

Section 5 - Why Conservation Should Embrace Natural History

(published at <https://threeworlds.campaignstrategy.org/?p=3179>)

Natural History is undergoing something of a revival but over the last century it went from being a mainstay of UK culture to a backwater interest, as the conservation movement mostly sidelined it in favour of ecological science, and the 'alternative' environmental revolution largely passed it by.

Important and fascinating though ecological science is (I am a fan), Natural History works in a different way, which makes it more 'relatable' and accessible person to person. It also relates directly to place, landscape and identity, all of which make give it huge potential for building connections between nature and popular culture.

Traces Of Nature Culture

Nobody was measuring public levels of 'Natural History Knowledge' before the late C20th era of opinion polling and environmental anxiety but the nature ability prevailing in times past has left its traces all over popular culture, such as in entertainment, stories, religion, traditions, folk beliefs, decor and businesses.

If you've ever "touched wood" or thrown a coin into a fountain or 'wishing well' for luck, you've engaged with nature beliefs going back not just to Anglo Saxon times but the Bronze Age. Such traces provide abundant evidence that ability to identify wild plants was once normal because it was essential for treating illness in people and farm animals, and for food.

Nature knowledge was still common knowledge in the C16th, when William Shakespeare conjured up these lines for Oberon, King of the Fairies, in *A Midsummer Night's Dream*:

*'I know a bank where the wild thyme blows,
Where oxlips and the nodding violet grows,
Quite over-canopied with luscious woodbine,
With sweet musk-roses and with eglantine:
There sleeps Titania sometime of the night ...'*

Shakespeare's audience were probably aware of what those wildflowers actually looked like, even if they don't actually all grow and bloom in the same place. They would be rarely encountered in the everyday lives of most theatre-goers today. In *The Tempest* he had the spirit Ariel sleep in the bell of a Cowslip, which is not a Primrose but how many contemporary playwrights or movie makers would know the difference?



Cowslips left and Primroses, right
Living Legends

Natural History knowledge used to be vital in marking out our landscape. Medieval and ‘Dark Age’ equivalents of surveyors and politicians often referred to specific native tree species in marking out the ‘bounds’ of estates and territories that became parishes. In [The Real Middle Earth](#), Sussex University psychologist and Shaman Brian Bates shows how the Dark Age folklore which inspired J R R Tolkien’s landscapes in *Lord of the Rings* is geographic not imaginary – it’s this country.

Due to various historical accidents described by writers such as [Oliver Rackham](#), the UK still has more ancient trees than anywhere else in Europe. They are painstakingly plotted by the [Ancient Tree Forum](#), and the subject of the Woodland Trust’s ‘[Living Legends](#)’ campaign. Such old trees, often hundreds and some thousands of years old, are a key ingredient of the ‘mysterious’ feel to many UK landscapes, often referred to by visitors from the European mainland but largely un-noticed by modern UK citizens.

1066

Many such trees were sites of cultural importance or landmarks known to ‘Celts’ and Anglo Saxons. Richard Muir [describes](#) how on learning that the Normans had landed in Southern England in 1066, Saxon King Harold gathered the English army at the ‘Hoar Apple Tree’, a ‘landmark tree’ on Caldbec Hill in the Sussex Downs. (Hoar means a tree made hoary looking by being encrusted with lichen, probably a very old tree). We still couple “hoary” with “old” but the living coat of multicoloured lichens was almost totally wiped out by industrial air pollution in the 19th and 20th, leaving book illustrators and graphic designers with a standard image of tree trunks as just ‘brown’.

1930s



Detail from Walter Spradberry’s ‘[Flowers of the Season](#)’ London transport poster (1933) which could almost serve as an identification guide, showing realistic Harebell, Scabious, Tormentil, Ragwort, Chicory, Feverfew and others.

Before chemical herbicides such ‘wayside flowers’ were abundant and often gathered for Village Show competitions, as medicinal herbs, or for decorating churches and homes. So no surprise that they featured in commercial art used to promote taking a bus to the countryside. In later decades, graphics in advertisements became more abstract and C21st visualisations of ‘meadows’ and even ‘nature’ brand products routinely show astroturf style blank green grass with or without token yellow blob dandelions or, a variety of multicoloured but unreal, or non-native flowers. [Read [more](#)].

1950s

Another indicator of the past knowledge and abundance of wild plants is the diversity of their different local (‘folk’) names collected by poet, writer and naturalist Geoffery Grigson for [The Englishmans Flora](#). Published in 1955 just before intensive chemical farming started to sterilise the countryside, many of the traditional names relate to pre-Christian magical beliefs about the role of plants, as well as their uses in food and medicine.

Take some of the wild flowers said (it varies) to be traditionally placed in the ‘May Garland’ or ‘Fairy Garland’ at the top of a Maypole: Red Campion, Stitchwort, Dandelion, Bluebell, Blackthorn, Elder, Hawthorn, Rowan, Wood Sorrel and Herb Robert.

For Red Campion, Grigson records 63 local names, for Stitchwort 106, Dandelion 53, Bluebell 83, Blackthorn 27, Elder 17, Hawthorn 74, Rowan 38, Wood Sorrel 57 and Herb Robert, a small pink cranesbill now commonly regarded as a garden ‘weed’ but with an enormous list of magical associations, no fewer than 111, including ‘Pucks Needles’.



‘fairy garland’

May Day



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Ancient May cycle nature traditions were exported from Europe to America and became a version of 'May Day' in the US. The traditional garland was of local wildflowers.

When Natural History Was Popular Culture

'Natural History' became a hugely popular interest in of the C19th, including in the UK. As a science it went back to the Ancient Greeks but Natural History Societies and 'Field Clubs' sprang up all over the newly industrialised societies including the UK.

Natural History was taught in C19th universities, schools, and informally, among the Societies themselves, with countless expeditions to record and collect specimens, journals in which to record findings, and buildings to display collections. London's Natural History Museum opened in 1881.

More than this, having a good general knowledge of nature where you lived was widely respected and fashionably emulated. Lacking cars and foreign holidays, efforts were usually local and contributed to municipal and regional civic pride.

In 2014 Jennifer Frazer wrote an anguished account of the rise and subsequent decline of Natural History education in a *Scientific American* blog [Natural History is Dying, and We Are All the Losers](#). She pointed out that when 'Natural History flourished' in the 18th and 19th centuries, not only Linnaeus and Darwin, but the US Presidents Washington, Jefferson and Theodore Roosevelt 'were avid and avowed naturalists'. It was 'a time when basic knowledge of local plants and animals was considered part of a good education -- and of being a good citizen' [and]

'Anna Botsford Comstock published a textbook in 1911 for elementary students and teachers called Handbook of Nature-Study which exploded in popular sales. Between 1890 and 1940 texts such as hers were an essential part of classrooms across America. The aim was to train teachers and facilitate direct contact between children and living organisms in order to create an "essential nature literacy"'

'A Masterpiece of Social Mechanics'

Natural History Societies were open, involving and in the cultural mainstream of the time. To support their activities such as exhibitions, museums and libraries, 'Societies held fundraising events, including popular musical acts, dinners with visiting speakers and even gambling. This of course made Natural History locally visible and socially embedded, and it was promoted as good for health and social standing.

Diarmid Finnegan [records](#) that C19th Scotland had at least 70 Natural History Societies and 'Botany, geology and meteorology ... were recommended ... as physically and mentally invigorating pastimes'. David Page, geologist and 'enthusiast for intellectual culture' advocated for more field clubs and science associations because 'natural history, more than other forms of intellectual culture, offered a stimulating distraction from the debilitating effects of routine urban existence' Page was careful to point out the dangers of narrow

scientific professionalism , a condition incompatible with “*the duties of brotherly sympathy , honest manliness , and good citizenship , which render life sweet and society enjoyable*”.

In [*The Naturalist in Britain*](#), David Allen describes the field club model as a ‘masterpiece of social mechanics’ because, says Finnegan: ‘With low subscription rates , out-of-doors camaraderie and general informality , field clubs had an appeal that transcended social divisions of gender and class even if the impact of an egalitarian ethos was uneven’.

These days perhaps only competitive sport is credited with such benefits.

C20th: Natural History Decline

The main factor which eventually sent the civic natural history into decline was the growing dominance of professionalised science. Having succeeded in popularising nature education to the point where it was adopted in the formal education system, once there, its advocates saw it progressively eclipsed by more ‘modern’ sciences, which were regarded as a superior form of learning. Frazer writes of the US:

‘Naturalists ... commanded respect at universities, and taught many field classes and courses ... dedicated to identifying and understanding the life histories and evolutionary relationships of particular groups of organisms: flowering plants, mosses, lichens, mammals, fungi, insects, invertebrates, birds, insects, fossils, birds, and so on -- a host of tangible living things to which people could directly relate ...

After World War II, everything changed ... The pendulum swung away from outdoor field studies toward indoors laboratory research on fundamental processes. Scientists who studied underlying processes of biology -- evolution, cell biology, biochemistry, etc., -- got bigger grants and better publications than those who studied the organisms themselves. Funding and grants for natural history evaporated’.

How Conservation Let Natural History Slip

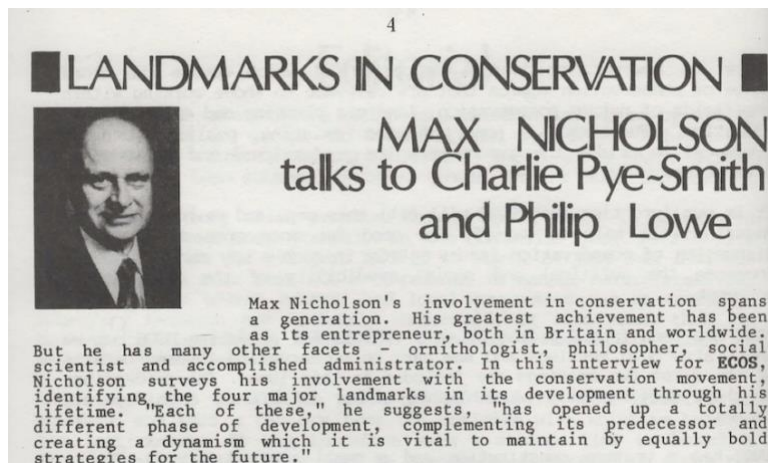
The foundations of most of UK conservation – government and NGOs - were laid in post-war Britain. A desire to see it taken seriously inadvertently contributed to a decline in Natural History.



The first UK National Nature Reserve, at Beinn Eighe, purchased in 1951.

In 1949 the UK Government '[Nature Conservancy](#)' was set up by Max Nicholson, a lifelong hyper-active polymath with a visionary talent for identifying needs for political or social machinery and then fixing them. Nicholson played critical roles in founding or operationalising WWF, the BTO, IIED the RSPB, as well as initiating the UK's urban nature parks movement and the strategic data journal ENDS. Aiming to convince politicians and the media of the importance of nature conservation, he strong-armed the BBC into funding the start up of the Council for Nature's 'intelligence unit', to promote environmental coverage. That led to CoEnCo which led to the current UK NGO umbrella group Wildlife and Countryside Link.

A fan of expertise being "on top, not on tap", of data, and of scientific rigour, as well as being an accomplished naturalist, Nicholson was also a WW2 and post-war Civil Servant familiar with the machinery of power, in which he played numerous senior roles. Seeing the political authority accorded to Science in post war Britain, Nicholson made sure the original Nature Conservancy had the status of a 'Scientific Service', in effect a Research Council.



"we made a policy decision to write off the Natural History Societies, which we considered utterly useless for this new age of conservation" – Max Nicholson

A pragmatist, in [1980 Nicholson told](#) Charlie Pye-Smith and Phillip Lowe, "the important task was to vindicate the role of ecology as a science through serious quantitative and experimental research, and thus make possible the creation of a science-based conservation movement which in turn could lead to a broader professional environmental programme".

Nicholson's vision was largely realised. There is now a large UK 'environmental management' policy community, with professional organisations. He also anticipated that for political reasons, the fledgling Conservancy would need a 'strong voluntary support movement', so he channeled funds into building up "a complete network of County Naturalists Trusts" [now The Wildlife Trusts]. Again he succeeded but as he also said, "we made a policy decision to write off the Natural History Societies, which we considered utterly useless for this new age of conservation".

At the time it was probably the best option but just as nobody foresaw that the voluntary conservation groups would find themselves fighting to mitigate wholesale change, from road

building to intensive farming, blanket forestry and pollution – and despite their best efforts and significant growth in memberships and nature reserve estates, [failing overall](#) - nor did they anticipate the arrival of attention-driven politics, or the national withering of nature knowledge or its consequences.

In the C20th today's major nature and environment groups made it their task to find ways to persuade naturalists to join conservation efforts, and alert the wider public to the need for environmental action (in which they succeeded, at a conceptual level). It was not to introduce the wider public to natural history, as that didn't seem to be necessary. And nor, with the partial exception of the RSPB and birds, have they ever done so at scale.

C21st: Calls For Natural History Revival

'Ernest Rutherford famously said "all science is either physics or stamp collecting". No science has perhaps been a bigger victim of this attitude than natural history' – Jennifer Frazer

In recent decades some scientists, especially those with 'field skills' (ie mainly, natural history knowledge) have become increasingly concerned that their own community is becoming estranged from nature, as an unintended consequence of its attempts to be increasingly 'rigorous', and more like technological sciences promising to lead to commercial applications and economic growth. From the 1970s, computing power and modelling enabled mathematicians to create and test hypotheses at the cutting edge of ecological research, so long as they had data. They had little need to tell one species from another, even if they met them while out for a walk.

In 2007, American scientists and field naturalists Stephen Trombulak and Thomas Fleischner from Arizona pointed out that a 1994 survey found 'a surprising number' of the American Society of Naturalists had themselves equated an interest in natural history with being an 'unsuccessful biologist'. They issued a call for a '[renaissance in natural history](#)', started a [journal](#), and set up an [institute to promote it](#). In 2014 Joshua Tewksbury and 17 other scientists, published [Natural History's Place in Science and Society](#), in the journal BioScience. They detailed a significant decline in natural history practice and called for its 'revitalisation'.

China's Natural History Revival Movement

The most coherent and comprehensive cultural and social rationale I've come across for a revival of natural history is not from the UK, or indeed Europe or North America but from China. At least so far as I can judge from [this 2023 article](#) in *Nature's* 'Humanities & Social Science Communications', by Siyu Fu and Kristian Nielsen at Aarhus University in Denmark.



Huajie Liu

Doctor of Philosophy · Professor at Peking University
China

Huajie Liu of Peking University – find some of his (English Language) work [at ResearchGate.Net](#)

Their account centres on the work of Liu Huajie at Peking University, whose thinking seems very relevant to many of the issues facing the nature movement in the UK.

Siyu and Nielsen write that Liu is ‘widely considered the main protagonist and public spokesperson of the NHRM’ or Natural History Revival Movement in China.

Liu wrote a book [Living As A Naturalist](#) (only available in Chinese) in 2016. ‘Living As A Naturalist’ is a philosophy and a call for a movement, or a movement in practice, depending how you view it. Siyu and Nielsen write: ‘the call for naturalism as a way of life applies to individual citizens and communities’. ‘Living As A Naturalist’ also attracted a following of Chinese-speakers living overseas, through viewers of Phoenix TV.

The authors begin Liu’s story in the 1990s, when he ‘became known as a staunch critic of pseudoscience’ as opposed to ‘science proper’. But after winning an award to study it, ‘Liu had modified or even reversed his original standpoint’ and:

‘around 2000, Liu Huajie began publishing academic and news articles, all of which called for a revival of natural history amidst a virtual flood of books in Chinese about nature and experiencing nature’.

In 2007 the Chinese Communist Party of the People’s Republic of China (PRC) adopted the concept of building an ‘Ecological Civilisation’ or the EC, which became part of the Constitution in 2012. The rationale included avoiding ‘progress traps’ caused by environmental degradation.

Siyu Fu and Kristian Nielsen say the NHRM ‘entails an alternative vision of EC with associations around nature as an important political force’, and with less emphasis on achieving it through science and technology.

They add ‘Liu Huajie defends natural history as a legitimate and relevant mode of knowledge production’ ... and ‘in contrast to how people in China usually understand science, the natural history approach emphasises inductive learning and emotional engagement with its subject matter, rather than hypothetical deduction and detachment’.

The paper describes how a large number of bird-watching clubs and local and national nature organisations have become established in China and their science or citizen science has influenced local conservation policies. Liu uses BOWU [Beauty, Observation, Understanding, Wonder] as an acronym to present or memorise the aims of the kind of natural history

education that he advocates. In my opinion, that's also good advice for the nature movement in the UK. More about Liu's approach from the paper in *Nature*:

To really see nature, one will have to get to know it, which is why, according to Liu, naming natural entities is important.

Liu compares knowing the names of plants and animals to knowing the names of famous actors. To appreciate cultural products such as Hollywood movies, we want to know the names of the actors in the movies. Similarly, to appreciate nature, we need to know the names of plants and animals in nature.

Education in this case means practice and learning-by-doing, not formal training by following a well-defined curriculum. Liu cites the nineteenth century Swiss-born naturalist Louis Agassiz to make his point: 'Study nature, not books'.

Learning how to practice natural history in the modern age, Liu suggests supervised training. Natural history training is different from professional training or on-the-job training. There are no specific aims or learning goals involved in the kind of natural history envisaged by Liu other than inciting curiosity about nature and love of nature.

I'd recommend anyone interested in organising action to improve nature ability in the UK to read Siyu Fu and Kristian Nielsen's paper [Reviving natural history, building ecological civilisation: the philosophy and social significance of the Natural History Revival Movement in contemporary China.](#)

Natural History's Particular Political Potential

In my view we need both Ecology-the-science and Natural History but there are political reasons why Natural History is now particularly important for conservation.

First, because it is socially accessible to the great majority of the public who are never going to become professional ecologists, and second, because it has a distinct psychology that is far more intuitive than the hypothesis-testing of formalised science.

In a short 2022 article in *Trends in Ecology & Evolution*, [The psychology of natural history](#), New Zealand researchers Kevin Burns and Jason Low lay out how Natural History has a distinct methodology called 'prediction error learning'.

This means learning from seeing something unexpected, surprising or remarkable, which is then assessed against prior knowledge, as opposed to the powerful but different process of setting an *a priori* hypothesis and then testing it, which became the bedrock of 'scientific methods in the 20th (the 'hypothetico-deductive research paradigm').

Because prediction-error learning is enabled by having a baseline knowledge of what's 'normal' in nature and how it works, people with nature ability (naturalists and others observing nature 'in the field') are at the frontline for nature conservation. They are most able to notice anything new, including disappearance or non-appearance of something familiar, or

the appearance of something unfamiliar, such as the nature-gardeners who noticed the 2024 ‘Silent Spring’.

	Natural History	Ecological/ env science
Learning method	Prediction error	Hypothesis testing
Entry Requirements	None	Academic qualifications
Primary communications Channel	Track 1, System 1 intuitive	Track 2, System 2 Professional analytical
Social open-ness	High	Low
Cultural availability potential	High	Low
Current UK comm’s framing	A hobby/ pastime	A science/ discipline/ profession
Capacity to analyse invisible risks and processes (eg climate)	Low	High

(My interpretation)

People who still directly depend on a particular feature of nature or plant or animal for their livelihood can of course also be in this position. For example the 1980s ‘Waldsterben’ or ‘forest-decline’ became a huge social and political issue, starting in Germany (see ch. 5 in [The Dirty Man of Europe](#)). The first people to notice something was wrong (perhaps in the 1970s) were locals who went into old-growth forests to collect trimmings from felled Silver Fir or [Tannen Baum](#), the traditional Christmas tree, to make decorative wreaths. Rather than shiny green foliage, they found it was going sickly yellow or brown.



1981 – ‘Acid Rain’ and ‘Forest Decline’ became a big political issue and scientific controversy in Germany (which still rumbles on, as effects of climate change worsen)

The change was gradual but as these collectors only visited once a year, they noticed before professional foresters did (I asked a German scientist activist what the very first symptoms of forest decline had been, and he sardonically replied “an attack of blindness in foresters”). Presumably the Christmas décor-makers found an alternative supply of foliage once it became unattractive. It was only when scientists proposed that air pollution might be to blame for the increasingly obvious decline of forests that it became a big public issue but it was prediction-error learning that first alerted the scientists.

Similarly, from the 1950s to the 1970s, conservation managers, naturalists and field biologists had reported puzzling cases of reproductive problems in wildlife. These remained unexplained, and largely set aside by scientists who were investigated different hypotheses until the 1980s when US scientist [Theo Colborn](#) realised that a common factor was concentration of (endocrine-disrupting) industrial chemicals in freshwater food chains.

Another case, [mentioned by](#) Joshua Tewksbury’s group, is the disastrous result of ignoring North American native people’s traditional knowledge of the controlled use of fire in forest management.

Beyond just noticing, getting to know a wild plant, animal or natural place enables people to form an emotional bond with them, so such folk are most likely to want to ‘do something’ about loss or damage. Consequently, from a social-political point of view, conservation has a profound need for more Natural History ability across society.

Natural History is also democratically participative in that it’s socially porous and accessible in a way that most sciences are generally not. You can be a naturalist, and learn, teach or share a lot about Natural History, without having to be a scientist, pass exams or know a lot of ‘scientific methods’. Building on this could help strengthen nature’s place in UK culture.

Naturalists are society’s sentries for nature, those who can sound the ‘alarm call’, as well as, alongside scientists, often being those with most understanding of what nature needs to function and survive. With different organisation they could also be nature’s rapid reaction force at the local level.

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