

# Moor House Memories

Social History of a National Nature Reserve



Compiled by John Adamson

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## Introduction

Moor House National Nature Reserve straddles the North Pennine ridge in Cumbria, between Appleby and Alston. While most of the reserve drains to the River Tees a small part drains to the Eden and it is all upland in character. As the following contributions indicate there has been, and still is, a strong emphasis on scientific research at the site. When the reserve was created in 1952 Moor House shooting lodge was converted to a residential research field station which was also home to the warden and his family until its closure in 1979. It is reputed that this was the highest permanently occupied building in England. Moor House reserve has now been combined with the neighbouring reserve in County Durham to form Moor House – Upper Teesdale National Nature Reserve.

In May 2003 English Nature (now part of Natural England which operates the reserve) generously hosted a dinner at the Tufton Arms in Appleby to celebrate the 50<sup>th</sup> Anniversary of Moor House NNR and this was attended by people involved with the reserve over the period. This document begins with the transcription of the speech given by Sir Martin Holdgate which summarizes developments and achievements over the fifty years. Other people invited provided written anecdotes and these form the majority of this document. These accounts are given added interest because of the remote upland nature of the reserve with its attendant extreme weather, and the diversity of people connected with it. The contribution by Linda Robinson was judged to be the most entertaining on the night and an appropriate prize was presented. Anecdotes have been arranged here in chronological order, as near as possible. The photographs are from the Moor House – Upper Teesdale Research Archive which is maintained by the Centre for Ecology and Hydrology in Lancaster, unless otherwise attributed.

While the research undertaken at Moor House has been recorded in scientific papers, theses and reports (see [www.ecn.ac.uk](http://www.ecn.ac.uk)) little has been recorded about the human or social history of the reserve. This document could be regarded as a first attempt to do this and I hope that it will cause others to record their memories and send them to me so that they can be added to a future version of this document.

Thank you to all who have contributed so far.

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## Half a Century of Moor House

Martin Holdgate

Some time around 1950, I remember 'Mr Appleby' – the late Alderman James Whitehead, several times Mayor of this town and enthusiast for everything connected with it – telling me that 'a group of Professors' had bought the old Appleby Castle shooting lodge at Moor House.



### 1 - Shooters at Moor House prior to the creation of the National Nature Reserve.

The Professors in question were William H Pearsall and Verona Conway, the former Chairman of the Nature Conservancy's Scientific Advisory Committee (and, incidentally, a Cumbrian by birth and upbringing) and the latter destined to become the first Director of Merlewood Research Station (see Footnote).

But why Moor House? Although in uppermost Teesdale, it was not the habitat for the most famous 'Teesdale rarities'. But Pearsall wasn't all that interested in rarities. His concern was with the wider aspects of mountain and moorland ecology: with understanding how the pattern of plant communities had evolved, as a consequence of thousands of years of interplay between climate, rocks, soil, drainage, and human use. As he put it in his splendid *New Naturalist*, *Mountains and Moorlands*:

To the biologist at least, highland Britain is of surpassing interest because in it there is shown the dependence of organisms upon environment on a large scale. It includes a whole range of habitats with restricted and often much specialised faunas and floras. At times these habitats approach the limits within which organic life is possible, and they are commonly so severe that man has avoided them. Thus we can not only study the factors affecting the distribution of plants and animals as a whole, but we can envisage something of the forces that have influenced human distribution. Moreover, in these marginal habitats we most often see man as a part of his biological system rather than as the lord of his surroundings.

Moor House, with the wide swathe of land from the upper basin of the Tees over the Pennine crest at Great and Little Dun Fells and down the western escarpment to the fell bottom above Knock and Milburn, was chosen as a representative example of mountain and moorland ecosystems, and as such was – as all of us here are proud to recall – one of our very first National Nature Reserves, declared in 1952. But Pearsall and Conway also saw it as an ideal outdoor laboratory at which ecological relationships could be explored, and the House itself – the highest inhabited house in England – seemed ideal as a field station linked to the Conservancy's northern research base at Merlewood. It was known from pioneer weather observations by Gordon Manley to have a pretty extreme climate – I believe including the longest continuous frost recorded in England. Many of us have personal anecdotes of that climate!

Moor House, of course, has a complicated human history, and is not the pristine wilderness it appears. Deforestation from Bronze Age times onwards was followed by a period as an early mediaeval hunting forest, by intensive sheep grazing later on, and by scarcely less intensive mining for lead and barytes through the nineteenth and much of the twentieth centuries. I well remember Lionel George, Jimmy Whitehead's son in law, telling me of how the men working at Silverband Mine used to ride in the buckets up the cableway from Knock — and suggesting that the refurbished mine complete with panoramic restaurant, at the end of a refurbished cableway, might become a great tourist attraction! And, of course, Moor House was once a good grouse moor. The ecological impacts of all these pressures raised their own questions for research, and it was no surprise that one of the first things the Nature Conservancy did was create exclosures to test how well woodland would grow, and how floral diversity would recover, in the absence of sheep grazing.

This evening is not an occasion for a scientific lecture. But I think we will all agree that Pearsall's judgement stands vindicated by all that happened in the years to follow. And the importance of the region is attested by its Grade I\* status in Derek Ratcliffe's monumental *Nature Conservation Review* which emphasises its value as a complex of montane heath, grasslands and mires over a wide range of rocks.

My own memories of Moor House begin with a view over it from the top of the Crossfell-Dunfell ridge in around 1948, as a seventeen-year-old schoolboy not yet embarked on an ecological career. But I do not remember going to the House until I joined the staff of the University of Durham — then the Durham Colleges



**2 - Moor House Shooting Lodge prior to its conversion to a Field Station.**

in the University of Durham — in 1957. I found there a Zoology Department that was engaged in making Pearsall's vision come true. Its architect was Professor Jim Cragg.

Bill Heal was one of Jim's Research Students, and there are several more scattered around the room. I am sure that they will share my affectionate remembrance of the man. Jim's great service to science came not through his own research — he published very little — but as a teacher and mentor. In particular, he had an unrivalled skill in choosing and inspiring students to do good field research in animal ecology. His judgement is attested by the number who have gone on to become professional animal ecologists. His idea at Moor House was, as it were, to take the ecosystem to pieces by studying the principal faunal components one by one. And he was a man for quantities: he wanted figures for biomass, production rates, and population fluctuations through the year. Energy flow was another keen interest. He was a pioneer in quantitative animal ecology.



Bill Heal and I have tried to remember who did what at Moor House. As we recall it, John Coulson started by studying tipulids — although I am sure he could not have kept his mind off the moorland birds. We think that Val Standen, John Peachey and perhaps also Jo Springett studied Enchytraeids, Bill Banage nematodes, Bill Block mites, Bill Hale microarthropods and especially collembola, Malcolm Cherrett spiders, and John Whittaker homoptera. Bill Heal, himself, of course studied protozoa. Trevor Crisp is remembered for his nutrient budget for the Rough Sike catchment. In his Presidential Address to the British Ecological Society, Jim Cragg provided an overview of how the various studies fitted together. In a letter to John Whittaker the father of Animal Ecology in Britain, Charles Elton, comments that "in Moor House you have probably the best description of any British ecosystem."



**3 - Betty assisting during the construction of the gauging station for the Rough Sike nutrient budget study, June 1963. Photo: Trevor Crisp.**

I don't want to give the impression that the Durham zoologists were the only people working at Moor House. Much botanical work was done from Merlewood, where Tony Gore was centrally involved. University botanists came, too — and I see that Dickie Clymo is here. It was, indeed, a splendid place to visit in the late 1950s and early 1960s. Tom Hodgeson, the resident Warden, and his wife were always welcoming. You could stay there, and although the facilities were on the simple side, the breakfasts (I think by Mrs Steele) were superb. Of course, before you could stay there, you had to get there, and the track did present, shall we say, challenges? Our departmental vehicles certainly bounced about, and I recall that on one occasion somebody broke some vital ventral organ or other and the passengers found themselves pouring oil into the works all the way back to Durham.

There was one anomaly about the work at Moor House. Although Pearsall and Conway had clearly seen it as a *research* site, and expected close links with Merlewood to which it was at first attached, in practice not much was done by the Conservancy's own research staff apart from Tony Gore. The central cohesion was provided by the local Officers-in-Charge, starting with Ken Park. It was he that set up the enclosure in Rough Sike and nurtured the arctic alpine plants there. It was he that died tragically in 1960 – his knapsack was found above High Force, and his body some miles downstream. Ken was succeeded by Mike Rawes, who was the Officer-in-Charge during most of the time I remember, and whom many of you will have known as an energetic field naturalist undertaking pioneer studies of the ecological impact of sheep grazing on the uplands – something right at the heart of William Pearsall's interests. Mike has been described to me as the unsung hero of Moor House, and we are glad to see Mrs Kathleen Rawes with us tonight.

The influence of Moor House has extended around the world. Partly this was achieved because those who started there as students ranged far and wide and moved to senior positions in many countries. I saw this at the Stockholm Conference of 1972 – the United Nations Conference on the Human Environment – when John Peachey and I, as members of the UK delegation, found Bill Banage leading the Uganda delegation in his capacity as Minister for Animal Resources. I had a liberal official hospitality budget, and what better way to use it on than entertaining the Distinguished Minister and Delegate of Uganda.

John, Bill and I enjoyed a delightful reunion lunch at which, I fear, we talked more about Moor House than about the agenda of the Conference.

As a more scientific example of Moor House's outreach, it also became the model for British biological research in Antarctica. The chain of events was a curious one. When Jim Cragg appointed me as one of his Lecturers in Zoology in 1957 he was having discussions with what was then the Falkland Islands Dependencies Survey about making Durham the home base for its biological research. He himself went south, I think in 1959 or early 1960, especially to examine a little island in the South Orkneys called Signy which was reported to have good range of habitats, and a lot of ice-free ground in summer.

I remember that there were boat races on the Wear at Durham. Some of us were by the river, and listening to the BBC. "The Antarctic Research Ship *Shackleton* is in trouble!" we heard suddenly. "She hit an iceberg at speed off the South Orkney Islands." "Prof!" we all said – for Professor Cragg was indeed aboard. Although the ship was saved it put paid to his Antarctic tour, though he had seen enough of Signy to believe that it would indeed be a good place for field research.



**4 - Moor House staff visited Merlewood Research Station to mark the departure of Professor Cragg to a post in Calgary, Canada in 1967. From the left standing Brian Springett, Jim Cragg, Michael Rawes, Tom Hodgeson, Mary Hodgeson. From the left kneeling Mike Nelson, David Welch.**

But the British Antarctic Survey Biological Unit never came to Durham, for a bizarre reason connected with Jim Cragg's academic past. Instead, it went to Queen Mary College London, and three years later I found myself directing it there under the general guidance of Professor Eric Smith. It followed my own five-month reconnaissance of Signy Island in the southern summer of 1961-62, with a Durham graduate, Peter Tilbrook, as one of our first two research students. The scientific plan we followed was pure Moor House. We took the Maritime Antarctic ecosystem to pieces, looking at the various components. Pete Tilbrook studied soil mites and collembolan. Barry Heywood looked at the freshwater ecosystems in the little lakes that are ice-free in summer although his winter sampling involved cutting through well over a metre of ice with a cold chisel. I did a vegetation survey, later extended by more expert bryologists, and collected soil samples that went back to Merlewood for chemical analysis. A Merlewood technician, Andy Bailey, went south to continue the soil microbiology. Later on, specialists examined nematodes and other organisms, while we expanded into the inshore marine environment and looked at nutrient flows between sea and land. Later on still, Bill Block kept the Moor House link going when he became a major participant in the BAS programme.

In a curious way, it was this 'Moor House, Antarctica' programme that brought me back to personal involvement with Moor House, Teesdale. Again, Jim Cragg was a catalyst. In September 1965 I was visiting him at Merlewood, where he had succeeded Verona Conway as Director. He told me of Barton Worthington's departure from the Nature Conservancy to become the Scientific Director of the International Biological Programme.

"They're looking for a new Deputy Director, Research, for the Conservancy" said Jim. "Why don't you apply?" "Why don't you?" I countered, for I thought he would be the obvious choice. In the end — and there is another very odd chapter of events behind what happened — I got the job. That meant that I had responsibility at Conservancy Headquarters for all our research throughout Great Britain, although the Research Station Directors — Jim Cragg at Merlewood, Kenneth Mellanby at Monks Wood, Mike Brian at Furzebrook, Elfyn Hughes at Bangor and David Jenkins in Scotland - directed the science on the ground. And that brought me back to Moor House, then of course run by Mike Rawes.

Moor House did not come under me, because by the time I joined it had become the responsibility of the Conservation Branch of the Conservancy, under Helga Frankland as Regional Officer and Bob Boote as my 'oppo' as Deputy Director, Conservation and Management. Both Bob and I worked, of course, to Max Nicholson as Director General, and then to Duncan Poore when he took over in 1966. Some of you will remember Max, who died a week ago today at the age of 98 and three quarters. I hope we all remember how much conservation in Britain owes him. It is no exaggeration to say that without his tireless energy, long vision, toughness and political skill, the Treasury might well have succeeded in strangling the Nature Conservancy in its infancy. Max built the Conservancy as a body with a unique blend of science, field conservation, and public education and information. He also built much else — he was a major influence on IUCN, a founder of WWF, and leader of the Conservation section of the International Biological Programme. I hope that somebody will write a Memoir of Max Nicholson. He deserves such a memorial.



**5 - During the 1950s extensive erosion existed at Moor House but by 2000 the floors of gullies, such as these on Burnt Hill, had re-vegetated.**

When I joined the Conservancy we were deeply involved in the International Biological Programme. This venture, which some say was spawned in envy of the International Geophysical Year of 1956-57, had as its central theme 'the biological basis of productivity and human welfare.' It had several sections, but the Nature Conservancy was especially involved in two: the PT section, on Terrestrial Productivity, which Jim Cragg was to lead once he had removed to Canada in 1967, and the Conservation of Terrestrial Communities, led by Max Nicholson.

The research at Moor House was one of the British contributions to PT. We built a special — and spacious - temporary laboratory for it. I recall an early meeting there at which Tony Gore, fresh from a year in the United



States, expounded how the new technique of Systems Analysis should help us model the moorland system. He was met with more than a touch of scepticism. Bill Heal tells me that we were sitting side by side and he whispered to me, as the exchanges got a bit furious "what are you going to do about this?" and I responded "let them argue!" Bill says that the whole thing was concluded by a magisterial remark from John Skellam, then our Chief Statistician, to the effect that "if you reject the ideas of modelling, you reject scientific method. Modelling frames a hypothesis, and you are entitled to be sceptical about it, but you must test it rather than ignore it."

I have read somewhere that one of our pioneer ecologists took a distinguished Swiss botanist on the road from Alston to Penrith, pausing at Hartside to look over the basin on the north of Crossfell. "But this is the tundra!" came the startled comment. "How can this be, at only 54 degrees north and the altitude of Berne?" Moor House was sufficiently tundra-like for the IBP results to be considered by the Tundra Biome Group of IBP, in which Bill Heal played a leading part, and this brought a series of leading Nordic scientists including Paavo Kallio and Eilif Dahl there.



**6 – A Ken Park snow scene. Moor House seen across Rough Sike.**

Moor House, of course, remained an important research site long after the end of the IBP in 1974. As John Sheail records in his *History of Nature Conservation in Britain*, together with Rhum it was one of our best-known and most used outdoor laboratories. It was the scene of important research on air pollution - sampling at Great Dun Fell was crucial to the establishment that acid nitrate as well as sulphate was an important ingredient of acid rain and that acid mist could have substantial ecological impact. It is good that even if the facilities at Moor House itself have been destroyed — something I myself deplore — the place remains an important part of the UK Environmental Change Network which is linked in turn to the new European Union SCANNET system.

I said that Professor Pearsall proposed Moor House as a place for research on what might be termed 'ordinary' moorland, because he was interested in the dynamic interplay of people and environment. He was not all that concerned with Teesdale rarities, recognising that detailed research on the ecology of sugar limestone wasn't likely to help you much in ensuring the sustainable use of the North Pennines as a whole. His attitude was indirectly responsible for one of my nastiest moments in my time with the Nature Conservancy. For when ICI demanded more water for Billingham, the Tees Valley and Cleveland Water Board (as it then was) looked to upper Teesdale as the site of a river regulating reservoir. They settled first on Dine Holm, not far above High Force and in the heart of rarity-land. There was outcry. The Board looked next at the flat, soggy valley above Cauldron Snout where the Weel — a sluggish reach of the Tees — ran below a small patch of limestone called Cow Green. The engineers came to see Max Nicholson. He consulted Pearsall as the Chairman of the Conservancy's Scientific Advisory Committee. Pearsall checked that



the proposed reservoir would not encroach significantly on Moor House and gave it the all-clear. Max told the engineers the Conservancy might even support it as a site, especially if it were developed for recreation and helped to 'draw pressure off more important parts of the Dale.'



**7 – Hay-time at Moor House in 1958. This is the same view as the previous photograph.**

Which was fine until the Committee for England got to hear of it, and realised that the reservoir would flood part of Widdybank Fell, with its outcrop of sugar limestone and associated rarities. There was an abrupt about-turn, and the Conservancy decided it must object. I found myself – as an extremely new member of staff with no experience whatever of that kind of thing – giving evidence to the Select Committees of both Houses of Parliament (Parliament came into it because Cow Green's building was authorised by a Private Act of Parliament rather than through the normal Planning Inquiry process).

Oh dear! In the Lords I found myself in a very hot seat, because I went beyond the rather staid Memorandum the Conservancy had put to our Minister, and began to explain the reasoning behind the objections. The Noble Lord Crook ticked me off properly for impropriety. It wouldn't happen now, when statutory agencies are expected to defend the cause for which they are established, but it was very uncomfortable at the time. We lost, of course, but there was an important spin-off. Duncan Poore, Bob Boote and I decided that we simply had to have a basic rationale that would define the importance of different sites for conservation in advance of proposed development. That was the genesis of the *Nature Conservation Review* we commissioned from Derek Ratcliffe in around 1968 – and eventually published in 1977.

Time marches, and I must conclude. What has been achieved at Moor House in the past fifty years, and what should happen now? Clearly, there is an impressive dossier of scientific publication to justify the investment of time and effort. It is still one of the best-studied ecosystems in the world. It has been the training ground for many outstanding ecologists. It is still part of an important environmental network.

BUT I doubt if the work is finished yet. As we become more and more concerned about the future of the uplands, and as farming on our hills comes under a whole host of pressures, surely we need the kind of ecological insight that William Pearsall was looking for, and which the research at Moor House can and should contribute. What should be the balance between sheep grazing, public recreation, and forestry? How can we halt the peat erosion so typical of the Pennines, and yet absent in some other regions of the world that are equally covered by blanket mire? What is the real cause of that erosion? How significant is acid rain as a factor influencing biological productivity? I was delighted

to learn, earlier this evening, that agreement has been reached with the commoners on grazing policy, and I hope that Moor House will become a demonstration area – a shop window- for sustainable upland management.

I have been speaking of 'Moor House' both as land and building, but to my sorrow the building I remember has gone. I was told that it had to be demolished because it was unsafe. I found that statement hard to believe. Stone-build Cumbrian farms and shooting lodges are solidly built. But Martyn Howat has explained that the deterioration followed — and was partly caused by — years of neglect and then an ill-judged attempt to 'mothball' the building. Clearly it got to the point where the fabric would cost more to restore than the scientific use made of it justified. If so, the implication is, however, that it is less valued as a place for research than it used to be. Yet the need for that research seems to me to be undiminished. Is one of the problems that with the split in the old Nature Conservancy, English Nature has no responsibility for fundamental ecological research, and NERC's Centre for Ecology and Hydrology is equally uninterested in maintaining research stations in out of the way places? If so, are the national interests being served? If not, what can we do about it?

I started with W H Pearsall, and will end with him. In his book *Mountains and Moorlands* he wrote:

A visitor to the British Isles usually disembarks in lowland England. He is charmed by its orderly arrangement and by its open landscapes, tamed and formed by man and mellowed by a thousand years of human history. There is another Britain, to many of us the better half, a land of mountains and moorlands and of sun and cloud... It is equal in area to lowland Britain, but its population is less than that of a single large town. It lies now, as always, beyond the margin of our industrial and urban civilizations, fading into the western mists and washed by northern seas, its needs forgotten and its potentialities almost unknown.

At Moor House, for fifty years, people have worked — often struggling against wind, rain and snow — to build the knowledge that will allow those needs and potentialities to be addressed. Many of us have gained a great deal from the experience. And not only in terms of scientific knowledge. For the high fells are also a place of beauty and delight, touching the artist and the poet as well as the scientist in us. Long may Moor House National Nature Reserve remain a wild and lovely place, a place where birds soar over the heaths and the grasslands, a place that inspires and delights those who go there.

Footnote: Dr Ken Morris, who had worked on the tsetse fly in Africa, briefly preceded Dr Conway as director of Merlewood. He left the post in December 1954.



**8 - Equipment monitoring atmospheric pollutants at Moor House in 1993. This was part of an international campaign organised by UMIST and the Institute of Terrestrial Ecology, Edinburgh.**



## Exterminate!

John Coulson

I spent two weeks at Moor House in June/July 1952 and then started my PhD study there in the following year, so I was in at the beginning. Vince Brown was the first PhD student there and we both remember the problems of living there without any vehicle based at the site and depending on visits by Verona Conway and others for food for the week. Neither milk nor bread stayed in a consumable condition for the week! Initially the place was alive with human fleas – the first species to be exterminated on the Reserve!



**9 - Equipment used in the 1950s to prepare the ground for the Bog End Forestry Experiment. Photo: Eric White.**

## Botanical Surveys

Derek Ratcliffe

In June 1952 Verona Conway (who with Pearsall was responsible for the purchase of the Reserve) convened a party of Nature Conservancy research students to make botanical surveys of the bog areas that were to be subjected to experimental treatments. I was one of them and others were Palmer Newbold, who became Professor of Botany at Coleraine, and Brian Hopkins. One of my recollections of that survey is of the Nature Conservancy's biometrician, John Skellam (who was a real townie) venturing onto the bogs in a town raincoat and Homburg hat to collect the data sheets and then retiring to the house to mull over the results in the warmth, while the rest of us soldiered on in the wind and rain.

Allan Eddy should be remembered for his vegetation survey of the entire Reserve and the discovery of *Alopecurus alpinus* on the Dun Fells. Also Ken Park, Officer in Charge who drowned in the Tees, found *Myosotis alpestris* on Great Dun Fell and took lots of excellent photographs. Last year Roderick Corner of Penrith found *Carex vaginata* on the reserve which is a new record for England.

## Monastic Fumes

Malcolm Cherrett

I started my PhD study on spiders in 1957 and my very first visit to Moor House coincided with Martin Holdgate's first visit, when we were both introduced to the Reserve by Professor Cragg. The zoological colleagues I worked with included Dick Reay working on Colleophora, John Peachey on enchytraeids, Bill Heal on protozoa, Bill Banage on nematodes, Bill Backley on peat respiration, and Bill Hale on collembola.

Andy Millar and Michael Rawes were on the full time research staff, Mrs Steel was the housekeeper, and Tom Hodgeson the estate manager. Ken Park was Officer-in-Charge, and Verona Conway at Merlewood was in overall command.

Unlike most of my colleagues who normally did daily samples, I stayed at the house for extended periods, getting there by train to Alston, staying there overnight, and getting to the house on the morning Land Rover. This was because I needed long runs of records of the daily web-spinning behaviour of some of the spiders I studied.

Life at Moor House at that time was somewhat monastic, with Ken Park retiring each evening to play Jazz records on a wind-up gramophone, and to develop the large glass plates of the close-up photographs of the vegetation in his permanent quadrats. He died tragically early, on fieldwork at High Force.

At that time, there was no telephone or electricity, all lighting being by paraffin pressure lamps. I recall that there were very strict instructions that at night, these were not to be turned off at the valve, but the pressure must be released by unscrewing the pump. This inevitably covered your hand with a fine aerosol of paraffin, and depending upon how cold a night it was, you had to decide either to hang your hand out of the bed to dry, or bring it into the warmth and suffer persistent paraffin fumes.

## A Mystery Solved

### Dicky Clymo

It was about 1961 on Burnt Hill that I was trying out the 'cranked wire' method of measuring the extension growth of *Sphagnum*. The idea is very simple: cut a 21-cm length of 24 SWG stainless steel wire, bend it at 90° 10 cm from one end, then back again at 11 cm. That produces a crank, like this:



Then stick one arm vertically into the *Sphagnum* carpet until the crank is level with the capitula, leaving the other arm projecting into the air. Come back in x months and measure how much of the projecting arm is still projecting. (A later modification uses a bottle brush to get a better grip on the *Sphagnum*.)

I needed hundreds of these wires and found that, even with detailed maps, they were often very difficult to re-find. So I stripped the coloured PVC insulation from thin electrical wire, cut it into 1-cm lengths, and slid a length on the top of the free arm of each cranked wire. Seven colours allowed coding too, so there was no doubt which wire one had found.

On the next visit an awful sight presented itself (as they say in France). Wires had been hauled out and thrown all over the place. These wires, plucked untimely from the yielding Earth, were weirdly bent, and some were even knotted. But the most extraordinary feature was that nearly all bore red tops: orange, yellow, green, blue, violet, and grey were still in place, but few of the red ones had survived. Was it *Calluna* lashing in the wind? Many of the wires were well away from rooted plants. Human vandalism? The thoroughness and selectivity of the work suggested not. Was it small rodents? Rare on blanket bog, and probably too small. Birds? Seemed unlikely. So I put in a fresh lot of wires with white plastic sleeves, and a few with red tops to see what would happen. The following fine morning as I approached the site there was movement among the wire forest. Hard at work diligently tweaking out the red tops were two grouse.

So *that* is why it is called the *red* grouse.

## The Hagg

### Anonymous

The proponents in this story (allegedly) have known each other for some fifty years and have always got along with each other quite well. It will therefore come as a surprise to all reading this that there has been the odd disagreement between them from time to time - for example I think one is still the only person to have taken (allegedly) the departmental Land Rover after the other had booked it. He well remembers the sight of his supervisor in the rear mirror as he drove away! However, this tale is not about that disagreement - surprisingly it is about another.



In 1962 several members of the Department of Zoology attended a conference at Oosterbeek, in the Netherlands and my informant contributed a paper. By this time his supervisor, Professor J B Cragg (with two 'g's) had left Durham for pastures new (Merlewood), and he became, for a short period, his supervisor's first research student. What he had done to deserve this, I don't know!

Now a feature of eroding blanket bog is the hagg lip (with two 'g's) a favourite retreat of *Tetracanthella wahlgreni*. The supervisor in this case wished to see the manuscript of the paper (not unreasonably!) and this was duly presented to him with the word hagg (and Cragg in the acknowledgements) both featuring two 'g's. It was returned to the research student with the second 'g' of hagg crossed out on all occasions, including the diagram which had to be redrawn because of the vigour with which the second 'g' had been erased. He protested that the word 'hagg' was derived from the Old Norwegian 'hogg' - a crack or ravine (his wife, who was then reading English (including Anglo-Saxon) at Liverpool at the time researched this!). His protests were to no avail. The argument, in the end, was (allegedly) along the lines "If you don't do as you are bloody-well told I'll bloody-well see that you don't get a PhD." In the face of such incontrovertible logic the research student could do little but alter the diagram and have the manuscript retyped without two 'g's in hagg.

This now gets a little bit like Gerrard Hofnung's diatribe about the bucket, at the Oxford Union! For ever most thorough, the supervisor (allegedly) checked not only the diagram but every occurrence of the word 'hagg' in the manuscript and returned it with his approval. The research student then made the mistake of posting the draft to Holland in the departmental post. It will come as no surprise to many that the manuscript was (allegedly) removed from the departmental post tray (for checking?) only for the supervisor to discover that subsequent to his approval of the document, someone had added a second 'g' (in the research student's handwriting!) to each and every 'hagg' in the paper. A modern day description of the reaction would (allegedly) include the adjective 'ballistic'. The PhD threatened to disappear over the horizon. Funnily enough, the manuscript was not returned to the student but submitted directly to the postal system with the second 'g' (allegedly) crossed out in red pen. You may wonder how he knew this!



**10 - A peat hag(g) at Moor House. Photo: John Adamson.**

It was in this colourful state that the research student found it when, in Oosterbeek, he asked the editor if he could make a minor alteration to the manuscript. The editor was readily co-operative, but the student was unable to add a stencilled 'g' to the diagram!

This is a full and true explanation (allegedly) of the inconsistency of the spelling of the word 'hagg' in this paper, which can be found in Doeksen, J. and van der Drift, J., 1963. Soil Organisms. It appeared with one 'g' the diagram, and two 'g's the text. It did not appear in print until after the candidate's viva in 1962 - fortunately!! Professor J.B.Cragg was sent a reprint with a covering note explaining why his surname on the envelope had been spelled with only one 'g'!

P. S. There are no prizes for guessing the identities of the persona of this (allegedly) true story.

## The 1962-3 Winter

Trevor Crisp

1. Moor House was inaccessible by road transport from late December 1962 to early/mid-March 1963.
2. Road access to Alston was possible, usually via Brampton, for some periods.
3. Gangs of unemployed men were drafted into the area from West Cumberland. During the week they dug to clear the road between Alston and Garrigill. They went home each weekend and the road often became blocked again in their absence.
4. Depth of snow drifts was impressive. A fingerboard at a road junction was buried almost to its top.



**11 – Snow and sunshine. Jim Cragg en route to Moor House in 1963. Photo: Trevor Crisp.**

5. Moor House had two Land Rovers and Merlewood another two. The Moor House vehicles were "lost" at an early stage - one snowed-in at Moor House and the other in a snow drift near Tynehead. One of the Merlewood Land Rovers was lost in a drift at Garrigill (see below).
6. The warden (Tom Hodgeson) and his family were in residence at Moor House throughout the winter.
7. Michael Rawes, David Welch, Michael Nelson and I took turns to go to Moor House to deliver some fresh provisions for the Hodgesons and to carry out other duties. My turn seemed to come round approximately once a fortnight. The weather alternated between bands of low pressure when it was cool and windy with snowfalls and bands of high pressure when the nights were very cold and the days were cold with blue skies and sunshine. The procedure was to pick a period of anticyclonic weather, under still conditions, and walk to Moor House from either Garrigill (7 miles) or Alston (11 miles) before the weather deteriorated. One would then stay at Moor House for 1-3 days and seek similar weather for the return journey. At some time during the winter (probably February) J B Cragg "the boss" decided he should come along to see exactly what "his lads" were having to contend with. This seemed commendable at the time but none of us knew that he had a serious heart condition! We got to Garrigill by Land Rover and set out for Moor House. He wore his brown Antarctic clothing and had cross-country skis. The latter were a handicap rather than a help! We set off in good conditions and I sought to set a good pace lest the weather should deteriorate. JBC caused some delays messing about with his skis and a wind arose and began to blow the snow. Nevertheless, we eventually reached Moor House and spent a day or two there. Sphagnum samples were taken at Bog End for Bill Heal. It is probably the only time that it was necessary to drive the peat borer through the frozen surface layers of the Sphagnum by means of a sledgehammer (an early example of high-tech. precision sampling). We returned to Garrigill to find our Land Rover buried in a large snowdrift and the road to Alston closed by snow. We walked to Alston and sought refuge in the tearoom on Front Street. We struggled to get in because it was occupied by an RAF Mountain Rescue team. They had come in by road and done various humanitarian deeds before being marooned in Alston because all the roads out were blocked. The railway line was, however, still open and we proceeded



to the station and caught the train from Alston. During the wait at Carlisle Station for a connection to Grange JBC said he understood the Carlisle refreshment room was a particularly good one that often served Angus steaks. We quickly verified this hypothesis!



**12 – Wind and snow, Jim Cragg en route to Moor House in 1963. Photo: Trevor Crisp.**

## In the Bog

Jean Corlett (formerly McCormack)

I have many memories of Moor House, some happier than others! One which remains in my mind was a beautiful sunny day, many years ago. We had been electrofishing with the early prototype of the rucksack machine which was very heavy and was divided into two rucksack loads. We had finished our work and were en route for Moor House. Harry Casey, who wasn't the slightest of men in those days, was marching along in front of me with the heavier rucksack at some speed when he sank! He went in over his knees – I think he had waders on or maybe thigh boots. We had to remove the fishing gear and all other material before we could begin to get him out! I can't recall who was present but I feel sure Trevor Crisp and Richard Mann were there. I remember we thought it very funny at the time – so did Harry, but I suppose it could have been serious if the bog had been deeper.

## A Farming View

Dorothy Ewin

In the early years of the Reserve, Derik used to regularly meet some of the Reserve Staff. (He remembers Michael Rawes and Brian Marsh by name). They used to come to Close House Farm to weigh some of the young Swaledale sheep, several times a year. He recalls that when the ewes and lambs were gathered from the Fell in September for weaning, collars with large individual numbers were placed around the necks of some of the female lambs (gimmers). Each lamb was put in pig crate scales and their weight was noted down with their number.

In April, before the lambs (now called hogs) went back on to the Fell, Reserve Staff again weighed them, and noted their weight gain. While on the Fell, Reserve Staff noted, sometimes with binoculars, where the hogs grazed, and sometimes took samples of their droppings. The sheep were again weighed when they came off the Fell in November. These observations were noted for quite a number of years, and we wonder if the results are still in the archives of the Reserve!

A few years after the Reserve Staff stopped weighing Close House sheep, we saw that sheep with harnesses around their rears - collecting their droppings - were grazing in an enclosure on the fell.



**13 – Sheep research in the 1960s.**



## The International Biological Programme

John Jeffers

I came relatively late to Moor House with my appointment as Director of the Merlewood Research Station in 1968. It soon became a major part of my concerns however because it was the site of one of Britain's contributions to the International Biological Programme (IBP). It may be hard now to realise the importance of the IBP in bringing ecologists together to work on problems of ecological productivity and ecosystem function both nationally and internationally. We know now that much of what we were attempting to do then was not possible with the resources we then had available, and especially in terms of the computing power available to ecologists. Nevertheless, the contacts that were made between individuals and organisations during the IBP were the beginning of more ambitious programmes of research that took place all over the world. For the first time we were daring to think seriously about ecosystem function and productivity and the importance of changes that were occurring through management, pollution and disturbance.

Having a protected reserve was essential for that research and confirmed the wisdom of the old Nature Conservancy in setting up its reserves and encouraging its scientists to monitor the changes occurring over the years in order to understand the resilience and stability of ecosystems. The split of the Nature Conservancy in 1973 initially reduced the level of research activity of the staff of the Merlewood Research Station at Moor House, but I am delighted that the Environmental Change Network programme is continuing to build on the baseline established by earlier research and data collection. A great many people have contributed to that baseline and the upkeep of the somewhat basic facilities that were provided at the Moor House site. This 50th Anniversary is an appropriate time to celebrate their dedication and foresight, and to confirm our determination to maintain this long-term programme of research.



14 – The IBP lab in 1967.



## The Dog That Would Not Let Go

Ian Hodkinson

Tom Hodgeson kept a fox terrier locked away in a chicken mesh cage round the back of the yard at Moor House. True to its calling it attacked anything that moved – without hesitation – and that was the reason for its incarceration. Pity the unsuspecting visitor who was unprepared. The dog was cunning and resourceful and usually escaped when provoked by the sight of a potential innocent victim. This necessitated always carrying a large and heavy stick in case of impending attack and careful reconnaissance was required before opening any car door.

One bright spring day I was followed up the Moor House track by a delivery van. Pulling into the yard I stopped and carefully paused to survey the scene for imminent danger. Meanwhile the driver of the van, a large gentleman with an ill fitting T-shirt that failed to cover his expansive paunch, stepped out into the sunlight. A diminutive furry but heavily toothed head peered quietly round the corner of a building. A shouted warning was alas too late. With a trajectory like the killer rabbits from Monty Python the dog leapt, and with a triumphant snarl, clamped its jaws on the unfortunate man's lower protuberant stomach roll.

Terriers, as we all know, are bred not to let go. This one was no exception. It took what seemed like minutes for the wayward canine(s) to be prised free from, dare I say it, their prized objective. Several cups of Moor House sweet tea provided the necessary palliative but I still wonder if the teeth marks remain and whether the incident prompted a chastened unfortunate to divest himself of his vulnerable soft underbelly, so to speak.



## A Day in the Life of I(v)an Hodkinson(ovitch)

Ian Hodkinson

The year - 1968.

The place – Moor House, somewhere on Sike Hill.

The scene – the deepest depths of winter.

The temperature - minus 13 degrees (Celsius that is).

Picture some unfortunate, wasted human form trudging forlorn and silent through the deep snow, seeking respite from the biting winds that blow unchecked across the barren tundra (IBP ecosystem classification). Banished to remote exile, sent by his cruel master into these snowy wastes, our hero is destined to spend an eternity suffering that ultimate indignity and degradation – picking heather - (like oakum picking in the workhouse, only worse) – plucking the unyielding sprigs from their icy crust. Purpose - to provide a never-ending supply of jumping plant lice (Hemiptera: Psylloidea: Sternorrhyncha) to satisfy the demented cravings of his master. Picture the gloveless hands, white with frostbite, picture the sharp secateurs slicing unnoticed through the numbed finger tips, picture the plastic sample bag filling with his rapidly draining life-blood. Confused, dazed and hallucinating (about red vampire, grouse and cups of hot steaming tea) he staggers on. A hundred times ( $n=100$ ;  $P > \text{improbable}$ ) this scene is repeated until at last our hero is released from his torment, to shiver for a few short moments around the meagre fire at Moor House. Another weary day drags itself to a conclusion.

God, what some people had to go through to get a PhD in the good old days!



**15 – The Field Station in 1972 with, in the background from the left, Great Dun Fell, Little Dun Fell and Cross Fell.**

## (Fe)male Assistant

Linda Robinson (formerly Teasdale)

I started work at Moor House in 1967 straight from School. I applied for the post of a "Male" assistant advertised in the local paper only to be told it had already gone to a local farmer's daughter, Sheila Carrick. Three weeks later Michael Rawes rang and asked if I would like to go to Moor House for a day and have a look around. He then offered me a job as botanical assistant and if I could learn typing and shorthand I could do the office work too. I did a six weeks course then started work. It was now November and my mother thought I should wear a skirt because I was in an 'Office'. Being only 17 I turned up in a very fashionable purple mini-kilt. I was then given a pair of wellies and taken on a tour of the west side, to the top of Great

Dun Fell in the snow. The ice feathers on the masts were about a foot long and my legs were the same colour as my kilt. From that day on I lived in jeans.

The next year I was given the job of going round the Introduction Enclosures on Hard Hill, Knock Fell and Little Dun Fell. These were visited about three times each summer. Desperate to get a tan I donned a Bikini under my clothes, set off and when I was well out of sight of Moor House stripped off, walked around the sites passing what I thought was the unmanned Great Dun Fell Radio Station. When I arrived back at Moor House fully clothed Mike Rawes just happened to mention that the staff at the Radio Station thought the Bikini was fine but the wellies weren't very fetching. I was mortified!



**16 – 1970s fashion at Moor House. Linda (in jeans) returning from heather burning in 1973. Photo: Rob Williams.**

Around 1968/69 one of the International Biological Programme Meetings was held at Moor House. People from all round the world and all religions attended. They arrived on a Friday and were given an evening meal at Moor House and because of the numbers an outside caterer was hired. The Landlady at a local hostelry duly arrived with her entourage and the meal was served. She was quite upset when a good proportion of the meals were returned untouched. What had she served up — Pork Chops!!!

Each summer we employed students. One poor girl was doing some field work just above Trout Beck. Later in the day she arrived back visibly upset saying someone on the adjacent fell was shouting unrepeatable abuse at her. It transpired it was Tom Carrick, the farmer at Crossgill working his dogs and moving sheep.

The "Big Lab" built in the late 60's had one small laboratory which was rarely used. It became apparent during the warmer summer months that there was an enormous number of bluebottles in the room. On investigation it was discovered that a nameless member of staff had been washing some items of clothing and had left some to soak. They had been completely forgotten about until a bluebottle discovered the festering mess. It's amazing the number of bluebottles you get from a few pairs of underpants.

Because we had a still at Moor House we were visited regularly by the Customs and Excise people. Visitors to Moor House will have noticed that the water supply was stained with the peat. It was the source of great amusement to the staff to see these officials arrive and think they had caught us making illicit alcohol.

One summer we had a family, I think with a camper van, trying to set up camp at Nether Hearth. Mike Rawes who was not great in stature, went down to try and dissuade them but to no avail, "I even stood on a mole hill to make myself look taller" he said when he came back to the house. He then sent Tom Hodgeson the Warden down to deal with them. Tom who was built like the proverbial 'brick outhouse' only got halfway down the track when they decided to depart.

The most memorable sight I can remember was the day when some of Great Dun Fell's radio masts were blown down by extremely high winds, I think in excess of 90 mph, maybe more. I can vividly remember Brian Marsh (who was no lightweight) crawling on all fours up to the Wind Tower desperately clawing at the vegetation to stop himself being blown away. The same day we saw a good length of cast iron guttering lifted from the roof of Moor House taken high into the air and deposited in the far corner of the meadow. When David Bellamy first started making documentaries for BBC North, he arrived at Moor House with the film crew in torrential rain to try and film moor burning. When it became obvious the weather was not going to improve they thought they would improvise with heating charcoal till it was glowing then throwing it into a patch of blanket bog at Nether Hearth. Staff, film crew and anyone else around were then employed running up and down to the house and back with glowing charcoal to simulate moor burning. Needless to say the shots never appeared in any of the programmes.

## A Snowy First Visit

Rob Marrs

As a callow youth working at Monks Wood I was "got at" by Bill Heal to come and "give a bit of a hand" keeping the monitoring going after Mike Rawes retired. He invited me up for a chat at Merlewood and subsequent day visit to Moor House to meet Mike Rawes and Judith Scott. The visit was planned for early December 1981. I duly set off on a wintry Thursday morning north-west for Merlewood driving an Institute of Terrestrial Ecology (ITE) car having done the decent thing and booked into the Greyrigge Hotel. Remember in those days ITE cars were usually dilapidated and mine was no exception.



**17 – Yellow Marsh Saxifrage (*Saxifraga hirculus*) is an arctic / subarctic species that flourished at Moor House when grazing pressure was reduced in 2001. Photo: John Adamson.**

I arrived at Merlewood in snow and could not get the car up the drive so backed it into a sort of path half way up the hill. I chatted to Bill and his chums in Merlewood, where he insisted I come to the Merlewood Christmas bash, a dinner dance to be held that night in the Netherwood Hotel. I accepted and paid for a ticket and agreed to meet Bill next morning in Garrigill.

Thereupon I returned to my car, started engine up and drove out on to the Merlewood drive, the engine promptly stalled, but the car continued on a downward course, totally powerless but with absolutely zero grip on the icy road. I was heading for a tree but kept turning the steering wheel and managed (god knows how) to pull back across the road and found I was heading for a staff member car that had (a) been abandoned and (b) had spun across the road. Again more or less totally out of control, I kept turning the steering wheel a bit and eventually squeezed passed it. My sleigh ride stopped when I shot out the bottom of the Merlewood drive, luckily there was nothing coming. There, I managed to start the car and drive to the Greyrigge, where I was placed in the Annexe next door.

The dinner dance was superb, indeed many beverages were consumed but I managed to get myself back to the Greyrigge. I know this because I spent one of the most uncomfortable nights ever, I found out later I was the only guest and they forgot to put the central heating on – it was freezing. Nevertheless, I managed an early start and apart from stopping at Penrith to buy some paracetamol as a result of a headache – actually it was like steam hammers knocking six bells out of my skull – as a direct result I suppose of the low temperatures, and met up with Bill as planned.

I parked my car at Garrigill and Bill drove me up in a Land Rover, commenting – "Oh this is the Snead- we never used to be able to see the road when we took a Land Rover over it – but they knocked the top off so



now it's not so bad". The improvement wasn't discernable to my untutored eye. The day was superb, meeting the Moor House staff and walking up to the Hard Hill burning plots across the snow, lungs burning with the searing cold and sun shining. It was superb and I agreed to take over the monitoring.



**18 – Many of the experimental plots established at Moor House in the early years of the reserve continue to be maintained. Above, Silverband exclosure in 2001, Right, Hard Hill Burning Experiment in 2007. The Burning Experiment is now used for studies of the impact of moorland management on the carbon cycle. Photos: John Adamson.**



I was deposited at my car around 4.30 pm and once I got the car going I set off to drive back to my home between Peterborough and Cambridge. The roads were awful, hard packed snow over most of the route; I went down Teesdale and then to the A1. Even that was fairly grim with snow and ice all the way to my turn off south of Peterborough. The roads then were really treacherous, relatively deep snow and I skidded my way home arriving well after 11.00 pm.

Naturally enough I expected a warm reception from my wife. "What the hell have you been doing driving home in conditions like this", was her opening gambit. "Don't you listen to the radio or watch any television when you are away?" The police had advised motorists not to drive because of the appalling weather conditions; indeed after their advice my wife had not gone to work that morning in Peterborough. I did think the traffic was a bit on the low side!

## Unsafe Building, and People!

Paul Glading

Simon Elliot and I took Bruce Keith to visit Moor House, to discuss what should be done with the derelict Field Station. The house was by that time boarded up to prevent people getting in and injuring themselves. Terry Wells let us in to have a look around and as we explored the downstairs Bruce managed to fall through the floor. Fortunately, he wasn't hurt - but it might have been awkward for us if he had - no risk assessment, no hard hats etc.



**19 – The Field Station before and after demolition in 1999. Much of the internal structure had rotted. The rubble was crushed and used to repair the track. The white Portakabin style Field Lab can be seen and this has now been superseded following the conversion of the old generator building into a Field Lab.**



## Transport Problems

### Terry Wells

In 1993, when the Environmental Change Network was starting up and the house was derelict, English Nature provided a large steel Portakabin style Field Laboratory that was located where the Moor House fuel tanks had once stood. The delivery of the lab proved something of an epic for the lorry driver. We met him in Garrigill in the late morning and proceeded very slowly up the road and track towards Moor House. The first problem we encountered was on the southern slope of the Dipper Bridge as at the time there were some very sharp pointed rocks on the left hand side of this track. The lorry driver could not get past them without damaging the tyres, so the first job was to knock off all of these rocks before we could proceed. We arrived at Moor House without any further major problems and eventually unloaded the lab and set it up. We set off back down the track but at the Trout Beck another problem occurred because the driver could not get the empty lorry around the bend onto the bridge, despite having passed there earlier when travelling in the opposite direction. The driver dare not scratch the paint work of the lorry as he had been threatened with the sack if he did. By now we had been on this job for over five hours and the driver thought he was only going to be a couple of hours! The problem at the bridge was the angle of turn and the hand rail so I suggested that we take off the offending rail. Unfortunately the bolts were so rusted that we could not move them with a spanner and the only way would be to burn or cut them off. I offered to go down to Garrigill and see if I could get Allan Green at the garage to come up and do the job for us. The driver asked how long would that take and I replied at least an hour, if he is in. With the vision of being stuck up there indefinitely an expression of panic came to his face. He eventually managed, with much shuffling, to get the lorry onto the bridge without a scratch. The lab had only been in situ for around a month when someone came up to Moor House one night, crawled under the building and cut a hole in the floor to gain entry. I don't recall anything being taken, however there was a portable generator inside but fortunately the hole was not large enough for this to pass through.

Transport problems were not confined to the Garrigill track. One winter day close to my retirement in 1999 Chris McCarty, Frank Mawby and I drove up the Great Dun Fell road to collect some fencing posts from the

little brick hut near the Silver Band Mine track junction. When we set off the road was clear but at the higher elevation, by the time we had loaded all the posts into the trailer, the road was becoming very icy. We set off down and the Land Rover was behaving rather strangely as it wasn't holding in low ratio. Frank and I couldn't understand what was happening then we suddenly realised what it was - the brakes on the trailer were locking and pushing the Land Rover forward on the ice. However we realised too late and the trailer came slewing round, slammed into one of the snow poles then pulled the Land Rover around. We came to rest at right angles to the road but fortunately not over the precipitous edge. At that moment I thought what the heck am I doing here with only a fortnight to go. Because of the posts we were unable to unhitch the trailer but the lads from the radar station appeared and gave a hand and we carried on down the road without any further problems. Legend has it that Frank went home and changed his underpants.



**20 – The Trout Beck Gauging Station. This was established in the 1960s but recording ceased in 1979. It was reinstated by the Environmental Change Network in 1991 and since then the Environment Agency have undertaken a major reconstruction. Discharge data are vital for understanding the chemical and biological data gathered from the Trout Beck by ECN. Photo: John Adamson.**

## Travel to Moor House in the First ECN Decade

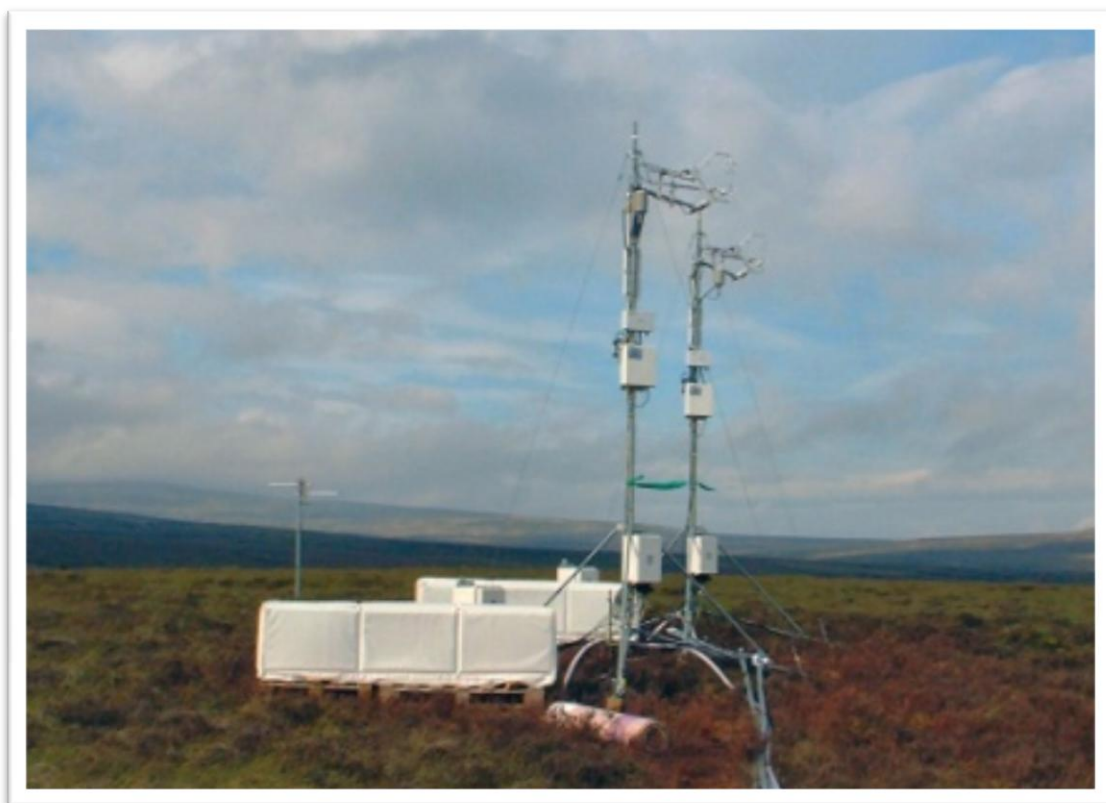
John Adamson

The fiftieth anniversary of the reserve approximately coincides with the tenth anniversary of Environmental Change Network monitoring on the site. Over the decade the site has been visited almost every week by people travelling from Merlewood Research Station at Grange over Sands.

Today, given good weather, the journey is fairly painless in a four wheel drive that cruises effortlessly up the M6 at 70 MPH. This is in contrast with reports from earlier decades of long tailbacks on the A6 over Shap in a utilitarian Land Rover following belching wagons in first gear. Equally today stopping for morning coffee en route and having a leisurely lunch in the warmth of the House before starting work are not options. Indeed these days we have a few hours of work completed before a brief halt for lunch time sandwiches, normally.



"Normally" however may not apply in the winter, when we are talking about weekly field work at 550 m altitude on the eastern side of the Moor House reserve. Certainly in the early years of the decade we could be sure of having to walk into the site because of the track being blocked by snow several times each winter. We soon found that as long as we could drive as far as the Greens' farm at Hill House we could walk in to our sampling site, do our work and walk out again before dark. This made for a 14 km (9 miles) day plus the distance we walked between our different sampling points. Usually there would be at least one week per winter when the road to Hill House had not been ploughed out so the weekly site visit was not possible. The worst winter for us was 1995/6 when walking in from some point on the track was necessary every week from mid January to mid March, frequently through deep soft snow. By contrast in the winter of 2002/3 snow only prevented vehicle access once when walking was necessary only from the Dipper Bridge, which is another indication of recent milder winters.



**21 – Equipment belonging to Durham University (in 2005) being used to monitor greenhouse gases released from the peat at Moor House. The reserve is still used intensively for research by universities and the Centre for Ecology and Hydrology, encouraged by Natural England. Photo: Bev Dodd.**

"Normally" certainly did not apply through most of 2001, the year of Foot and Mouth Disease. Throughout March and April no access to Moor House was possible. However by May the farms around Knock had been culled and with no prospect of there being any sheep to put on the reserve, access was allowed but for one vehicle per week via the Radar Road. With various researchers from universities and institutes as well as ourselves desperate to get on site to download loggers and collect samples we could have made a small fortune auctioning tickets for seats in our pickup. We often had seven people crammed in with frequent stops for disinfecting along the way. Once on site people radiated out to their working locations to meet together at the mine shop near the Trout Beck Bridge for the long walk up the hill at the end of the day. A feeling of camaraderie developed as big loads were shared to even up the weight in rucksacks. There was a brief respite from the walk when vehicle access was allowed from the Garrigill side but after three weeks a new outbreak of the disease in Allendale had us walking down from the Radar Road again, which continued until late October.

"Normally" did not apply either after a thunderstorm put down 48.8 mm (1.9 inches) of rain in an hour on 30 July 2002, according to instruments in the Moor House Met Area. Damage to the track at various points above the Dipper Bridge prevented vehicle access for six weeks although this time bicycles proved the best solution. Cycling back down in the dark after bat monitoring proved to be exciting!

For many people the difficulty reaching Moor House reserve contributes to the special character of the place. In 1936 Gordon Manley wrote "Of the higher and wetter western moors south of Crossfell it may be said that nowadays they probably constitute the wildest and least visited tract in England." This remains true today.



**22 - Walking in to Moor House reserve in 2002. Photo: John Adamson.**