

'NEVER SO AT HOME': CHARLES ELTON AND THE WOODS OF WYTHAM

by

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Focusing on the history of an ecological site northwest of Oxford, UK, this essay explores the people, research and values behind the development of Wytham Woods as a scientific environment. A small patch of woodland, Wytham has long been identified by ecologists as a site of great scientific value. In addition to traditional sources of scientific value, such as species diversity, this article examines the role of emotional connection and aesthetics in how scientific sites are formed and maintained over long periods of time. As such, this history of Wytham Woods sheds light on the multiple factors that nurture the relationships formed when researchers dedicate decades to long-term studies conducted in specific scientific environments.

Keywords: Charles Elton; scientific environment; scientific value;
aesthetics; ecology

INTRODUCTION

Charles Elton (1900–1991) has been called many things: a founding father of ecology and a pioneer in conservation; an academic ecologist with a preference for dry, scientific accounts; and a naturalist with a deep emotional connection to the environments he studied. A former student of Julian Huxley at the University of Oxford, Elton played a significant role in building the academic foundation for ecology in Britain, including being a founding editor of the *Journal of Animal Ecology* in 1931 and establishing the Bureau of Animal Population (BAP) in Oxford one year later. Whether it be through radios in living rooms, in fundamental texts in colleague's offices or on field courses for undergraduate and graduate students, Elton's voice echoed throughout the emerging landscape of ecology in Britain from the 1930s onwards. After travelling in the Arctic and northern Canada, both destinations growing in popularity with ecology researchers in the early twentieth century, Elton came to dedicate the majority of his career to a small area of woodland called Wytham Woods.¹ What was it about this scientific environment that made it

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¹ Thomas R. Dunlap, *Nature and the English diaspora: environment and history in the United States, Canada, Australia and New Zealand* (Cambridge University Press, 1999), p. 171.

worthy of such long-term intellectual, and I will argue emotional, fidelity? Beyond Elton, who else worked in these woodlands and what impact did this scientific environment have on British ecology? This article will seek to answer these questions with a particular focus on the experience—intellectual, sensorial and emotional—of working in Wytham and the people for whom the woods became the focal point of their research and teaching.

Centring aesthetics and the emotional experience in the history of field science is certainly not entirely new. The subject of Romanticism and the history of ecology and biology, for example, was discussed in fundamental texts in the 1990s and early 2000 by scholars such as Donald Worster and Bob Richards.² More recently, scholars such as Robert Kohler and Jeremy Vetter have discussed the role of pleasure, health and a love for the outdoors in the history of field science.³ Echoing scholars such as Vetter and Megan Raby, whose works consciously bring together the history of science and environmental history, I seek to draw on other sub-fields to continue to expand notions of pleasure to include fresh perspectives concerning the role of aesthetics and emotion in fieldwork, and particularly long-term field studies.⁴

New areas of scholarship concerning ecology and poetry, and affective studies, particularly prompt historians of science to revisit the role of aesthetics and emotion in field science.⁵ The emerging field of affective studies represented by texts such as Patricia Clough and Jean Halley's edited volume, *The affective turn: theorizing the social*, for example, includes discussion of affective engagement regarding maternal and medical work.⁶ However, affective studies can readily be extended to other disciplines such as ecology and conservation. Drawing on such new, interdisciplinary, fields reveals new avenues with which to explore scientific practice, including discussion of the role of Romanticism, aesthetics and poetry. Indeed, diminishing the value placed on the look of a field site—or on the sensory experience of working in that unique place continuously for years—would be to ignore fundamental aspects of the practice of long-term field science. The importance of centring the role of aesthetics and emotion is compounded when examining the history of long-term scientific environments, which often become scientists' intellectual home for decades. Similar to biological stations—where scientists become what Raf De Bont has termed 'residents in the field'—long-term ecological sites studied by local scientists often become a type of home as a site visited for multiple years for daily collections of data, regular instruction for field courses and frequent intellectual and social meetings.⁷ For Elton, Wytham Woods became such a home environment.

2 Donald Worster, *Nature's economy: a history of ecological ideas* (Cambridge University Press, 1994); Robert J. Richards, *The romantic conception of life*. (University of Chicago Press, 2002).

3 Robert E. Kohler, *All creatures: naturalists, collectors and biodiversity, 1850–1950* (Princeton University Press, 2006); Jeremy Vetter, *Field life: science in the American West during the railroad era* (University of Pittsburgh Press, 2016).

4 See, for example, Megan Raby, 'Slash-and-burn ecology: field science as land use', *Hist. Sci.* 57(4), 441–468 (2019).

5 See, for example, Patricia Clough and Jean Halley (eds), *The affective turn: theorizing the social* (Duke University, Durham, NC, 2007); Kay Milton, *Loving nature: towards an ecology of emotion* (Routledge, London, 2002); and Janelle A. Schwartz, *Worm work: recasting Romanticism* (University of Minnesota Press, Minneapolis, 2012).

6 Clough and Halley, *op cit.* (note 5).

7 Raf de Bont, *Stations in the field: a history of place-based animal research, 1870–1930* (University of Chicago Press, 2015), p. 199.

THE VALUE OF WYTHAM WOODS AS A SCIENTIFIC SITE

Just outside Oxford city lies a thousand acre wood that has served as an ecological laboratory for the academics of Oxford since 1942.⁸ The ecologist Peter Crowcroft, who was a student in the BAP, identifies ‘the first serious reconnaissance of Wytham’ as taking place in 1943, followed by 10 years of development in ‘its philosophy, methodology, and ecological objectives’.⁹ Reflecting in 1954 on the ecological survey being conducted in Wytham, Elton and an American colleague, Richard S. Miller, likened the enormity of the task to the experience of early chemists:

The early organic chemist must have felt very much as the animal ecologist often does now. It must have seemed dangerous and vain to look beyond, say formaldehyde or a benzene ring, towards higher complexities. Yet organic chemists now seem to move with great confidence amidst compounds of complicated structure, built together by steady research upon related chemical compounds and on the general properties of such a system. Perhaps it is fairer to assess the present position of the animal ecologist as comparable with that of the *inorganic* chemist at the time of Dalton! The ‘elements’ of the ecologist are whole organisms, themselves chemically heterogeneous and organized into interspersed population systems living chiefly outside the laboratory, so the task will be much bigger for us.¹⁰

Elton also identified three key stages to the task that lay before him in Wytham, the first being a ‘natural history and statistical stage’ focused on life histories, a second stage focused on ‘principles of population’ and a third and final stage examined ‘energy paths and energy flow’.¹¹ Although a formidable challenge, Elton firmly believed ‘understanding the whole economy of nature’ was essential, and directly quoted his hero, Charles Darwin, when stressing the importance of embracing complexity when conducting ecological work.¹²

By the early 1970s, Wytham Woods had been surveyed by the BAP for decades and was being heralded as a ‘mecca for ecologists’, with many scientists asserting that Wytham Woods represented the most intensively studied long-term ecological site in the world.¹³ Indeed, in his 1966 book, *The pattern of animal communities*, Elton declared that the Wytham Biological Survey had identified at least 5000 animal species in this small patch of woodland. Celebrating the woods for its number of species, Elton wrote that ‘the estimated fauna of this calcareous south midland hill may be as much as a sixth or a fifth of the British fauna—on an area that is only 1/25 000 of England and 1/60 000 of the British Isles’.¹⁴ For Elton, who as early as 1958 in his *Ecology of invasions by plants and animals* identified ‘conserving ecological variety’ as ‘the ultimate goal of nature

8 For a history of Wytham before the 1940s, see A. J. Grayson and E. W. Jones, *Notes on the history of Wytham Estate and special reference to the woodlands* (Holy Well Press, Oxford, 1955).

9 Peter Crowcroft, *Elton's ecologists: a history of the Bureau of Animal Population* (University of Chicago Press, 1991), p. 97.

10 Charles S. Elton and Richard S. Miller, ‘The ecological survey of animal communities: with a practical system of classifying habitats by structural characters’, *J. Ecol.* **42**(2), 465 (1954).

11 Elton, *op. cit.* (note 10), pp. 466–468.

12 *Ibid.*, p. 466. Elton references Charles Darwin as a hero in Charles Elton, ‘Charles Sutherland Elton: life and scientific work’, MS. ENG. C.3326, Folder 36, Elton's Papers, Bodleian Special Collections, University of Oxford.

13 William Vandivert, ‘An English wood, “most studied” by the ecologists’, *Smithsonian*, May 1974. The term ‘mecca’ is also used to describe the Hastings Reserve in California. See Peter S. Alagona, ‘A sanctuary for science: the Hastings Natural History Reservation and origins of the University of California's nature reserve system’, *J. Hist. Biol.* **45**(4), 651–680 (2012).

14 Charles Elton, *The pattern of animal communities* (Methuen & Co., London, 1966), p. 49.

protection', the incredible number of species in this small space was a significant source of its scientific value.¹⁵

A key reason why Wytham Woods became so celebrated for its diversity in species was the way in which the site came to be inseparable from the BAP.¹⁶ During its 30 years in operation, the researchers of the BAP walked the woods of Wytham. Researchers' theses included descriptions of the woods because 'the history of the Bureau of Animal Population became so intertwined with the advancement of knowledge of Wytham Estate, that it [was] necessary to impart a feeling for the spirit of the place'.¹⁷ This connection between Wytham and the BAP extended to the physical location of the BAP offices themselves, which included a field store selling equipment to be used in the woods and an area called 'The Museum', which was the 'repository for the specimens and data being accumulated in the course of the Wytham Ecological Survey'.¹⁸

Perhaps surprisingly for a scientific site in the landlocked midlands of Britain, another attraction of the woods for Elton was its similarity to an island ecosystem. Reflecting on the appeal of islands for ecologists, Elton wrote in *The pattern of animal communities*: 'Any place that has some of the qualities of an island seems to attract one as an ecologist, and this wooded hill set in a ring of farmland, itself bounded on three sides by a river, has some of the ecological integrity of an island, and at the same time a really rich variety of habitats and a profusion of species that most islands lack.'¹⁹

Elton was also mindful of Wytham Woods' complex relationship with the concept of naturalness. Despite a long history of multiple land uses, for Elton, the 'ecological integrity' of Wytham Woods remained intact. As he stated in *The pattern of animal communities*:

By no stretch of the imagination can Wytham Hill be called an entirely natural ecosystem: its rocks quarried for road metal, its timber selectively cut down or pollarded, its oak bark taken for tanning, its dead wood gathered for fuel, its glades cattle-grazed, its predatory animals and birds shot to protect game, some parts deforested for crop lands or heavily scarred by recent forestry fellings and plantings, some old fields allowed to grow back into woodland, the river below controlled since the reign of James I by locks and nowadays artificially stocked with fish (many of which the angler throws back after catching them), its springs piped for water supplies or dammed to make ponds attract wild-fowl—and its habitats now studied and sometimes modified by ecologists.²⁰

Within the context of the British countryside, such historical modification of the environment was commonplace, and by 1966 Elton clearly felt that 'nearly all the processes of interference mentioned in the examples above have ceased by now, or have become stabilized or are contained within quite circumscribed areas of the hill'.²¹ So much so, that he described the small area intensively studied by him and the BAP as 'Our "wilderness"'.²²

While the diversity of species and island-like qualities of Wytham Woods marked the scientific site as special, it simultaneously gained scientific value for its quintessential ordinariness. In the

15 Timothy Farnham, 'A confluence of values: historical roots of concern for biological diversity', in *The Routledge handbook of philosophy of biodiversity* (ed. Justin Garson), pp. 11–25 (Routledge, New York, 2017), at p. 21.

16 For other examples of field sites valued on account of their biodiversity, see Megan Raby, *American tropics: the Caribbean roots of biodiversity science* (University of North Carolina Press, Chapel Hill, 2017).

17 Crowcroft, *op. cit.* (note 9), p. 98.

18 *Ibid.*, p. 48.

19 Elton, *op. cit.* (note 14), p. 45.

20 *Ibid.*, p. 46.

21 *Ibid.*, p. 46.

22 *Ibid.*, p. 49.

woods of Wytham, ‘we find ... an almost embarrassingly rich assembly of species, in a bit of landscape which, though beautiful and varied after the manner of the small-scale English scene, is not conspicuously so, and which for many years has carried the reputation among entomologists of lacking many of the really “exciting” species of insects’.²³ As Elton himself pointed out, much like other parts of Britain, the Oxford district had long caught the hearts and minds of naturalists on account of its rural beauty, its charm and its ordinariness. In 1922, botanist A. H. Church, for example, described the region as ‘characteristically commonplace ... with no special developments in any direction, and with little to attract the visitor from other more favoured districts. *Yet it is this very commonplace character which constitutes its greatest asset*’.²⁴ As recently as 1997, ‘ordinary’ continued to be central to scientists’ descriptions of Wytham. In an article for the *Oxford Times*, Mike Morecroft, an ecologist working in Wytham, declared the woods a ‘living laboratory’ that combined ‘ordinariness’ with ‘the extraordinary intensity of study which has made Wytham so useful as a site on which to develop general principles in ecology’.²⁵ It was this combination of typical and special that made—and continues to make—the site so scientifically valuable.

THE MEN AND WOMEN WORKING IN THE WOODS

As a ‘mecca for ecologists’, Wytham did not only attract the attention of Elton, but rather many researchers made the woods the focus of their teaching and research programmes (see figure 1). For example, Wytham has long attracted a diverse range of scientists and so-called amateurs studying the bats, badgers, blue tits, voles, deer and other species that made this particular part of the District of Oxford their home. However, it is the long-term studies conducted on the British blue tit for which the woods are best known. In 1947, ornithologist and evolutionist David Lack (1910–1973), who became the director of the Edward Grey Institute for Ornithology at the University of Oxford in 1945, began studying the ecology, evolution and behaviour of the blue tits in Wytham. Lack was later joined by other famous figures, such as John R. Krebs (1945–) and Richard Dawkins (1941–), who began studying blue tits in the woods from the 1960s onwards.²⁶ To provide an idea of the scale of this research programme, by 2010 tit studies in Wytham had resulted in no fewer than 40 theses by graduate students working with Lack and others.²⁷ Although they shared a love for Wytham Woods, historians such as Hannah Gay and Frank Egerton have highlighted tensions between Elton at the BAP and Lack at the Edward Grey Institute, and suggested that competition between these individuals may have played a part in the ecological theories they developed: ‘One wonders whether there is any historical significance to the fact that obsession with assessment and survival in the academic world was very much on the rise when these new ideas emerged.’²⁸

²³ *Ibid.*, p. 50.

²⁴ Emphasis added; A. H. Church, *Introduction to the plant-life of the Oxford district* (Humphrey Milford, London, 1922), pp. 3–4.

²⁵ Mike Morecroft, ‘The city’s living laboratory’, *Oxford Times*, 3 January 1997.

²⁶ Hannah Gay, *The Silwood circle: a history of ecology and the making of scientific careers in late twentieth-century Britain* (Imperial College Press, London, 2013), p. 243.

²⁷ C. M. Perrins and A. G. Gosler, ‘Birds’, in *Wytham Woods: Oxford’s ecological laboratory* (ed. P. S. Savill, C. M. Perrins, K. J. Kirby and N. Fisher), pp. 145–171 (Oxford University Press, 2010), at p. 171.

²⁸ Gay, *op. cit.* (note 26), p. 116. See also Frank N. Egerton, ‘The history of ecology: achievements and opportunities, part one’, *J. Hist. Biol.* **16**(2), 259–310 (1983), at p. 295.



Figure 1. Photograph reproduced with permission and © Oxford University Museum of Natural History.

Although blue tit studies became the most well-known type of research conducted in the woods, the small creatures who rustle on and burrow in the forest floor, and the plants and fungi that form it, have also long garnered the attention of ecologists at Wytham. Indeed, it was the mice and voles that first brought Elton into the woods, where he conducted a study of the crucial roles played by rodents in both forest ecosystems and British agriculture.

It is particularly notable that these smaller organisms in the woods attracted several women who conducted studies in the woods as undergraduates, graduates, spouses and professional researchers in their own right. Women such as Gillian Godfrey, who studied voles as part of the BAP, and Winifred Phillips, who studied rabbits, often spent months and sometimes years laying and checking live traps, ringing and marking individuals and studying animals' movements and behaviours. Perhaps the most well-known woman of Wytham is Kitty Paviour-Smith; figure 2 shows her on a 1956 ecology course held in Wytham. Paviour-Smith began work in the woods as a student and went on to publish on the fungi that grew there. In addition, she went on to collaborate with—and later marry—Mick Southern (1908–1986), a lead researcher of the tawny owl, which he studied in Wytham from 1947 to 1959.²⁹ One characteristic shared by these women was that they brought with them financial support, be it from private funds, Universities Federation for Animal Welfare grants or international fellowships aimed at promoting women in the academy, such as the

²⁹ For an example of the role of place and social relationships in the work of women in ecology, see Laura Cameron and David Matless, 'Translocal ecologies: the Norfolk Broads, the "natural" and the International Phytogeographical Excursion, 1911', *J. Hist. Biol.* **14**(1), 15–41 (2011).



Figure 2. Photograph reproduced with permission and © Oxford University Museum of Natural History.

University Women's International Fellowship.³⁰ They also demonstrated intense determination to be part of the BAP. As Crowcroft recalls, when Godfrey interviewed Elton, for example, Elton 'told her he didn't care to have women in the Bureau just yet. She offered to work as a bottle washer and that did the trick. There wasn't much future in bottle washing he retorted, so she had better come and do research'.³¹

The photographs in figures 1 and 2 are reminiscent of the kinds of groups of researchers in the field often associated with marine biological laboratories, which are scientific sites that have long been seen by historians of science as places that succeeded in creating spaces for under-represented individuals in science.³² And it is indeed notable that Wytham Woods and the BAP attracted women ecologists as early as 1950. Although a steady stream of women worked in the woods in subsequent decades, they were certainly far outnumbered by their male colleagues. A list of official permits from 1957, for example, includes the names of three women and 36 men.³³ Furthermore, as Gay's analysis of the

30 Crowcroft, *op. cit.* (note 9), pp. 55–65, 81–82.

31 *Ibid.*, p. 58.

32 See, for example, Kenneth R. Manning, *Black Apollo of science: the life of Ernest Everett Just* (Oxford University Press, 1985); and Keith R. Benson, 'Summer camp, seaside station and marine laboratory: marine biology and its institutional identity', *Hist. Stud. Phys. Biol. Sci.* 32(1), 11–18 (2001).

33 Report of Sub-Committee for Management of Biological Reserves January 1956–April 1957, Box 75, Oxford Institute of Forestry, University of Oxford.

Silwood circle—a group of ecologists stemming from Imperial College London, which included some individuals who went on to spend time at Oxford—reveals, describing the collaborations taking place in Wytham as simply inclusive and welcoming to women would be overly simplistic. These women entered the woods starting in the 1950s, but ‘in the 1960s and early 1970s science at Silwood was still a largely male world. It was less inclusive than it should have been of the few female scientists who worked there. The working environment for men with young families was relatively good, but Silwood could be isolating for young wives and mothers’.³⁴ In this regard, the work taking place in Wytham mirrors trends identified by a growing number of historians of science who have examined the masculinization of field work in areas ranging from mountains to glaciers.³⁵

WYTHAM WOODS AS A SITE FOR EMOTIONAL CONNECTION AND POETIC INSPIRATION

Whether men or women, researchers who have spent their careers in Wytham Woods have often identified the scientific site as simultaneously serving as an intellectual foundation for their scholarship and as a site of aesthetic and emotional significance. Take, for example, the words of John Krebs—Lord Krebs—who has spent decades studying blue tits in the woods. When writing the preface for a 2010 volume celebrating research conducted at Wytham, Krebs chose to particularly highlight the visceral experience of being in the woodlands:

For those of us who have spent many hours, weeks and years in Wytham, it is not just a source of ecological data, but also a place of great beauty. For me, it is hard to match the sensation of inhaling the scent of a carpet of damp moss on a February morning and chewing ‘bread and cheese’—the first, pale green, buds of hawthorn that foretell the arrival of spring, and another tit breeding season, in Wytham.³⁶

For Krebs, the physical, emotional, aesthetic and intellectual are all interwoven in what it means to work in the woods of Wytham. Such open recognition of the experience—the touch, the feel, the challenge and the exhilaration—of doing science has long been a characteristic of ecology, and field sciences in general. Take also another ecologist, Arthur Tansley, who often waxed poetical about the beauty and charm of the British landscape.³⁷ As Stephen Bocking has emphasized, ‘ecologists insisted that their status as scientists ... need not conflict with an aesthetic, even emotional, response to the British landscape’.³⁸ Indeed, it was these ‘bonds between their science, the countryside and British national identity’ that formed the very heart of academic ecology in the United Kingdom.³⁹ Furthermore, as these quotes demonstrate, the very notion of what made the landscape

34 Gay, *op. cit.* (note 26), p. 336.

35 Bruce Hevly, ‘The heroic science of glacier motion’, *Osiris* 11, 66–86 (1996); Helena Ekerholm, Karl Grandin, Christer Nordlund and Patience A. Schell (eds), *Understanding field science institutions* (Watson Publishing International, Sagamore Beach, 2017).

36 John Krebs, ‘Preface’, in *Wytham Woods: Oxford’s ecological laboratory* (ed. P. S. Savill, C. M. Perrins, K. J. Kirby and N. Fisher), pp. ix–x (Oxford University Press, 2010), at p. x.

37 For more on Tansley, see works such as Peter Ayres, *Shaping ecology: the life of Arthur Tansley* (Wiley-Blackwell, Chichester, 2012).

38 Stephen Bocking, ‘Nature on the home front: British ecologists’ advocacy for science and conservation’, *Environ. Hist. UK* 18, 261–281 (2012), at p. 277.

39 *Ibid.*, p. 281. Peter Alagona has used the word ‘nostalgia’ to describe a similar phenomenon, but in the United States. See Alagona, *op. cit.* (note 13).

charming, beautiful or aesthetically pleasing was tightly woven with political meanings tied to ideas of nationalism and British heritage.⁴⁰

This is not to say that all scientists expressed their emotional, romantic or aesthetic sensibilities equally. In contrast to the emotional, poetic, prose of someone like Erasmus Darwin or Arthur Tansley, Elton has been identified as a naturalist who often refrained from such diversions.⁴¹ As Daniel Simberloff has stated: ‘Part of the reason why Elton is primarily associated in our minds with academic ecology ... is perhaps that, unlike Leopold, Carson, Muir and many other conservation writers, he did not rivet our attention on conservation issues with moving, almost poetic, rhetorical devices.’⁴² Instead, ‘Elton’s style, in writing about conservation as about academic ecology, was dry and laconic, with occasional wry, sometimes sarcastic, humour but never emotional prose’.⁴³ Similarly, in an obituary for Elton, Max Nicholson wrote of Elton’s ‘uncommonly unsentimental love of nature’.⁴⁴

The inspiration for poems, songs and romantic descriptions for so many, it is difficult to imagine Elton was truly immune to the allure of Wytham Woods. Indeed, the very words of Nicholson’s obituary raise the question: is it possible for a love of nature to be ‘unsentimental’? There are certainly moments in key works written by Elton when he relaxes his prose and describes the environment in a way that reflects his love of the outdoors and the ecosystems he studied. Take, for example, the following quote where Elton evokes the poem ‘Thyrsis’ when describing Wytham: ‘Down by the slow muddy River Thames there is a special riparian zone, half meadow and half marsh, and in some of the pastures near it one can hear the cries of curlews in the spring, and is reminded of Matthew Arnold’s description of “Wytham flats” in his poem “Thyrsis”’.⁴⁵ Elton goes on to directly allude to the sensory experience of working in the woods: ‘The weather, the time of year, the time of day or night, the extraordinary fluctuations in numbers that many species undergo, one’s own variations in receptivity and fatigue, all complicate scientifically, yet enrich personally, the experience of community ecology.’⁴⁶

If it indeed was the case that Elton avoided the ‘poetic, rhetorical devices’ used by so many of his predecessors and peers, then it is particularly noteworthy that he chose to spend 50 years married to the poet Edith Joy Scovell. Extending ideas of Green Romanticism and Romantic ecology most often connected with Wordsworth and the nineteenth century, poets such as Scovell captured the scientists’ connection with their environment in her twentieth century verse.⁴⁷ Scovell, who went by her middle name Joy, was Charles Elton’s

40 The role of nostalgia in conceptions of nature is also discussed in Alagona, *op cit.* (note 13).

41 Within the history of ecology, one of the first to draw a distinction between ‘holistic ecologists’ and ‘analytical ecologists’ was Donald Worster. See Donald Worster, *Nature’s economy: the roots of ecology* (Sierra Club Books, San Francisco, 1977). See also Egerton, *op. cit.* (note 28).

42 Daniel Simberloff, ‘Charles Elton: pioneer conservation biologist’, *Environ. Hist.* **18**, 183–202 (2012), at p. 195. For more on poet-naturalists, see Schwartz, *op. cit.* (note 5), and Sam Solnick, *Poetry and the Anthropocene: ecology, biology and technology in contemporary British and Irish poetry* (Routledge, New York, 2017).

43 Simberloff, *op cit.* (note 42).

44 Max Nicholson, ‘Rebellion against the ratpack’, *Guardian*, 13 May 1991.

45 Elton, *op cit.* (note 14), p. 61.

46 *Ibid.*, p. 61.

47 See, for example, Lisa Ottum and Seth T. Reno (eds), *Wordsworth and the green romantics: affect and ecology in the nineteenth century* (University of New Hampshire Press, Lebanon, NH, 2016); Solnick, *op. cit.* (note 42); E. J. Scovell’s works include *Shadows of chrysanthemums and other poems* (Routledge, London, 1944) and *The river steamer and other poems* (Cresset Press, London, 1956).

second wife and herself a graduate of the University of Oxford.⁴⁸ In addition to a long career as a poet, Scovell accompanied Elton on many of his walks in Wytham and on his field trips abroad. Indeed, in at least one application to conduct fieldwork in 1970, Scovell is identified as Elton's field and secretarial assistant.⁴⁹ Elton's papers also include copies of at least one notebook used by Scovell to take field notes and other visual evidence including photos of Scovell in Brogden's Belt, part of Wytham Woods, as well as photos of her taking field notes in Mogambo, India, in 1968. For Kitty Paviour-Smith, the scale of Scovell's involvement in Elton's research, at least during the years after his retirement, warranted referring to Scovell as Elton's 'colleague' in the obituary she wrote when Elton died in 1991.⁵⁰

Scovell's immersion in scientific environments—including the social relationships formed by the researchers themselves in these environments—is clearly reflected in her artistic works. Poems such as 'The naturalist', 'The field', 'Ash trees' and 'The outskirts of the woods' were most likely inspired by her husband and the woods of Wytham where Elton spent most of his career. During this second and final verse of 'The naturalist', for example, it is difficult to think the naturalist Scovell is describing is anyone other than her ecologist husband:

Spacing the parsnip flowers and passenger rose,
The grass like air stood everywhere in channels.
There he thigh-deep, a patient man in flannels,
With his glass-green net still, and in repose
His heavy thoughtful head, seemed rooted in the brome,
Stock of that natural garden, never so at home.⁵¹

Other descriptions by people drawn to the woods by their interest in the animals that lived there create romantic images of this small patch of, by some descriptions, almost utopian ground. One birder recalled a 'vivid memory' of a 'May-time walk' in the woods in 1943:

It was not of the fine trees, not of the vista where you first see the noble bend in the Thames below and around, nor of the fine manor house. It was an open space of wood well dotted with newly planted trees and low bushes. These apparently had provided one species of bird with its optimum of building conditions. The perfect site had been found by a large number of pairs of blackcaps. Their liquid, bubbling songs—halfway between blackbird and nightingale—were heard on all sides, and we found nest after nest, as if the birds were gregarious by nature, as they certainly are not ... but now and again it so happens that a patch of ground is so closely dotted with congenial sites as to be irresistible, and the prejudice against close neighbours is allowed to lapse. So it was that summer at Wytham.⁵²

WYTHAM WOODS AS A SITE OF AESTHETIC VALUE

In addition to inspiring poetry, songs and nostalgic memories by British birders, the look and feel of Wytham Woods ran right to the heart of discussions about their management and use.

48 Biographical summary in MS. ENG. C.3329, Folder C33, Elton's Papers, Bodleian Special Collections, University of Oxford.

49 Application to conduct research at the Smithsonian Tropical Research Institute, Panama Canal Zone, 1970, in MS. ENG. C.3329, Folder C46, Elton's Papers, Bodleian Special Collections, University of Oxford.

50 Kitty Paviour-Smith, 'Charles Elton', *The Independent*, 13 May 1991. For other examples of partners as collaborators, see A. Lykknes, D. L. Opitz and B. Van Tiggelen (eds), *For better or for worse? Collaborative couples in the sciences* (Birkhauser, Basel, 2012).

51 Scovell, 'The naturalist', in *Shadows of chrysanthemums*, *op. cit.* (note 47).

52 Anonymous, *Spectator*, 9 February 1943.

The woods were bequeathed to the University of Oxford by Colonel Raymond ffennel and his wife, who owned the land between 1920 and 1942. The bequest was made in memory of their daughter, Hazel, who died young and had a particular love for Wytham and for animals, with her pets including horses, donkeys, lemurs, meerkats and rats.⁵³ The details of the bequest included specific instructions concerning the preservation of the woods' 'general character' and 'aesthetic values typical of the setting'.⁵⁴ The ffennels also wished the site to be called the Woods of Hazel, which was a name occasionally used alongside Wytham Woods. However, by the 1980s the name Woods of Hazel ceased being used entirely, apparently due to potential 'misunderstandings' caused by there also being a 'scrub species Hazel (*Corylus avellana*)' that was not a 'predominant vegetation' in the woodland.⁵⁵

Wytham Woods also holds significance as a scientific site for being a place where ecology and forestry met, often with dynamic results.⁵⁶ In the 1940s, central figures in British ecology such as Tansley were expressing concerns about the impact of forestry on the aesthetics of the British countryside, while those within forestry were often sceptical that ecologists had the ability to provide helpful information for land management.⁵⁷ Within Wytham, the key to understanding these tensions can be found in the competing visions and values behind the various land uses applied in the woods.⁵⁸ Although Wytham Woods may have been a site for ecological research, it was also a managed forest that was surrounded by farmland. Such a multitude of land uses created complex relationships between the scientists, foresters and farmers that worked on and attempted to profit—either intellectually or materially—from the land.

The various groups working in the woods were overseen by a sub-committee composed of people such as Lack, Southern and the ethologist Niko Tinbergen, who as a group discussed topics ranging from damage to ecologists' equipment in the woods by 'trespassers' to how much of a pay rise to give the keeper. Minutes from these meetings reveal the tension between the ecologists and forestry researchers working in Wytham through pages and pages of dry accounts concerning the number of animals culled or the number of trees felled. Such lists are occasionally punctuated with minutes from tense disagreements between the Department of Forestry, who sought to manage the woods, and the ecologists—and in particular Elton—who wanted the woods to be left alone. These discussions, which ranged from day-to-day management decisions to broader policies and priorities, worked their way along an organizational structure that bridged the university administration, the Department of Forestry and the ecologists working in the woods. Professor Laurie from the Department of Forestry, for example, argued to continue

53 'Hazel: the happy journey', in MS. ENG. C.3328, Folder A 83, Elton's Papers, Bodleian Special Collections, University of Oxford.

54 These aspects of the bequest are quoted in the working plans for Wytham Woods, as well as in numerous theses by graduate students in the Department of Forestry. See, for example, F. C. Osmaston, 'The revised working plan for the Wytham Woods or the Woods of Hazel for the period 1959/60 to 1968/1969', Box 73, Oxford Forestry Institute, University of Oxford.

55 'Management Plan for Wytham Woods, October 1980–1985', p. 38, Box 74, Oxford Forestry Institute, University of Oxford.

56 For a focus on the history of forestry in Wytham Woods, see Keith Kirby, 'One man and his log', *Q. J. Forestry* **111**(1), 52–58 (2017); Keith Kirby, 'Charles Elton and Wytham Woods', *Br. Wildlife*, 256–263 (2016); and Keith Kirby, 'Walking back in time: conservation in Berkshire, Buckinghamshire and Oxfordshire, 1942–1965, from the diaries of Charles Elton', *Fritillary* **7**, 1–30 (2017).

57 Stephen Bocking, *Ecologists and environmental politics: a history of contemporary ecology* (West Virginia Press, Morgantown, 2017), pp. 16–18.

58 Tensions between Elton and the Department of Forestry are also discussed in K. J. Kirby, 'The transition of Wytham Woods from a working estate to unique research site (1943–1965)', *Landscape Hist.* **37**(2), 81–90 (2016).

managing the woods, while Elton argued that tree removal impinged on the work of the many ecologists in the woods. Their arguments hinged on the length of their work in the woods, the 'naturalness' of the woods and the 'character' of the woods. As such, Laurie and Elton drew both on the aesthetic value and the scientific value of the site. For example, the very first of 11 points listed by Elton as a defence of the ecological research being conducted at Wytham Woods read: 'The special value of Wytham Woods to field biologists lies (a) in their nearness to Oxford, (b) their extent (true forest conditions contrasted with spinneys and woodland stripe), (c) in their ownership by the University giving continuity of access and security of experiments and valuable equipment, and (d) in the variety and richness of habitats and plant and animal life, resulting from the structure of the hill and very light management since c. 1850, which also provides much of its aesthetic charm.'⁵⁹

Forestry researchers continued to evoke the role of aesthetics in the scientific value of Wytham well into the twentieth century. Graduate students, for example, repeatedly echoed the 'fennels' demand that the university 'Maint[ain] ... the general character of the woods and ... the aesthetic values typical of the setting' in the introductions of their theses. The following quote from a 1987 Master's thesis is representative of these calls for action on the part of the university to honour the conditions of the bequest and to invest in maintaining the beauty and charm of the woods:

Rising greenly above the stone walls and thatched roofs, the thousand acres of Wytham Woods constitute a treasure for the citizens of Oxfordshire and the university which owns it. Small in area, it yet represents an environment rich in an abundant diversity of indigenous plant and animal life, a refuge of numerous rare species and disappearing habitats, the source of an unparalleled [*sic*] body of scientific data, a reflection of recorded centuries of management for use, and a precious open space in an increasingly crowded countryside, frequented by rambblers, bird-watchers, old couples, young families, and lovers of nature of all description.

As mentioned above, Wytham Woods was bequeathed to the University of Oxford in 1943 by the late Colonel Robert ffennel under a deed which provided that 'every care should be taken to preserve the woods in their present state of natural beauty'. Today, the university is still in possession of the rich gift, but, at the same time, that gift has become an under-staffed, under-funded and over-grown tangle of over-stocked and under-managed plantations and exotic-invaded, deer-frayed, squirrel-nibbled, non-regenerating, senescent semi-natural woodland—which costs money.⁶⁰

Competing priorities among the various stakeholders involved in Wytham are revealed when we examine how animals, and particularly badgers, were configured within the woods. Throughout the 1950s and '60s, management reports produced for the sub-committee included sections dedicated to 'Animal Threats' or 'Pest Control'. The January 1956–April 1957 report, for example, defined pest 'as referring to animals embarrassing to forestry or to agriculture on the surrounding farms', and went on to state that: 'Experience has shown that spoon-gassing badger setts kills a few of the occupants and makes the rest very wary for some weeks, or months, but never ... exterminates a sett. It is recommended that complaints about badgers and foxes shall normally be dealt with on these lines by Mr.

⁵⁹ Advisory Committee on the Biological Aspects of the Management of Landed Estates of the University and Colleges, minutes of a meeting held on 9 March 1961, Box 75, Oxford Forestry Institute Working Plans, University of Oxford.

⁶⁰ Melanie Jean McDermott, 'Management plan for Wytham Wood 1988–1992', MS thesis, University of Oxford (1987), p. 1, Box 69, Oxford Forestry Institute Working Plans, University of Oxford.

Meads. Severe and persistent damage may require volunteers to sit up at night with a gun.⁶¹ These descriptions of gassing badgers, and other pests in the woods that negatively impacted the trees or surrounding agricultural land, continued until the Badgers Act of 1973 when the practice of wilfully killing badgers became illegal in Britain. Even then, some exceptions could be made and the farmers and the keeper were to communicate closely to determine which badgers to kill and why.

Despite being initially gassed as pests owing to the damage they inflicted to farmland, the badgers in Wytham ultimately became the subject of long-term studies that generated pioneering information regarding badger feeding ecology and social behaviour. The badger research started in the 1960s led by Hans Kruuk, and later by David Macdonald, and life-histories monitoring began in 1987. Macdonald described the badger work: ‘Combining traditional field methods like radio-tracking, behavioral observation and field surveys with more modern techniques such as ultrasound scanning, hormone assays, DNA “fingerprinting” and infra-red video surveillance has allowed us to gain unique insights into badgers’ social systems and demography.’⁶² The badgers of Wytham became rather famous in ecological circles, and the British badger in general was transformed during the latter half of the twentieth century from pest to a flagship species for British wildlife. During the same period, the long-term badger projects at Wytham also began to reflect contemporary trends in the rise of citizen science, with ecologists working with citizens—and specifically those in drug rehabilitation programmes—to study badger behaviour. Nevertheless, the spectre of ‘pest’ remained, with farmers across the country becoming increasingly concerned that badgers were vectors for bovine tuberculosis (TB). For example, in the 1980–1985 Management Plan for Wytham Woods, badgers were described as: ‘a true native of British woodland and its presence in no way conflicts with other uses of Wytham. The badgers are however a nuisance when they invade the adjacent farmland where they break fences and feed on grain crops and occasional culling is necessary ... A potential threat to cattle is the occurrence of bovine tuberculosis and in 1977 outlying setts which were becoming established in the dairy grazing black at the University Field Station were gassed in view of this risk.’⁶³

SCIENTIFIC SITES AND PUBLIC ACCESS: A TALE OF TWO PARTS

Another aspect of Wytham that has significantly changed over time is the extent to which the scientific site has been accessible to people outside of the academic scientific community. Although, according to the bequest, the land of Wytham Woods was to remain readily accessible to the public, and particularly to children from under-privileged backgrounds, the university did not originally enact this aspect of the agreement. While owned by the ffennel family, the woods were used for recreation and education, with an outdoor school called Hill End Camp being established in the woods in 1930 for the benefit of ‘children’s health and education’.⁶⁴ It was ffennel’s hope that these traditions of outreach and public engagement would continue, with Wytham being open to members of the community

61 Report of Sub-Committee for Management of Biological Reserves, *op. cit.* (note 33).

62 David Macdonald, ‘Wytham’s badgers: the roots of sociality’, *Communicator*. Michaelmas 1997.

63 Management Plan, *op. cit.* (note 55).

64 ‘School children and the country’, *Country Life*, 20 August 1932; ‘Camp schools’, *Country Life*, 4 June 1938.

outside of the academy. However, in the 1940s, leading voices in the emerging field of ecology were expressing concerns about the need for ecology to separate itself from the kinds of activities frequently associated with so-called amateurs or nature lovers. For example, the Wild Life Conservation Special Committee established in 1945 and chaired by Elton's former advisor, Julian Huxley, advocated for outdoor 'laboratories' to be clearly distinguished from parks, which were associated with recreation and the public. Similarly, Elton himself advocated for the term 'scientific reserve' for spaces such as Wytham with the express purpose of marking such spaces as distinct from nature reserves. Thus, during a time when ecology was undergoing the process of professionalization, restricting access to Wytham can be seen as a key stage in the woods' development as a scientific environment.⁶⁵ Restrictions to access to Wytham Woods was ensured by a permit system, with the archives at University of Oxford including boxes of permit requests from individuals such as an amateur called Baxter who was part of the Committee of the Ashmolean Natural History Society, schools such as the Magdalen College School seeking class field trips, and other local conservation groups such as the Oxford Ornithology Society.⁶⁶ When they can be found, lists of permit approvals are short and the site appears to be largely reserved for academics from the University of Oxford. Indeed, by the 1980s, graduate students in the Department of Forestry began directly calling for Wytham Woods to become more open to members of the public through more generous awarding of permits and an expansion in educational events.⁶⁷

It is noteworthy, however, that in recent years there has been a significant change in this attitude, with new outreach efforts ranging from a rotating exhibit on Wytham Woods at the Oxford University Museum of Natural History to hosting resident artists and poets. Combined with active engagement with social media platforms, Wytham Woods has been transformed into a scientific environment that truly embraces the arts, outreach and public engagement. As such, today Wytham Woods reflects the values and hopes of Ffennell's original bequest more than at any other time in its history. As a site that has also embraced citizen science in recent years, where non-scientists participate in the collection of biodiversity data, Wytham has also come to embody a value Elton at least expressed early in his ecological career.⁶⁸ Before Elton's responsibilities during the growing professionalization of ecology in the 1940s, he often praised the observation skills of the so-called amateur. Likening the skills of the amateur bird watcher to an amateur sleuth, Elton wrote in his 1933 book, *Exploring the animal world*, that if a 'man wants to take a census of herons: he ropes in hundreds of volunteers to count the herons and map the heronries. Another man does the same for the great-crested grebe: he obtains the help of over a thousand people, most of whom are not professional ornithologists at all—just as people who are not Scotland Yard detectives can report the presence of a man with white hair and patent leather shoes, and bloodstains on his coat-sleeve'.⁶⁹ This kind of call for

65 See, for example, Bocking, *op. cit.* (note 57), p. 32.

66 Official Permits Folder, J.A.E. MSS Wytham Limbo 1 Minutes and Documents to Sept.1962, Box 75, Oxford Forestry Institute Working Plans, University of Oxford.

67 See, for example, McDermott, *op. cit.* (note 60).

68 C. D. Buesching, J. R. Clarke, S. A. Ellwood, C. King, C. Newman and D. W. Macdonald, 'The mammals of Wytham Woods', in *Wytham Woods: Oxford's ecological laboratory* (ed. P. S. Savill, C. M. Perrins, K. J. Kirby and N. Fisher), pp. 195–196 (Oxford University Press, 2010).

69 Charles Elton, *Exploring the animal world* (George Allen & Unwin, London, 1933), p. 14.

broad participation in ecology and conversation is now a central characteristic of how Wytham Woods is presented to the public.

CONCLUSION

When evaluating the value of a scientific site, there are many measures that can be applied. Here we have examined how factors ranging from the number of species at a site, to its beauty and charm, can be held up as sources of scientific value. Long-term field sites such as Wytham Woods also often embody an emphasis on the local, on the flora and fauna of specific places, not generic spaces. Similarly, the people who performed research in Wytham were more often than not from that place, as members of the faculty of the University of Oxford or as members of local wildlife and conservation community groups. In this way, Wytham Woods mirrors the history of biological stations, which, as Raf De Bont has demonstrated frequently, focused on ‘local nature’ and created ‘trading zones’ for the ‘transfer of knowledge between various groups’.⁷⁰

However, from its inception as an ecological site, Wytham has also attracted scientists from across the globe. As Susan Jones has noted: ‘The BAP that Elton founded in 1932 functioned as a central training ground for ecologists and other scientists who took the methods and concepts they learned there to the four corners of the world.’⁷¹ Indeed, some of these individuals played central roles in directing long-term ecological sites that mirrored Wytham in various ways, such as Francis Evans of the University of Michigan, who spent time at the BAP in the early 1960s and then went on to serve as associate director of the E. S. George Reserve, a 1300-acre site near Ann Arbor, Michigan.⁷² The E. S. George Reserve reflects many of the same survey methods as Wytham, has attracted some women ecologists and also has enlisted the help of citizen scientists, and particularly University of Michigan students who volunteered time to conduct annual deer counts in the reserve.⁷³ As this brief example demonstrates, as a scientific environment that attracted multiple generations of ecological researchers and educators from local and global institutions, the intellectual and methodological influence of Wytham Woods certainly extends further than the quaint District of Oxford in which it is rooted. Thus, Wytham Woods’ ability to capture the hearts and minds of the researchers who worked there played no small part in ensuring its development as a significant site in the history of ecology within the British Isles and beyond.

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⁷⁰ De Bont, *op cit.* (note 7), p. 206.

⁷¹ Susan Jones, ‘Population cycles, disease and networks of ecological knowledge’, *J. Hist. Biol.* **50**, 357–391 (2017), at p. 360.

⁷² Letters to Francis Evans while he was at the BAP can be found in: Administrative Correspondence, Evans, Francis C., 1960–1972, in the Edwin S. George Reserve Collections, Bentley Historical Libraries, University of Michigan.

⁷³ For more on the history of the Edwin S. George Reserve, see the Edwin S. George Reserve Collections, Bentley Historical Libraries, University of Michigan.

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