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Image above: Traction cow and freemartin at Lauresham. See bage z

Silent Spring After sixty years

by Paul Warde



Rachel Carson

'There once was a town in the heart of America...' were the opening words of Silent Spring, and its iconic introduction, 'A Fable for Tomorrow'. It described an all-American idyll gradually rendered strange and frightening by the elimination of its wildlife and contamination of its people. This was not the result of some attack or perfidy: 'The people had done it to themselves.'

Published on 27 September 1962, Rachel Carson's book is firmly established as the most important text in the environmentalist canon, and one of the great works of the twentieth century. Silent Spring was a call to arms over pesticides and their effect on wildlife and human health. Most of the book was in fact devoted to scientific explanation and numerous cases of poisoning, carefully crafted for the lay reader and supported by references. Carson's more fundamental aim, however, was to raise the alarm over how new introductions to the environment could trigger unforeseen impacts in

the ecosystem and human body, having effects that far outstripped the capacity for adaptation. It was in this sense of evolutionary time being out of kilter with the rapid development of unregulated technology that Carson spoke of pesticides upsetting the 'balance of nature', an argument largely misunderstood or deliberately ignored by her critics.

Silent Spring was first serialised in The New Yorker in June 1962. It prompted a special documentary on pesticides watched by 10-15 million people, in which it became clear - precisely as Carson argued - that the long-term impact of pesticides was largely unknown and unresearched. The Kennedy Whitehouse, where insiders had been well-briefed and supplied with early copies by Carson's allies, set up a taskforce on pesticides in July. Her broad arguments would be vindicated by the President's Science Advisory Committee's report of May 1963.

Chemical companies threatened legal action even before publication. Industry and academic reviews lambasted her interpretation of the evidence, associating the work with 'food faddists and health quacks'. Carson's scientific credentials were repeatedly questioned.

William I. Darby, biochemist at Vanderbilt University, claimed Carson's argument, 'means the end of all human progress... disease, epidemics, starvation, misery, and suffering incomparable and intolerable to modern man'.

Pesticides

Remarkably, the pesticides in question were all less than 20 years old, but already treated as an irreplaceable orthodoxy. Before World War Two, pesticides were (often dangerous) metal compounds or salt. New alternatives, especially organochlorines, appeared



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Sprayed weeds

during the war, and by 1944 DDT was ubiquitous as a universal insecticide. By the early 1960s, chemical seed coating was widespread. Fisons had a weekly summer slot on ITV advising farmers when to spray. Sprayed herbicides and insecticides really took off in Britain around 1960, the former being hugely labour-saving and also increasing yield by lessening the disturbance of the soil typical of traditional weeding.

Almost immediately ecologists raised questions about the impact on ecosystems, also catching the attention of Rachel Carson who wondered in a letter in 1945 whether DDT could 'upset the whole delicate balance of nature if unwisely used'. From the mid-1950s, pesticides had been the subject of official investigations in Britain, leading to an Advisory Group that issued recommendations on use, adhered to by companies on a voluntary basis. Yet there was at that time virtually no knowledge of how chemicals might *persist* and spread through ecosystems.

In contrast, US official bodies were permitted to spray private properties without consent, and such generalised use of pesticides against hazards such as fire ants, mosquitos and the spread of Dutch elm disease were widespread. As well as killing wildlife, pets and causing contamination, it raised a fundamental issue of consent, becoming the subject of court action and complaint from 1957.

British reactions

In May 1970, entomologist Kenneth Mellanby, Director of the Monks Wood Research Station (who used to impress students by consuming a pinch of DDT to demonstrate its safety during lectures), wrote in *The Times* that while *Silent Spring* was 'one of the most important ecological phenomena of its time', its effect had not been nearly as pronounced in Britain as in the United States. Local scientists generally endorsed its fundings, and industry had been critical rather than condemnatory. Mellanby

saw this as a result of the fact that there was already ongoing work on pesticide safety. Yet Silent Spring, whose academic credentials were indeed defended by scientists within the Nature Conservancy, served a more important purpose than Mellanby let on: it allowed the Conservancy to present itself as a dispassionate observer, adopting an arbitrating position within the newly invigorated public debate.

The initial response to *Silent Spring* in the farming press was muted. The first direct reference came only in June 1963, prompted by an event at the Royal Show where chemical manufacturers, the Ministry of Agriculture and some conservationists collaborated to encourage good practice among farmers (with the view that following the label meant the product was safe). Nevertheless, the author of this article could not avoid labelling Carson as 'well-paid', and as giving license to 'hysterical and ill-informed' critics, going on to note that if natural insecticides existed in plants, what was wrong with artificial ones?

Nevertheless, *Farmers Weekly* regularly reported actions by the Ministry of Agriculture and associated bodies restricting pesticide use; it seems that the reaction to a message very much depended on the messenger. Indeed, what unnerved ministers about *Silent Spring* was that it made the issue of pesticides one of wider public debate, which they thought drew illegitimate voices into the discussion.

It was only in March 1964 that the editor of *Farmers Weekly* produced a more negative reaction, lumping together *Silent Spring* and attacks on factory farming as an assault on modernity – thus reflecting the fear that moral distaste could affect the bottom line of livestock farmers. One NFU rep was also happy to combine these narratives, arguing that banning dieldrin in sheep-drip would be cruel, as they 'might be "eaten alive" by maggots'. But precisely because of the increased backing of scientific authority, the leader writer was much more

ready to concede the validity of criticisms of pesticides. By May 1964, he noted 'On this subject no-one is sure and in such a situation the best bet is to play safe.'

Over time, research confirmed many of the warnings Carson made, which were themselves based on earlier research. British policy focused on voluntary restrictions, notification, and labelling; the more adversarial culture of America led to outright bans on certain insecticides. Carson played a leading role in popularising understanding of ecology. But perhaps the larger legacy was that her precise writing and mastery of the technical literature gave her the authority to argue that pesticides were not simply a technical problem, but one, along with environmentalism more generally, that warranted a new form of politics where the public should engage with scientific debates.

Rachel Carson

Rachel Carson was born in an industrial suburb of Pittsburgh in 1907, in a house still surrounded by wooded hills and pastures. She was not poor by the standards of the time, but further education was beyond her family's resources. With the support of teacher Mary Scott Skinker, who wrote crucial references, she won funding at Johns Hopkins University (JHU) in Baltimore, and a summer placement at the Woods Hole Oceanographic Laboratory.

Carson graduated in 1932, but soon ran out of funds to continue doctoral study. Yet she used Skinker's recommendation, and the references of leading JHU scientists with whom she had worked, to land a job at the US Fish and Wildlife Service (FWS). Her career was shaped by a combination of talents as a scientific researcher and communicator, being first employed as a writer, but soon appointed as an aquatic biologist. It was through 15 years' work at the heart of the FWS's information network that Carson created a vast range of contacts; there was hardly a leading conservationist in America she did not personally know.

Although her first book made little impact her second, *The Sea Around Us*, became a bestseller and made her the pre-eminent science writer in America. By early 1958, she was launched on what would become *Silent Spring*. Carson was determined to get the science right and proceeded slowly, always seeking expert review. At the same time her own health deteriorated and in 1960 she received radiotherapy for cancer; it claimed her life less than two years after *Silent Spring*'s publication.

Mark McKerracher visits a reconstructed medieval manor in Germany

A short walk from Lorsch, a pretty little town to the south of Frankfurt-am-Main, is the Lauresham Laboratory for Experimental Archaeology. Lauresham is a scale model of an early medieval manor, complete with houses (of high and low status), storage structures, gardens, meadows, livestock, arable fields (including replica ridge-andfurrow) and reconstructed medieval ploughs pulled by cattle.

Under the energetic expert leadership of Claus Kropp, the site provides not only a vivid and evocative educational experience, but also an open-air laboratory for the scientific investigation of past craft and construction activities, and farming techniques providing, by means of experimental archaeology, the kinds of practical insights which early medievalists crave. Some



Reconstructed ploughs at Lauresham, used in ploughing experiments to till replica ridge-andfurrow fields.



Reconstructed early medieval manor buildings at Lauresham.

results are very surprising, to me at least: for instance, one year when the ground was dried too hard for ploughing, the Lauresham pigs proved effective at breaking up the soil tillage by snout. Other studies have provided unique botanical survey data of the ridgeand-furrow field tilled with a reconstructed medieval mouldboard plough, which can be compared with archaeobotanical weed seed data from excavated settlements, to explore when and where mouldboard ploughing came into use (Kropp 2022; Bogaard et al. 2022).

A year on the field

Articles presenting the results of Lauresham's experiments are published in the site's own journal, Laureshamensia. But the most extensive project run by Claus and the team reaches beyond Lorsch, and indeed beyond Germany. 'A Year on the Field' takes an international perspective on 2,000 years of farming, focusing specifically on wheat for its first year (2021-2022), and fostering knowledge-exchange between museums, living history farms, commercial farms (conventional or organic), scientists, historians and archaeologists. There are currently participants from Germany, France, the UK, Belgium, Austria, Switzerland, Canada, the USA, Colombia and India. Among these, the wheat growers

keep cultivation diaries, noting dates and details of farming activities - including the implements used, for instance - and keeping a photographic record of each step: the selection of seed corn; soil preparation; sowing; weeding; harvesting; and the processing of the grain.

While all the insights thus recorded will eventually be compiled in a project publication, observations along the way are being posted in a fascinating and varied blog, interspersed with scientific, historical and archaeological contributions which provide a broader context. The project is already bearing fruit, fostering international collaborative networks, and steadily building up a unique database of cultivation traditions, crop varieties, and traction methods. This database is important not only for its value to agricultural historians and 'living history' practitioners, and not only for its potential uses in public outreach and education, but also for its relevance to sustainable land-use in the present day.

Plans are already underway for a second 'Year on the Field', this time aimed at documenting a complete cycle of flax cultivation, from the sowing of seeds (which the project can dispatch to interested parties) to the harvesting and processing of seeds and fibres. Four key research questions are being addressed:

- How is flax grown in different parts of the world?
- How have flax cultivation methods changed over time?
- What flax varieties have been cultivated in the past and present?
- What flax products are made from the seeds and fibres?

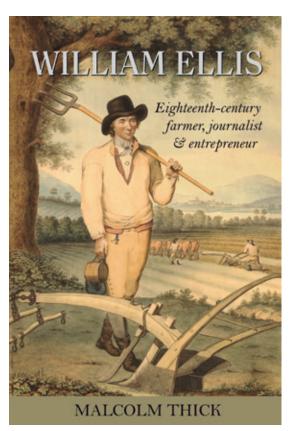
It is an exciting project and well worth following.

► The project is actively seeking participants for the flax year. Those who are interested can sign up on the project website, which is also home to the colourfully illustrated, multidisciplinary blog: www.yearonthefield.net



Ridge-and-furrow field under cultivation at Lauresham. All images in the article by the author.

William Ellis – Chronicler of country life



► Malcolm Thick's book, William Ellis: Eighteenth-century farmer, journalist and entrepreneur, has just been published by Hertfordshire Publications, £16.99.

www.herts.ac.uk/ uhpress

In 1984, writes Malcolm Thick, the authors of the Agrarian History of England and Wales, volume V. regarded the eighteenth-century writer William Ellis as a reliable reporter of Hertfordshire husbandry. Twelve years later, in Agricultural Revolution in England, Mark Overton highlighted contemporary criticism of Ellis; he was reported to have neglected his farm in favour of writing, and his books were full of incorrect material supplied by mischievous neighbours. Such swings of opinion have occurred more than once in the years after Ellis's death. We can say that he probably wrote too much (he claimed to have published nineteen books) however for a time he was the most prolific writer on agriculture and country living in England.

Ellis was not brought up as a farmer. Details of his early life are sketchy, but he was for some years a brewer in Westminster, running a brewery he inherited from an uncle. He later disposed of this and, aged between 28 – 38, rented and then purchased land in Little Gaddesden in Hertfordshire. He started farming about 1718, though he initially knew nothing about it and relied on his neighbours for guidance. He must have learned quickly, for in 1732 he published his first farming manual.

Research trips – and beer tasting

As well as books, Ellis produced periodicals, in monthly instalments, on the agricultural operations to be carried out in the various months of the year. These tracts also contained much information about his own farming activities, those of his neighbours, and those of farmers across southern England. In his work, one can see the growing influence of London on the Home Counties: Hertfordshire produced fresh eggs for London street-criers, calves for the London veal trade, house lambs for London tables and fresh butter for the Capital. Returning waggons brought a wide range of waste products to fertilize Hertfordshire soils (although Ellis thought folding¹ a better method of fertilization). On his frequent trips to London, Ellis observed the increasing intensity of agriculture as he approached the city. In Kensington and Chelsea, he found gardeners producing crops all year round with the help of copious quantities of dung.

Ellis gathered material for his books by talking to anyone he thought might have information to impart. His neighbours were an obvious source, but he also made many excursions into southern and central England to gain material – staying at many inns and sampling many beers. He also talked to commercial and household brewers, and this material was included in a book entitled, *The London and Country Brewer* which he hoped would improve the standard of beer in England: 'For when I travelled the Road in 1737, at several Towns I could have no other than foxed [tainted] Ales, and thick unwholesome stale beer.' First published in 1738, it was well-received and went through five editions.

Mail-order machines

Ellis's style, especially in his main periodical *The Modern Husbandman*, was discursive. This has exasperated later commentators. An attempt was made to 'clean up' his writings with the publication in 1772, a few years after his death, of a two-volume compendium, *Ellis's Husbandry Abridged and Methodized*, which excluded 'the very numerous passages either absurd, trivial, or tedious'. The anonymous editor acknowledged that Ellis's works 'were really original, and contained in numerous instances more genuine knowledge than far more shining performances'.

Ellis was keen on row-cultivation, especially using seed-drills, with horse-hoes to clean weeds between the rows. He invented a seed-drill which he exhibited to Pehr Kalm, a Swedish gentleman who was commissioned to visit England by a wealthy patron to observe Ellis's husbandry and see the machines he advertised in his books. The seed-drill demonstration was disastrous; the flow of seed and fertiliser was very uneven and scarcely any ground was covered. Moreover, Kalm did not see many of the machines Ellis promoted because they were made to order. Ellis also sold grass and grain seeds; fertilizers; birds such as fowls, bustards and pheasants; tree seeds and saplings, and hedging plants. He ran this business largely by mail order, inserting subtle advertisements for the goods in his various publications. It is difficult to assess how lucrative it was - if he sold one plough a month, he would have made the equivalent of £22,000 profit a year at today's prices. Add to this an unknown amount of income from his books and it is likely that these other activities subsidised his farming.

A country manual

In 1750 Ellis published a book on country living, a manual for the country housewife which is an important source for understanding the way ordinary farming families lived at this time.

Joan Thirsk commented that, for the food historian, Ellis was 'one of the most precious informants of his age, shedding much light on the cooking routines of working folk, including the families of farm labourers'.²

He spent many pages describing the types of bread baked by his neighbours and showed that bread-making reflected wealth and status – his poor neighbours ate barley bread, the better-off ate mixed barley and wheat loaves, whilst the rich consumed white bread from fine sifted flour. Ellis was impressed by the skill with which poor housewives made the best of the flour they bought.

He also discussed how to feed harvest workers, striking the balance between frugality and generosity. On a typical harvest day, the workers were given five meals, including a mid-morning and mid-afternoon snack in the fields. Dinner was also eaten in the fields and the men expected their food on time.

'At dinner time, which should be always at one o'clock, the victuals should be in the field; for it was the saying of a notable housewife, that as the men expected it at that hour, if it was not brought accordingly, they would lag in their work, and lose time in expecting it. Broad beans and bacon or pork one day, beef and carrots, or turnips, or cabbage, or cucumbers, or potatoes, another day, is, with plumb-pudding in wheat-harvest-time, and plain pudding in Lent harvest, good dinner victuals.'

This book also contained much information on country medicine. Medical historians have found a thriving tradition of 'domestic' medicine in Early Modern England. University-trained doctors were few in the eighteenth century, especially outside London, and they were expensive. Ellis gathered many recipes for medicines from neighbours and acquaintances for all manner of illnesses and, on occasion, he smugly points out that they were more effective than London doctors' prescriptions. Writing of jaundice, he observes 'My next neighbour the widow Howard, who lives on her landed estate, and has more experience in medicines than thousands of others, says old women cure this distemper better than doctors.' Ellis similarly records many homely cures for diseases of farm animals. Country housewives, who milked cows and tended farmyard animals, were deemed especially useful in the early diagnosis of animal diseases. They were traditionally responsible for raising veal-calves and young lambs for the market, but Ellis shows us that the London meat-market was inducing Hertfordshire farmers to take an interest in these sidelines and to make them an important part of their farming.

Like many agricultural writers (e.g. Tusser or Young), Ellis was not a particularly successful farmer. Kalm was disconcerted to find some of his fields under water or full of moss. The reason was, he just did not have the time or resources to farm properly. He was often away, visiting other farmers, and when he was there, he was occupied in writing as well as dealing with his mailorder business. His considerable output was not wasted; it has left us much evidence about farming life in mideighteenth-century England.

- I Placing hurdles round a small piece of cultivated land overnight and putting a flock of sheep in this enclosure so their dung fertilised the land.
- 2 Joan Thirsk, Food in Early Modern England (London, 2007), p. 167.



Cows still graze at an old shieling site on the Stoer Peat Road.

It was lucky I bumped into Angus Mackenzie that day, or I might never have been any the wiser. I told him I was away to see the old shielings shown on the 2007 OS Explorer map (no. 442) on the north side of Stoer Bay. Prior to crofting, transhumance was practiced across much of the Highlands. A shieling was a summer pasture-ground away from the home township, to which mostly women and children would have migrated in the summer months, sleeping and dairying in shieling huts or bothies.

'They're not shielings', he said. 'They're enclosures for growing cabbages.'

'How do you know that?', I asked.

'My grandfather told me. Anyway, why on earth would they put shielings there? They're right next to the village.'

This was a fair point, and not one I'd yet considered, having assumed the OS to be a reliable source. I have been studying Assynt for long enough now though, to know that if Angus Mackenzie's grandfather said it, then it was probably true.



Stone shieling remains at the side of Loch na Seilge, about a third of the way up Ben Stack in Eddrachillis, West Sutherland.

It was the end of June and had hardly rained for weeks; the bracken was already almost shoulder-high. Off-path moorland spots in the interior of Rubha Stoer that were usually impassibly boggy were now more easily accessible, but when I arrived at a shieling site, the patch of grass growing on soil enriched by generations of manuring was dry and yellow instead of verdantly green, and the fast-flowing burn which would have supplied the clean water source essential for dairying had faded to a trickle. The waterfall at Clashnessie (clais an easaidh, 'furrow of the cascade') had grass growing over it for months.

When I reached the site at Stoer Bay it was obvious that the structures referred to on the modern OS map could never have been shieling huts - considerably bigger than the remaining foundations of other such huts in the parish, they lacked the distinctive mound that accumulates from being rebuilt with turfs year-on-year. Their shallow footings gave them away as later structures, probably dating to sometime in the nineteenth century. Upon consulting John Home's survey map of 1774, these enclosures appear to have been constructed upon part of the infield of the pre-'improvement' baile or 'township' of Stoer. From the north the feannagan they are positioned on become visible - known by the pejorative 'lazy-beds' in English, these were built up with manure, seaware (seaweed used as manure) and other nutritious resources for growing crops prior to estate reorganisation.

In 1822, factor George Gunn attempted to divide the communally-worked farms of the Stoer peninsula into individual crofts, but due to the challenging topography and high population he found this task impossible in

several of the bailtean (plural of baile). The new arrangements were so impractical for this landscape that they were largely ignored by tenants anyway. The people had clearly re-used this fertile patch of land at Stoer Bay for growing cabbages, so scarce was arable land in the region.

John Home's survey maps

Taking advantage of the extended dry spell, I managed to visit every site depicted as a shieling on John Home's maps of the historic farms of Clachtoll and Stoer. Each coastal baile had a hinterland of shielings, lochs and hill ground stretching into the interior - an area now classed as 'wild land' by NatureScot (formerly Scottish Natural Heritage). Home's 1774 maps were part of a survey conducted for the Sutherland estate, and provide a detailed but flawed source of information about pre-improvement agriculture unparalelled in the wider West Sutherland region. Home assumed most portions of land detached from the baile were shielings, but other sources indicate some of these sites were permanently inhabited. The main baile could only support so many households, and microsettlements sprang up at a remove from the home farm wherever viable pockets of land allowed, some with remains indicative of land use going back centuries.

Abandoned settlements were also re-used as shielings, and latterly as more people were moved from the inland glens to Rubha Stoer, some shieling sites where the soils had been improved by generations of manuring were repurposed as year-round dwellings, or at least seasonally cultivated.

Stoer comes from the Old Norse *stauri*, meaning 'stake'. Referencing the sea stack now known as the Old Man further up the coast, this name is first evidenced in the *Orkneyinga Saga*.

This is reflected in the toponymic record, with the inclusion of shieling elements like *àirigh*, 'dairying place', or *ruigh*, 'shieling slope' indicating the original status of some settlements. More often than not though, the names of settlements and shieling sites were topographic, i.e. reflective of the surrounding landscape. Land use in Assynt was flexible and dynamic, with a capacity to respond to population pressures, contradicting lazy assumptions regarding 'inhospitable' landscapes.

Going over the land

Given the dearth of documentary sources, and the loss of a substantial proportion of the Gaelic place-names over time, any decent patch of grass near a strong burn here could well have been used as a shieling at some time. Each site I visited was unique, the remaining ruins showing how structures



Feannagan ('lazy-beds') and two oval-shaped structures at Stoer Bay.

were built from what came conveniently to hand; with green mounds indicating where huts had been made up of turfs, and scattered piles of rocks evidencing those constructed from stone. Often in the case of dry-stone bothies, a large rock was used as a foundation or wall against which to build the rest of the hut. Attempting a typology of Assynt shielings would be a futile endeavour, and the question of what exactly was a shieling may simply come down to how a particular place was used at any given time.

The unreliability and partiality of estate sources necessitate an interdisciplinary approach, and there is no substitute for simply going to see a place yourself. Transhumant practice was based on the people's knowledge of and attentiveness

towards their own unique eco-region, and the sophistication of their management of the land was lost on the Improvers. As the Reverend Mackay told the Government's Napier Commission hearing at Lochinver in 1883, where the crofters detailed their complaints, 'These gentlemen walked along the road and saw the land; they did not go over the land.' By going over the land again, by studying the region's Gaelic place-names, and by honouring the traditional ecological knowledge still held by community elders, we can reconnect with that attentiveness towards the non-human world. This is one area in which the study of the past can benefit Highland communities in an everchanging world.



A more typical shieling bothy footprint at Suileag, Assynt. All images in the article by the author.

Townships

Prior to the imposition of the crofting system on the Highlands, settlements were organised around a home baile or 'township' of a nucleated structure, where arable lands were held in common and worked in rotation in the best 'infield' land and animals grazed on the rougher 'outfield' land. In the summer, the herds would be removed completely to the shieling. Crofting was intended to encourage individualism and also to force people into such straightened circumstances as to neccessitate them taking on additional work for the landlord in industries such as fishing and kelping.

Mary Sutherland – feminist forester

In Rotorua's Redwood Forest, New Zealand, writes Vivien Edwards, there is a plaque to Mary Sutherland, a pioneering woman forester who left Britain and took up employment in the New Zealand State Forest Service in 1923.



Rotorua, New Zealand. Image: Daniel Hopper.

Mary, who was born in London in 1893, broke down barriers early on when she became the first woman in the UK to graduate in Forestry, gaining a BSc from the University College of North Wales (now Bangor University) in 1916. After graduating, she supervised the raising of forest tree seedlings for the Board of Agriculture, before joining the Women's Land Army in World War One, where she worked as part of the Women's Forestry Service. She later became forewoman forester for Sir John Stirling Maxwell on his Pollock and Corrour estates in Scotland, before gaining employment with the Forestry Commission. However, returning servicemen had priority for work and she later lost her job; unable to obtain a suitable forestry position, she sailed to New Zealand, where her sister was living. Letters of recommendation preceded her; one from John Sutherland, Assistant Commissioner for the Forestry Commission in Scotland, who wrote to New Zealand's Prime Minister, William Massey; the other from Harold Dale, Assistant Secretary of the then Ministry of Agriculture and Fisheries, to Frederic Pope, Assistant Director of New Zealand's Department of Agriculture.

New Zealand

Three months after her arrival, she was taken on by the country's new State Forest Service. Despite the challenges of being the only woman in what had been a male-only industry, Mary conducted and co-ordinated nursery/plantation forestry research around New Zealand. She wrote a forestry manual and co-ordinated the 'Forestry in Schools' programme, a joint venture between the State Forest Service and the Department of Agriculture, in which over 840 schools raised forest trees. Those years were not easy - there was, for instance, a reluctance to send her on fieldwork because it would have involved paying for

separate accommodation, as she couldn't share a tent with the men – but, being hard-working and passionate about trees, she eventually won respect. Mary was an inaugural member of the New Zealand Institute of Foresters, now the New Zealand Institute of Forestry (NZIF). She served on their Council from 1935-36 and was elected Vice-President in 1942. Part of her 1930s design for the official seal (a sprig of fruiting Rimu against a backdrop of mountains) became the NZIF logo.

She moved on to work at the Dominion Museum, eventually becoming their botanist. As well as looking after the Herbarium and corresponding with botanists worldwide, she collected specimens around the country, prepared exhibits, and organised native plant exhibitions.

After World War Two, she was appointed to the new position of Farm Forestry Officer for the Department of Agriculture. Annual reports and Mary's family letters reveal that she advised farmers and their wives on planting trees, surveyed plantations around the country, produced planting plans for the Department's experimental farms, and wrote articles for the *NZ Journal of Agriculture*. Her work was cut short when she became ill on a field trip in 1954 and she died the following year in Wellington. She was 61. Her contribution to forestry is celebrated in two eponymous awards: the Mary Sutherland Scholarship, in New Zealand, granted annually to a student studying forestry, and the Mary Sutherland Award given to the best female forestry graduate at Bangor University.



Vivien Edwards at the Mary Sutherland memorial – with retired forestry worker Chriss Taylor who organised the plaque.

▶ Vivien Edwards' book, *A Path Through the Trees: Mary Sutherland, Forester, Botanist and Women's Advocate*, is distributed in Britain by Summerfield Books, **www.summerfieldbooks.com**, £2ʒ). It won the 2021
ARANZ (Archives and Records Association of New
Zealand) lan Wards prize.

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