

Analysis of the failure of voluntary measures to halt peat use in UK horticulture between 1990 and 2020

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February 2022



PEAT EXTRACTION CONTINUES © LANCASHIRE WILDLIFE TRUST

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In March 1990, ten environmental charities¹ established the Peatland Consortium and launched the Peatland Campaign, in response to a growing recognition of the catastrophic, but avoidable, destruction of the UK's lowland raised bogs. In the first three years of the Campaign, the Consortium documented many aspects of the value, importance, damage, destruction and decline of peatlands in the UK – particularly lowland raised bogs which were typically threatened by horticultural peat extraction². A key part of the Campaign was to discourage the use of horticultural peat and to encourage the development, sale and use of sustainable, peat-free, alternatives. As contributions to this, Friends of the Earth produced and maintained the Peat Alternatives Manual³ and WWF funded The Wildlife Trusts to document and promote case studies of successful use of peat-free products⁴. Numerous scientific trials and practical experience, by ADAS, Scottish Agricultural College, the Consumers Association and many gardeners and growers showed that as early as 1992 peat-free alternatives could perform as well as peat-based products, if used in the right way.

In 1993, available industry data on peat usage and peat-free usage was not as precise as it has become subsequently, but such data as was available suggested that a total of between 2.5 and 3 million cubic metres of peat were used for horticulture in the UK each year – mostly (61%) by the professional growing and landscaping sector⁵. On this basis, in 1993, a credible estimate of annual amateur peat usage in the UK put the figure at **between 975,000 and 1.17 million cubic metres** (i.e. 39% of the total).

The following chart appeared in a paper published in 1997 (after seven years of campaigning by the Peatland Consortium)⁶. Based on Department of the Environment figures for 1995, it indicated that amateur gardeners used 1.5 million cubic metres of peat and 0.3 million cubic metres of peat-free media each year at that time.

1 British Association of Nature Conservationists; British Dragonfly Society; Friends of the Earth; Greenland White-Fronted Goose Study Group; Irish Peatland Conservation Council; Plantlife; The Wildlife Trusts; RSPB; Wildfowl & Wetlands Trust; WWF.

2 Peatlands Campaign Consortium (1990): The Peat Report. RSNC, Lincoln.

Plantlife (1992): Commission of Inquiry into Peat and Peatlands; Commission Report. Plantlife, London.

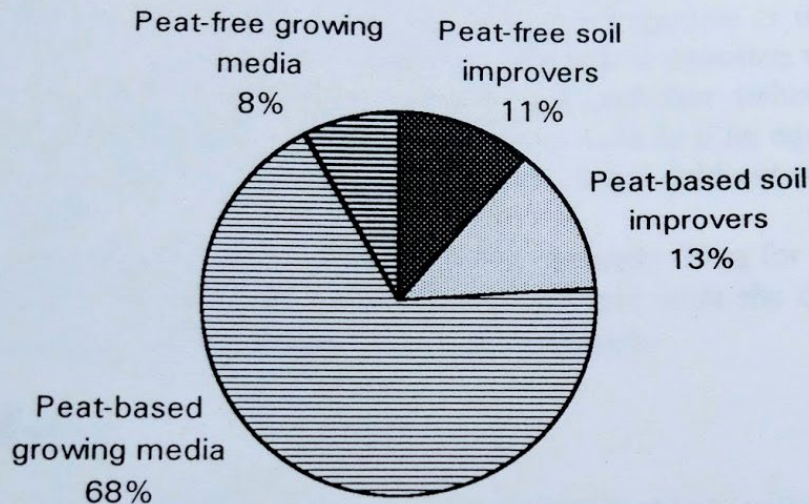
RSPB & Plantlife (1993): Out of the Mire; a Future for lowland Peat Bogs. RSPB, Sandy.

3 Pryce, S (1991): The Peat Alternatives Manual; a Guide for the Professional Horticulturist & Landscaper. Friends of the Earth, London.

4 Bennington, R & Steel, C (1994): Growing Wiser; Case Studies on the Successful Use of Peat-Free Products.

5 RSPB & Plantlife (1993): Out of the Mire; a Future for lowland Peat Bogs. RSPB, Sandy.

6 Nigel R Doar (1997): Gardening Without Peat. In: Conserving Peatlands, Parkyn, L, Stoneman, RE & Ingram, HAP (eds). Chapter 27; pages 255-261. CAB International, Wallingford. ISBN 0 85198 998 5.



Total amateur substrate use	1.8 million m³	100%
Amateur peat use	1.5 million m ³	81%
Amateur peat-free use	0.3 million m ³	19%
Amateur growing media use	1.4 million m ³	76%
Amateur soil improver use	0.4 million m ³	24%

Fig. 27.2. The use of peat-free and peat-based growing media and soil improvers by amateur gardeners in the early 1990s. Data source: DoE (1995d).

In 1999, the UK Biodiversity Action Plan for raised bog set a target for the UK horticulture industry to be 90% peat-free by 2010. This target was missed by a huge margin. A study commissioned by Defra in 2005 indicated that between 1999 and 2005, annual peat use in retail products bought by amateur gardeners had risen to more than 2.1 million cubic metres⁷. Even though peat alternative use had risen to account for 47% of the total market in 2005 (which exceeded the interim BAP target for that year), any beneficial impact was negated by the increasing size of the market as a whole.

By 2011, even on a market share basis, peat-free products had fallen back to only 32% of the market (against the BAP target of 90%). According to official government/industry figures, by 2011, amateur gardeners were still buying 1.83 million cubic metres of peat each year, and the professional sector was using a further 930,000 cubic metres (ie: a total of 2.76 million cubic metres)⁸. Essentially, the professional growing and landscaping sector had reduced peat-use considerably over the 20 years since the start of the Peat Campaign, but this had been entirely off-set by increasing retail sales for amateur use, keeping total annual peat use in horticulture pretty much the same as it was in the early 1990s.

It is likely that much of the reduction in professional use during this period was the result of stopping the use of peat-based “open ground” uses, such as for mulching, soil improvement and tree-planting – largely because there was considerable emerging but very strong scientific evidence that all these uses to which peat had been put up until then were entirely ineffective and a waste of money (as well as peat).

⁷ ADAS UK & Enviro Consulting (2006): Monitoring of Peat and Alternative Products for growing media and soil improvers in the UK 2005. First Biennial Report for DEFRA.

⁸ Horticultural Trades Association Growing Media Monitor, 2019.

In 2010, the Natural Environment Minister was Richard Benyon, who said at the time:

“The horticultural industry has made real progress in reducing peat use, but I want to see peat eliminated from the amateur gardener market by 2020. We need to go further if we are to protect our natural environment and reduce greenhouse gas emissions.”

[**The Natural Choice: securing the value of nature**](#) – the Natural Environment White Paper produced by the Conservative/Liberal Democrat UK Government in June 2011 – included the following (page 29):

“Protecting peat

In England, horticulture consumes 2.4 million cubic metres of peat each year. Formed over hundreds of thousands of years, peat is effectively a non-renewable resource. Making the transition to peat-free alternatives would put the industry on a sustainable footing, contributing to our goal of increasing food and other production sustainably and protecting our natural capital. The industry has made progress in reducing peat use in response to a previous voluntary reduction target, but the market is still only 57.5% peat-free. In order to support industry in making increased reductions, we are introducing a new voluntary partnership. The Government is working with industry to unblock barriers to change.

The long-term aim is for peat use to be reduced to zero. This will contribute to the protection of important lowland peat habitats (both here and overseas) and significant carbon stores, and will promote a shift towards the greater use of waste-derived and by-product materials. Ambitious targets are required to drive action and provide clarity about the long-term direction of policy.

We want to reduce peat use to zero by 2030, setting the following milestones:

- a progressive phase-out target of 2015 for government and the public sector on direct procurement of peat in new contracts for plants;
- a voluntary phase-out target of 2020 for amateur gardeners; and
- a final voluntary phase-out target of 2030 for professional growers of fruit, vegetables and plants;
- we will establish a Task Force bringing together representatives from across the supply chain with a clear remit to advise on how best to overcome the barriers to reducing peat use, exploring all the available measures to achieve this goal;
- building on the advice of the Task Force, we will review progress towards these targets before the end of 2015 and consider the potential for alternative policy measures if necessary.”

The Sustainable Growing Media Task Force promised in the White Paper was established in 2011, chaired by Dr Alan Knight OBE and reported to Defra in 2012. Its Report, [Towards Sustainable Growing Media](#), was completed in June 2012. This included the following (pages 21 & 22):

Retailers should work towards stocking only products that meet an agreed performance standard and responsible sourcing and manufacturing standard⁹, such that between 2018 and 2022 there would be:

- “Choice editing” by retailers **to ensure** that the **default** choice is growing products meeting the responsible sourcing and manufacturing standard; and
- “Choice editing” by retailers **to ensure** that the **default** choice (where feasible) is plants and food products which have been grown in sustainable growing media.

The report justified this approach by (amongst other things) this reasoning (on page 13):

“If, as the majority of Task Force members believe, consumers cannot be expected to drive change, then the role of retailers becomes crucial. They are the ones who decide which products are available to consumers and it is to them we must look to ‘choice edit’ away from peat and towards sustainable growing media that meets performance requirements”.

The [Government Response to the Sustainable Growing Media Task Force](#) was published in January 2013. It included the following:

- A commitment to support the development and launch of the proposed performance and responsible sourcing and manufacturing standards (page 17);
- An endorsement of the Task Force’s call for ‘a new level of collaboration between retailers taking the lead in setting the direction and pace of change in the market, with growing media producers and growers actively supporting that ambition through innovation and collaboration’ (page 6).

The [2020 Growing Media Monitor](#) – the official industry report on the types and quantities of growing media used in the UK professional and retail horticultural markets – reported the following UK usage of peat in 2019 (pages 6 to 9):

- 1.31 million cubic metres (41.5% of growing media by volume) sold for retail use;
- 0.76 million cubic metres (62.9% of growing media by volume) sold for professional use.
- This compares to the following figures reported for 2011:
- 1.83 million cubic metres (58.2% of growing media by volume) sold for retail use;
- 0.93 million cubic metres (72.0% of growing media by volume) sold for professional use.

⁹ That is they are fit for purpose and made from raw materials that are environmentally and socially responsibly sourced and manufactured.

The story that emerges from these facts and figures

Between 1990 and 2010:

As a result of considerable public campaigning, almost universal agreement that something must be done, a shift in the buying preferences of some amateur gardeners, and a government commitment in the UK Biodiversity Action Plan to go 90% peat-free by 2010, peat-free garden products became a significant part of the garden industry. **Peat-free production and sales went up from nearly nothing in 1990 to 1.33 million cubic metres in 2011** – more than 72% of it through retail sales to amateur gardeners¹⁰.

Professional growers and landscapers had stopped using peat for a large number of applications that it was demonstrably ill-suited to (such as mulching, soil improvement and tree-planting), and they had started to reduce peat-use in more demanding areas (such as plant propagation and container growing). So not only had the use of peat-free products grown considerably, **professional peat use approximately halved between 1993 and 2011**.

Unfortunately, over the same period, **the retail trade for peat-based products had nearly doubled** (from about 1 million cubic metres per year in the early 1990s to more than 1.8 million in 2011), with sales to amateur gardeners over 2.1 million cubic metres for most of the first decade of the 20th century. All the reductions achieved by the professional sector had been entirely negated by growing retail sales. In terms of percentage market share, the Biodiversity Action Plan target of 90% peat-free had been missed by a huge margin (**peat-free sales in 2011 only came to about 32% of the market**, despite year-on-year growth in sales). Worse still, **total peat-use remained persistently stable at around 2.75 million cubic metres per year**.

Between 2010 and 2020:

After 20 years of failure since 1990, the UK Government's 2011 Natural Environment White Paper set the scene for a much-needed re-boot. It again put forward another voluntary approach, intended to achieve a complete phase-out of retail peat sales by 2020 and a complete phase-out of peat in professional use by 2030. A Sustainable Growing Media Task Force was set up in 2012, bringing together representatives from the peat industry, growing media manufacturers and retailers, branches of government and the voluntary sector. It analysed the barriers and challenges around a move to peat-free and plotted out an agreed route to achieving it. The UK Government endorsed the approach proposed by the Task Force, in 2013.

10 Growing Media Monitor 2020

Since 2013, the use of peat-free products by both professionals and amateurs has flat-lined (at about 30% of all growing media used each year and a total volume of about 1 million cubic metres, with some relatively minor annual fluctuations and no discernible trend). In 2019, *total* peat-free use was about a third lower than it had been in 2011 (1.33 million cubic metres), driven mainly by a drastic reduction in *retail* sales over the period (from 964,000 cubic metres to 556,000 cubic metres).

Total growing media use across both amateurs and professionals has stayed stable at about 3 million cubic metres per year, with about two-thirds of this (between 1.8 and 2.1 million cubic metres) bought by amateur gardeners. So: overall, what has happened to horticultural peat use since the 2011 White Paper?

Since 2013, year-on-year (with some relatively minor annual fluctuations and no discernible trend), about 70% of all demand for growing media in the UK has still been fulfilled using peat-based products. **A total of a little more than 2 million cubic metres of peat has been used in UK horticulture each and every year since 2013.** Professionals have reduced usage a little (down 18% between 2011 and 2019). It's progress, but they have a long way to go to meet their target of being 100% peat-free by 2030.

The retail peat market has come down considerably from its peak in 2011. In 2012 (the year that the Sustainable Growing Media Task Force was deliberating, immediately after the White Paper), retail peat sales fell by 560,000 cubic metres and they have remained at more-or-less this new lower level ever since. **However, retailers continue to sell about 1.3 million cubic metres of peat products every year.** This may be 28% lower than in 2011 (which is good), but it is absolutely nothing like going totally peat-free (which was supposed to have happened by 2020) and **there has been absolutely no sign of any continuing downward trend since 2013.**

Arguably, this already glaring failure is even worse than it at first appears, because the 2011 baseline – against which reductions are being measured and reported – was at an all-time unacceptable high to start with. **Retail sales of peat in 2019 were at least 12% higher than they were at the start of the Peat Campaign in 1990** (when concern over the environmental impacts of peat-use was high enough to prompt an unprecedented public campaign). **Reductions in retail peat sales over the last decade have not even reversed the growth in sales that took place over the previous 20 years, never mind reducing sales to zero.**

This is pitifully poor progress, by anyone's standards.

Figure 1 shows the trends in peat use in both the professional and amateur sectors, set against the Westminster Government's policy goals since 2011.

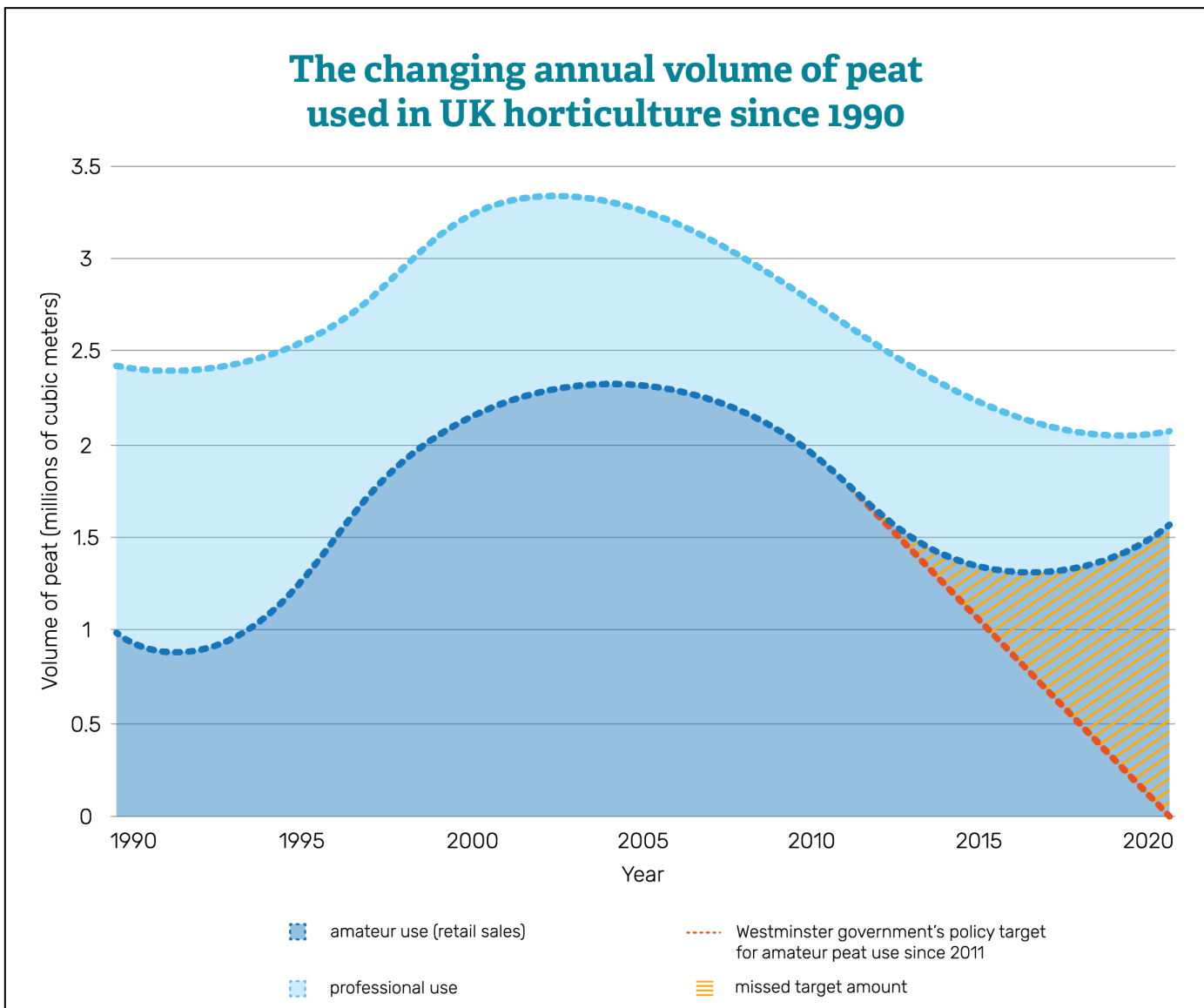


Figure 1 – peat use in UK professional and amateur horticulture from 1990 to 2020

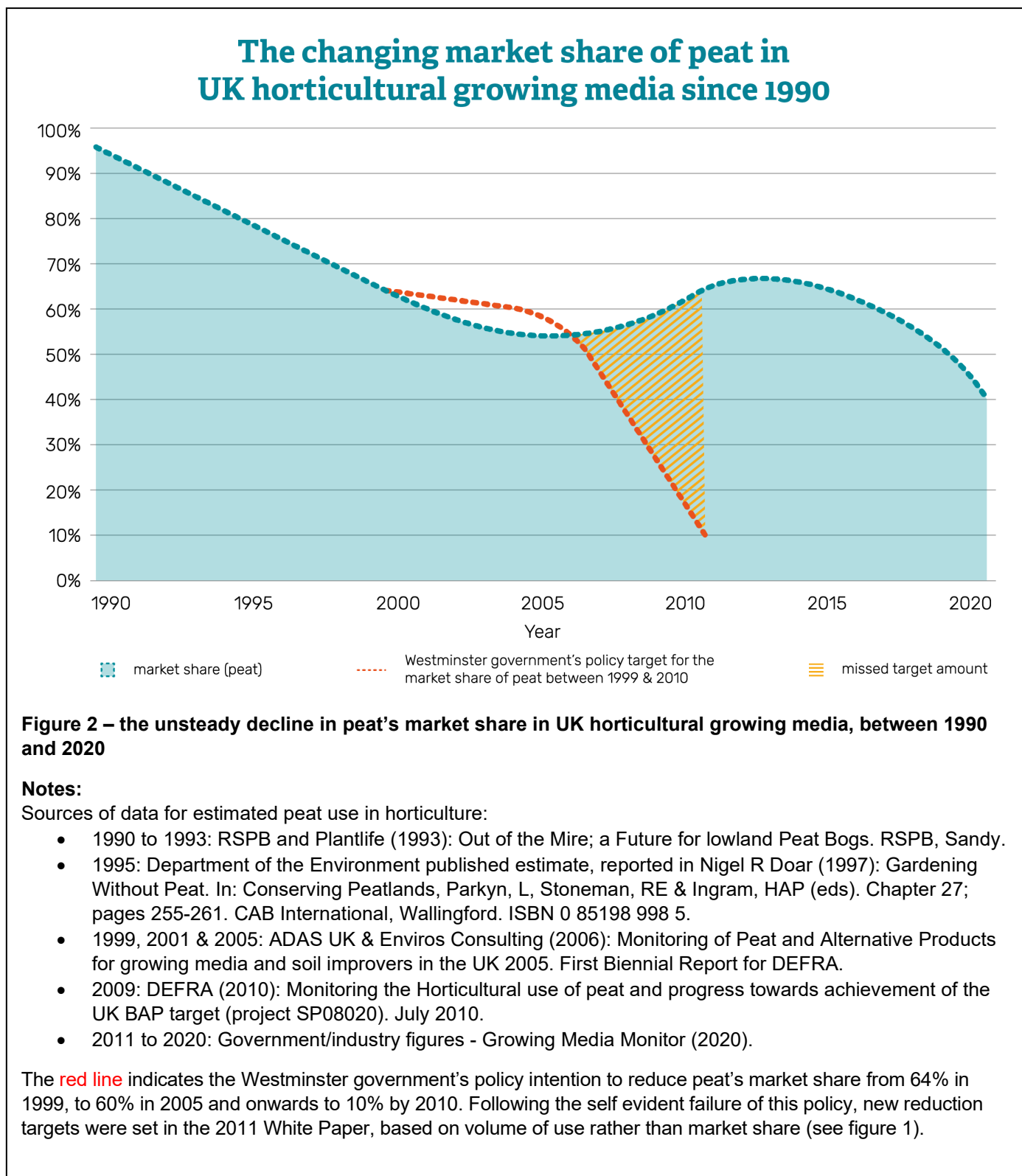
Notes:

Sources of data for estimated peat use in horticulture:

- 1990 to 1993: RSPB and Plantlife (1993): Out of the Mire; a Future for lowland Peat Bogs. RSPB, Sandy.
- 1995: Department of the Environment published estimate, reported in Nigel R Doar (1997): Gardening Without Peat. In: Conserving Peatlands, Parkyn, L, Stoneman, RE & Ingram, HAP (eds). Chapter 27; pages 255-261. CAB International, Wallingford. ISBN 0 85198 998 5.
- 1999, 2001 & 2005: ADAS UK & Enviros Consulting (2006): Monitoring of Peat and Alternative Products for growing media and soil improvers in the UK 2005. First Biennial Report for Defra.
- 2009: Defra (2010): Monitoring the Horticultural use of peat and progress towards achievement of the UK BAP target (project SP08020). July 2010.
- 2011 to 2020: Government/industry figures - Growing Media Monitor (2020).
- Other years estimated by the author as the lowest values indicated by independently verified figures for adjacent years (to ensure conservatism while being consistent with broad trends).

The red line indicates the Westminster government's policy intention for amateur peat use levels since 2011 (aiming for zero amateur peat use by 2020. The equivalent target for the professional sector (not illustrated) is zero peat use by 2030.

Figure 2 shows the changing market share of peat in horticultural products since 1990



No-one in the last 25 years has seriously or convincingly argued that peatlands are not valuable or that they don't need protecting. The evidence of their value and importance has grown considerably, if anything. Public support for the use of peat-free products and against the use of peat has been strong and vocal. Successive governments have said they were in favour of addressing the problem and have adopted policies intended to achieve significant impact. But still after 30 years, action to prevent the horticultural industry damaging and destroying peatlands and adding to climate change has been entirely ineffective.

This is too urgent for us to contemplate any further delay. We need to move to a statutory ban, immediately. The horticultural retail trade has no business incentive to sell peat-free products rather than peat-based ones (they will make profit from selling whatever customers will buy). It can be difficult for amateur gardeners to know what is in a bag of compost - sometimes bags are poorly labelled or described. Even when they aren't, market research has shown repeatedly that price and claimed performance play the greatest part in product choice. So: the retail market is essentially split into two parts – one for peat-free (selling to aware and concerned customers) and one for peat-based (selling to everyone else). And retailers are happy to sell products to both markets at the same time and have good business reasons to continue doing so.

Given the urgent need to tackle climate change and the significant role that peatlands play in capturing and storing atmospheric carbon dioxide, it is even more important that we act decisively now. The drainage and removal of vegetation from bogs where peat is extracted leads to greenhouse gas emissions from those sites, which makes a significant contribution to global warming and climate change. Over and above that, the peat extracted for horticultural use in the UK will itself also be adding to climate change, as once it has been extracted and put to horticultural use, it will decompose and release its embedded carbon.

Since 1990 (the baseline year against which atmospheric greenhouse gas emissions are measured for the purposes of the UN Paris Climate Change Agreement and the UK's Climate change Act), a reasonable estimate of the amount of peat used in the UK horticulture industry is as follows¹¹:

Amateur (retail):	50 million cubic metres
Professional:	31 million cubic metres
Total:	81 million cubic metres

¹¹ Annual estimates of amateur and professional peat usage in UK horticulture between 1990 and 2020 are given in Figure 1, with an indication of their original sources. The figures here are the cumulative total of those annual estimates.

The amount of carbon contained in a typical cubic metre of peat will depend on several factors, including the mass of dry matter it contains (its bulk density), the proportion of that dry mass that is 'organic' (made up of carbon compounds), and the proportion of those carbon compounds that is carbon¹². A 'standard cubic metre' of peat may contain between 47 and 104kg of carbon, depending on the type of peat and its position in the bog¹³. If oxidised completely, 1kg of carbon would produce 3.7kg of carbon dioxide. Therefore, each cubic metre of peat has the potential to release 385kg of CO₂.

So: a conservative estimate would suggest that even overlooking the impact of peat extraction on greenhouse gas emissions from degraded peatlands themselves, the 81 million cubic metres of peat used in UK horticulture since 1990 will be in the process of adding between 14 and 31 million tonnes of CO₂ to the atmosphere as it decomposes (over its lifetime as a growing medium).

Not all of this carbon will be emitted immediately. Some of the peat lost from a growing medium while it is in use might be converted into the living matter of decomposers (primarily bacteria and fungi, secondarily springtails, mites) living within the medium (though not much, as one of peat's selling points is that it is generally quite sterile). After use, peat-based growing media are often disposed of through application to flower beds or dug into other open ground, where the remaining carbon might be incorporated into the soil (either as soil organic matter or as living tissue of worms and such) rather than being released as CO₂.

However, peat-based growing media do reduce in mass and shrink in volume considerably over the course of a year (and more-so over two or three years). The whole decomposition food-chain (either within the growing media or in the soils that they end up being 'disposed of' into), will, in time, likely result in most of the carbon-based molecules in the peat being released as either CO₂ or CH₄, depending on specific circumstances. It is therefore highly likely that the majority of carbon stored in peat will all have turned to CO₂, one way or another over the course of a few decades, or at most, centuries. **All of this carbon would have remained locked up as peat if it hadn't been extracted in the first place and if the peatlands had been allowed to remain in natural, healthy condition.**

12 Cannell, MGR, Dewar, RC & Pyatt, DG (1993): Conifer Plantations on Drained Peatlands in Britain: a Net Gain or Loss of carbon? *Forestry*, 66(4), 353-369.

13 Lindsay, R (2010): Peatbogs and carbon: a critical synthesis to inform policy development in oceanic peat bog conservation and restoration in the context of climate change. University of East London Environmental Research Group.

Conclusion

Securing a better future for the UK's peatlands will require a step-change in ambition from Governments. Introducing a legislative ban on the use of peat in horticulture is one clear step that UK Governments can take to put nature into recovery, while helping to transform our peatlands from net emitters of CO₂ to carbon sinks.

The Wildlife Trusts welcome the Defra consultation on *ending the retail sale of peat in horticulture in England and Wales*, recognising that this is an issue which has been contemplated by UK Governments for decades. However, it must go further and faster.

The Wildlife Trusts are calling on the English and Welsh Governments to:

- Implement an **immediate sales ban** on peat and peat containing products in both the retail and professional markets – alternative measures such as point of sale charges or mandatory reporting are simply not enough
- Bring about an **immediate end to the extraction** of peat from England's peatlands (this has already taken place in Wales)
- Bring about an **immediate end to the importation** of peat, putting an end to the 'offshoring' of emissions and damage to nature in other countries

The voluntary approach to the issue of peat in horticulture has been wholly ineffective and must be withdrawn in favour of a legislative ban on all uses of peat across the retail and professional sectors. Decisive action is long overdue.