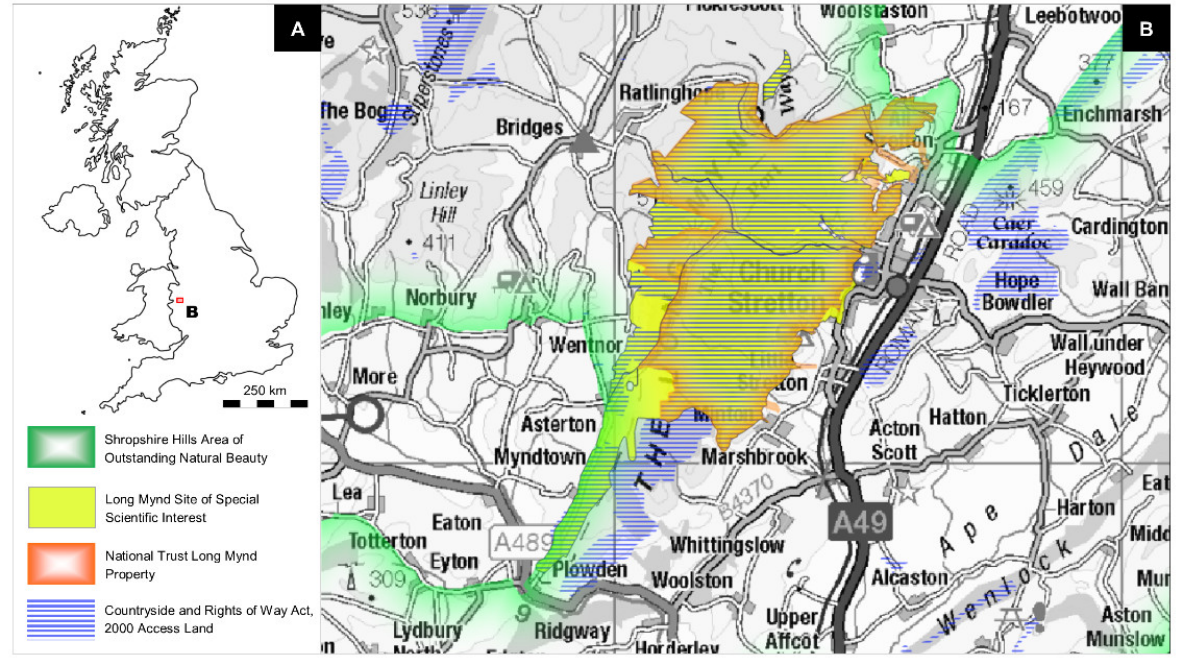

Figure 1 — Locality of the Long Mynd. A, Map of the United Kingdom showing the location of the Long Mynd. B, Map of the Long Mynd showing the extent of four major conservation designations.

The byelaws prevent, among other things, the unauthorized removal of gravel, sands, clay or any other substance from Trust property, and the defacing of rock surfaces. Failure to comply with the byelaws can lead to a fine of up to £20, plus an extra £2 for each day the offence continues.

The Long Mynd is also in the Shropshire Hills AONB, and much of it is open-access land (Fig. 1).

As can be seen from the simplified diagram in Figure 2, a patchwork of legislation and governance affects the Long Mynd. These designations not only cover different areas, but also involve various different pieces of legislation and nongovernmental organizations. A key message of such diagrams is that understanding the constraints on palaeontological research in an area can be quite complex, and field work at a particular locality may require permissions or permits from a number of organizations.

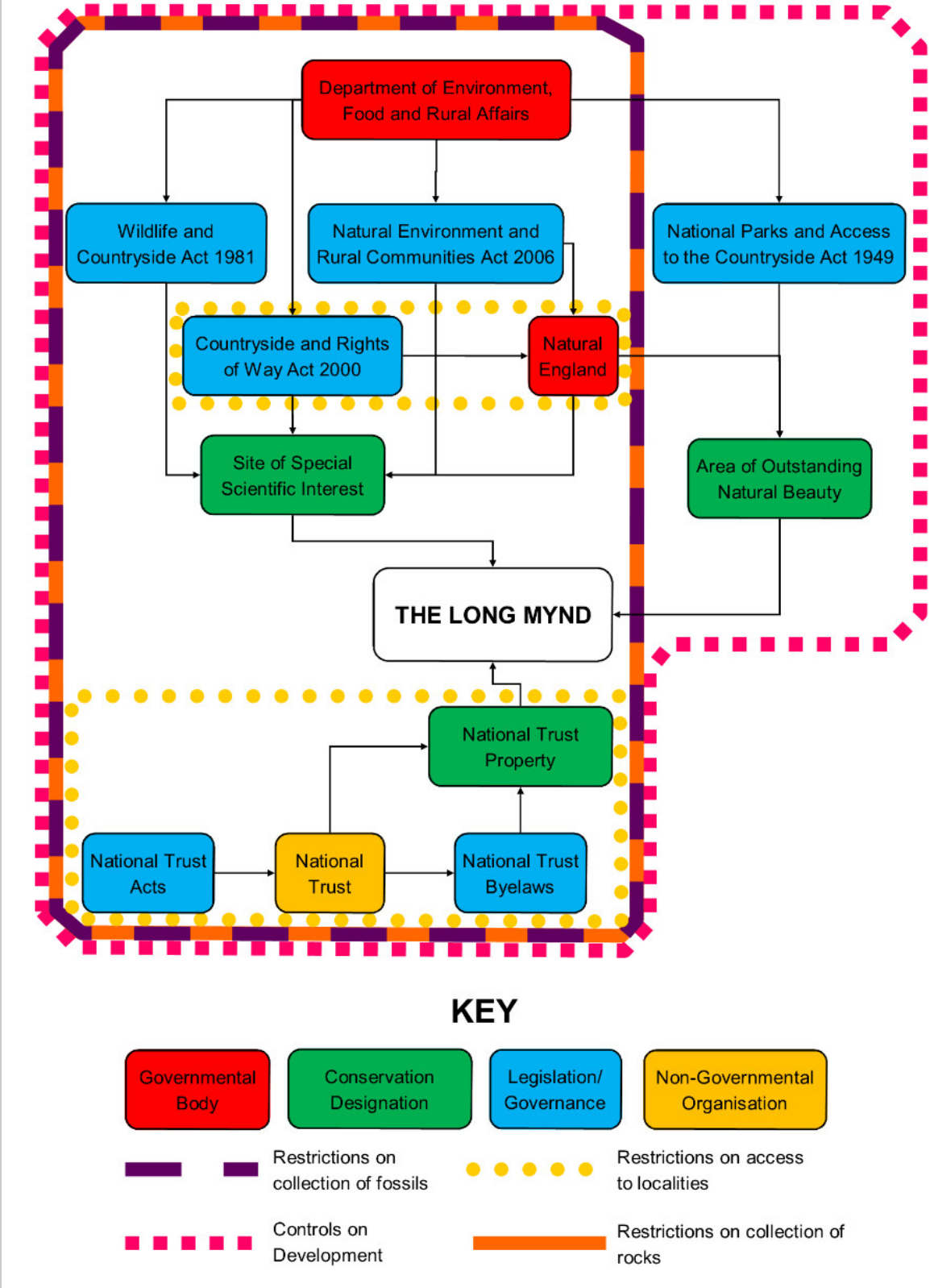

Figure 2 — Overview of the legislative framework governing geoconservation at the Long Mynd.

Responsible conduct in the field — A guide

The key to conscientious field work and fossil collecting is being aware of your responsibilities. The most important of these is to understand the legal framework under which you are working. In England, the easiest way to check this is to go to magic.defra.gov.uk, which provides a detailed map with overlays for each of the various designations. If necessary, you can find further information through the Natural England website for information on restrictions in those designated areas.

You may also need permission from the landowner. Where it isn't clear who owns the land, this information can be ordered online through the Land Registry for a small fee.

Don't underestimate the value of fostering positive relationships with the local communities in which you work. In a conservation regime where sites are very rarely formally patrolled and monitored, it is very useful for a researcher to become friendly with members of the local community and enlist them to keep an eye on important fossil localities. As well as acting as informal year-round wardens, residents often have a sense of ownership over their local countryside, and so will be keen to be kept abreast of research in the area. This approach not only promotes stronger informal geoconservation monitoring, but also often leads to researchers getting tip-offs from the local community about prospective new sites and discoveries.

When it comes to sampling, there are a number of options. Removing specimens damage the appearance of an area, reducing its aesthetic value and possibly destroying geological features that may be of use to future researchers. Samples should therefore be taken from loose material if possible. If this is not possible, it is often best to sample in areas that are not easily seen, and are away from other specimens that may be of future importance. It is also worth considering how you remove the specimens — using a hammer and chisel along existing weaknesses in the rock tends to leave natural-looking exposures, whereas diamond disc saws would leave unsightly gashes on the outcrop. In general, the adage of 'leave only footprints' is a good one to follow.

Conclusions

Legislation alone cannot ensure the long-term protection of geologically significant sites; it is of little use once a rare and finite resource has been removed or destroyed. Total security can never be guaranteed, but if the most scientifically significant localities are to be preserved, it is essential to have monitored — and preferably staffed — access controls.

Fossil localities are as significant to communities through enhancement of the local cultural heritage and economy as they are to researchers and the development of knowledge. Indeed, with researchers often being temporary annual visitors, and many sites having no permanent staff or monitoring, local communities are often the best guardians of geologically significant localities.

It is therefore essential that geoconservation frameworks, both legislative and managerial,

are designed in close consultation with both the scientific community and local residents. Future legislative advances should seek to simplify the current framework, and ensure that designations recognize the needs and concerns of all partners, while ensuring the long-term sustainability of these fossil resources.

How the law on geoconservation would be applied remains unknown, because few people have been prosecuted for breaking it. Significant uncertainty still exists on the definitions of certain key terms and how they would be applied in law. Moreover, awareness of geoconservation laws is very low. Sites rarely contain any signage information telling visitors of their rights and responsibilities, or what to do if they discover vandalism. Field work remains an important part of palaeontological study, and fossil collecting is common. It is therefore essential that new researchers and fossil collectors get adequate training and guidance on the legislation as it applies to them. For the former, it would seem logical to make the laws around fossil collecting a small, compulsory element of all geological undergraduate degrees. For the latter, increased engagement, discussion and more publically available resources would help improve awareness. Geological outcrops remain the foundation not only of palaeontological research, but also of teaching and outreach. Stakeholders from across society should invest more time to ensure that these finite resources are not lost forever.

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