



House of Commons
Environmental Audit
Committee

**National Pollinator
Strategy**

Second Report of Session 2014–15

*Report, together with formal minutes relating
to the report*

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Environmental Audit Committee

The Environmental Audit Committee is appointed by the House of Commons to consider to what extent the policies and programmes of government departments and non-departmental public bodies contribute to environmental protection and sustainable development; to audit their performance against such targets as may be set for them by Her Majesty's Ministers; and to report thereon to the House.

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Summary

Faced with a decline in pollinator numbers across the UK, Defra has conducted a consultation on a draft *National Pollinator Strategy* and will publish a final version later this autumn. The draft *Strategy* lists research plans aimed at producing a better understanding of the role and value of pollinators, as well as the effects of neonicotinoid pesticides on pollinators and the impact of the EU ban on three neonicotinoid pesticides on farmers' crop growing practices. We welcome Defra's commitment to use the data to establish a national pollinator monitoring framework. A clear and less disputed 'baseline' understanding of the plight of pollinators and what is putting pressure on their numbers is a necessary first step in identifying practical measures to support them.

Less welcome is Defra's reliance on industry to fund critically important research. It is symptomatic of Defra's loss of capacity to deliver its environmental protection obligations and might result in greater susceptibility to commercial, rather than scientific, research priorities. That becomes a particular weakness where the industry-funded research is intended to contribute to a review of the ban on neonicotinoids. It is important that the design of that research and how it is undertaken and reported is independent of its paymasters, and is transparent. We take assurance from the involvement of the Centre for Ecology and Hydrology in the work, but Defra must ensure that independent controls remain in place throughout and that the results of the studies are peer-reviewed and published in full and without delay.

The implementation of the *Pollinator Strategy* will involve action by farmers and the public alike. Schemes within the Common Agricultural Policy could be harnessed to support pollinators, but the way that Defra has structured the environmental aspects of the CAP risks it being a lost opportunity. The Government must review the CAP environmental programmes to ensure that pollinator protection is a priority driver rather than an optional rationale, and ensure that the European Commission's upcoming review of Ecological Focus Areas applies a similar test.

Defra should present in the finalised *National Pollinator Strategy* a clear view of what Integrated Pest Management involves, and ensure that its interpretation of IPM reflects best practice elsewhere and sets out the potential for IPM targets, including for reduced pesticide use.

We welcome the *Strategy's* emphasis on public engagement in protecting pollinators—tapping an invaluable and committed resource—and its advice on pollinator-friendly gardening and the need to consider alternative, non-pesticide, pest control methods.

In our previous report on *Pollinators and Pesticides* we concluded that the evidence on the role of neonicotinoid pesticides raised sufficient concerns for the health of pollinators to merit a ban on their use through the application of the precautionary principle. Such a ban was subsequently introduced by the European Commission, despite the resistance of the Government. The Government continues to interpret the precautionary principle as

encompassing economic as well as environmental considerations. We disagree. But even in following its own approach, the Government has not been able to demonstrate the significance of economic considerations that form the basis of its decision-making.

Defra should use the final Strategy to draw a line under the neonicotinoid ban by making it clear that the UK accepts the European risk assessments underpinning the ban, that it supports the ban and will neither seek to end it when a European review is conducted in 2015 nor otherwise circumvent it. The Government should make it clear that had it been obliged to rule on the application by Syngenta to use a banned neonicotinoid it would not have allowed it.

1 Introduction

1. The recent decline in pollinator numbers across the UK has caused widespread concern. Potential contributing factors include climate change, habitat loss, parasites and use of pesticides, particularly neonicotinoids—the focus of our April 2013 report on *Pollinators and Pesticides*.¹ In that report we noted that there was insufficient data to produce an accurate view of the extent of declining populations of particular pollinators, something which was not helped by a failure of pesticide manufacturers to publish data from field trials undertaken to secure regulatory approval. We recommended that, in accordance with the precautionary principle, the Government immediately ban the use of three neonicotinoid pesticides—clothianidin, imidacloprid and thiametoxam—which had been risk-assessed by the European Food Safety Authority. The Government rejected our recommendation, arguing that available studies did not produce “unequivocal evidence that ... serious implications for colonies are likely to arise from current uses of neonicotinoids”.² The European Food Safety Authority’s risk assessment of the three neonicotinoids resulted in the European Commission banning their use on crops attractive to bees. The ban came into effect in December 2013 and is due to be reviewed in 2015.

2. At the time of our earlier inquiry negotiations were underway within the European Commission on the ‘greening’ aspects of the CAP scheme for 2014-20. We looked to those negotiations to produce measures which “offer meaningful pollinator support within the [CAP] environmental schemes”.³

3. In their September 2013 response to our report, the Government announced that it would convene a group of experts to assess available evidence on pollinator declines. That review would

form the basis of a National Pollinator Strategy, which will bring together existing initiatives and to provide an umbrella for new action. It will provide every opportunity for those with an interest to contribute to the discussion and to commit to bringing their efforts and talents to the ongoing work.⁴

The draft *National Pollinator Strategy* was published for public consultation in March 2014.⁵ It sets out its broad aims:

... to safeguard pollinators and their essential pollination role, reflecting their importance and the many pressures they face. Our vision is to make sure that they thrive and continue their important role in food production and in our environment ... Through the proposed Strategy, the Government’s aim is to

1 Environmental Audit Committee, Seventh Report of Session 2012–13, [Pollinators and Pesticides](#), HC 668-I

2 [Ibid.](#), para 46

3 [Ibid.](#), para 91

4 Environmental Audit Committee, Second Special Report: of Session 2013–14, [Pollinators and Pesticides: Government response to the Committee’s Seventh Report of Session 2012–13](#), HC 631, paras 6-7

5 Department for Environment, Food and Rural Affairs, [A consultation on the National Pollinator Strategy: for bees and other pollinators in England](#) (March 2014), Executive Summary, paras 3-4

lead and set a new direction for pollinators, building on many current initiatives and drawing on the skills, experience and enthusiasm of all interested parties.

The *Strategy* identifies “a complex evidence picture” of the occurrence and distribution of pollinators, with limited data on long-term trends and “patchy [evidence] on the precise impacts of known pressures (e.g. intensive land use, use of pesticides and pest and disease risks) on pollinators and the way that they interact”.⁶ Accordingly, a key feature of the draft *Strategy* is a programme of research to address the “important gaps in our understanding”.⁷ The draft *Strategy* also sets out 18 proposed “priority policy actions” to support pollinators, to be pursued in tandem with the evidence-gathering.⁸

4. In June 2014 the Government has announced the types of schemes which will qualify for ‘greening’ CAP payments (paragraph 29) and further research on neonicotinoids has been undertaken (paragraph 6). The significance of pollinator declines has also been noted elsewhere. In June 2014, President Obama authorised the creation of a Pollinator Health Task Force to produce a National Pollinator Health Strategy for the United States, an initiative that has been widely praised for showing the strong inter-departmental approach that might be also be beneficial for the UK.⁹ The US Environmental Protection Agency is also reviewing all pesticide registrations—a process which will include new data requirements and amended risk assessment approaches—and has introduced a requirement for labels on pesticide packaging to contain the instruction “Do not apply this product while bees are foraging” to help reduce pollinators’ exposure to pesticides.¹⁰

Our inquiry

5. Pollinators play an essential role in both agriculture and the protection of our biodiversity.¹¹ The success of the *National Pollinator Strategy* is therefore vitally important. We undertook this inquiry to examine the draft *Strategy*, focusing on its two central themes: the research needed to be able to protect our pollinators effectively (Part 2) and the actions that should be pursued in the meantime to help safeguard pollinators (Part 3). Our aim is to feed into Defra’s finalisation of the document to be published in the autumn. We took evidence from Defra’s Chief Scientist Professor Ian Boyd, Professor Dave Goulson of the University of Sussex, Buglife, Bayer CropScience and the National Farmers’ Union, all of whom gave evidence in our 2013 inquiry, as well as from Friends of the Earth and the National Federation of the Women’s Institutes.

6 [A consultation on the National Pollinator Strategy: for bees and other pollinators in England](#), op cit, Executive Summary, para 7

7 [Ibid](#), para 9

8 [Ibid](#), para 10

9 [Presidential Memorandum—Creating a Federal Strategy to promote the Health of Honey Bees and Other Pollinators](#), White House press release, 20 June 2014

10 Environmental Protection Agency, ‘[EPA Actions to Protect Pollinators](#)’, accessed 02 July 2014

11 [Pollinators and Pesticides](#), op cit, paras 92-95

2 Collecting the evidence

6. In our *Pollinators and Pesticides* report we noted a range of views on the strength of the link between neonicotinoids and the viability of bee colonies.¹² Since then, new studies have added weight to those that indicated a harmful link between pesticide use and pollinator populations. An international review of existing peer-reviewed papers on neonicotinoid pesticides published over the last two decades concluded that prophylactic use of neonicotinoids and fipronil, a phenylpyrazole insecticide, was likely to have wide-ranging negative impacts on pollinators.¹³ The Soil Association highlighted US studies suggesting that pesticides multiply pollinators' susceptibility to disease, and Buglife cited recent studies indicating that exposure to neonicotinoids reduces the reproduction rates and foraging efficiency of bees.¹⁴ A 2013 study by Defra's Food and Environment Research Agency indicated that neonicotinoid pesticides persist in soil long after they are used, and in some cases chemical residues not used in the preceding three years were detected.¹⁵ Thus pollinators feeding on crops grown in previously treated fields remain vulnerable to them.

The precautionary principle

7. In our 2013 report we noted that other factors, including habitat loss and disease, could be contributing to pollinator declines, but concluded that the evidence on the role of neonicotinoid pesticides raised sufficient concern to merit a ban on their use through the application of the precautionary principle. In concluding that the need to address potentially significant environmental harm took precedence over economic calculations, we disagreed with Defra's interpretation of the precautionary principle.¹⁶ In its response to our report, the Government stated that economic considerations should be included in the application of the precautionary principle:

Economic issues are relevant when the precautionary principle is invoked. This is not to say that economic issues trump environmental concerns. On the contrary, serious environmental threats must be tackled, even if this carries costs. But economic factors are relevant because the precautionary principle requires that before a decision is taken, the available evidence is to be used to carry out the best possible assessment of the risks and the options for action. Extreme cases illustrate the point that action should be informed by consideration of the knock-on consequences. It would evidently be right to tackle even a remote risk of serious environmental damage if this action

12 [Pollinators and Pesticides](#), op cit, paras 2-3, 41-52

13 J. P. Van der Sluijs, D. Goulson et al, '[Conclusions of the Worldwide Integrated Assessment on the risks of neonicotinoids and fipronil to biodiversity and ecosystem functioning](#)', forthcoming in *Environmental Sciences and Pollution Research*, Vol 21 (Summer 2014)

14 Buglife ([NPS0020](#)), paras 2.1-2.3; Soil Association ([NPS0009](#)), para 14

15 Ainsley Jones, Paul Harrington and Gordon Turnbull, '[Neonicotinoid Concentrations in Arable Soils After Seed treatment Applications in Preceding Years](#)', forthcoming in *Pest Management Science*, Vol. 70 (2014)

16 [Pollinators and Pesticides](#), op cit, para 69

carried no cost. It would not be right to tackle the same remote risk if the action needed would cripple the economy.¹⁷

We do not think that the risk to pollinators is, as Defra put it, ‘remote’. Nevertheless, if despite our misgivings Defra is intent on applying the precautionary principle in a way that seeks to accommodate economic considerations alongside the environmental imperative, that approach should at least consistently assess such economic factors.

8. During our previous inquiry we were given a range of estimates of the value that pollinators bring to UK agriculture. Professor Simon Potts of Reading University calculated the value of direct pollinator services (including pollinators’ direct contribution to crop yields, but not the wider contribution they make to maintaining ecosystems) to be £603 million. Taking into account the cost of artificial pollination, which would be needed in the absence of natural pollinators, the benefit to the UK economy from natural pollinators was estimated to be £1.9 billion a year.¹⁸

9. In our previous inquiry, our agronomist witnesses told us that a ban on neonicotinoids would significantly diminish farmers’ incomes, particularly for those growing oilseed rape.¹⁹ Others, however, pointed to the example of Italy, which had banned certain seed dressings on maize crops without reducing profitability.²⁰ There is also some evidence from organic farmers suggesting that while the ban on neonicotinoid pesticides might raise costs for growing oilseed rape, it might reduce costs more significantly for other crops.²¹ A difficulty in getting immediate evidence of the effect of the ban on crop yields, however, is that the persistence of neonicotinoids in soils (paragraph 6) might prolong any effect on crops from previous application of the pesticides. This also potentially prolongs the harmful effect on pollinators (paragraph 16).

10. Professor Dave Goulson highlighted what he saw as a lack of evidence on the effectiveness of neonicotinoid and other pesticides:

I would love to see farming based on evidence. In medicine, practices have to be based on clear evidence that is available to the public to read. Farming practices, at present, seem to be based on marketing advice rather than demonstrated scientifically published experiments: evidence as to which products work best, which give you the best yield, which minimise damage to the environment and so on. I find it astonishing that no one can explain to me why we do what we currently do in farming; why we need as many pesticides as we currently use.²²

17 [Pollinators and Pesticides: Government response to the Committee's Seventh Report of Session 2012–13](#), op cit, para 47

18 [Pollinators and Pesticides](#), op cit, para 94

19 [Ibid](#), para 66

20 [Ibid](#), para 67

21 Peter Lundgren, [‘Is there a future without neonicotinoids?’](#) (January 2014)

22 Q12

Bayer CropScience, on the other hand, told us that a lack of peer-reviewed papers on the effect on crop yields of neonicotinoid seed treatments was because:

academic journals have no interest in publishing papers on such matters. ... It is not fundamentally 'new' science so is very unlikely to be sent to a peer reviewed publication. ...The primary focus of crop protection companies is on generating sufficient reliable data to justify the registration of a new product and then demonstrating the efficacy and cost effectiveness of the product to growers and advisers. When the regulatory demands are so high, writing academic papers on such matters is inevitably low down the list of priorities.²³

Farmers dealing with pest problems rarely turn to academic literature, Bayer told us, but learn from experience and the advice from agronomists. Given the cost of pesticides, farmers' readiness to invest in them was in itself proof of their effectiveness.²⁴

11. The 2013 decision to ban three neonicotinoid pesticides, introduced in Europe against the wishes of the Government, was the right approach given the requirements of the precautionary principle. The Government continues to interpret that principle as encompassing economic as well as environmental considerations. We do not agree. However, if the Government insists on doing so, it should follow its own argument by being able to clearly demonstrate not just the impact of neonicotinoids on pollinators, but also the benefits or otherwise of using them on crop yields and the possible cost of reduced pollination services.

Pollinator Strategy research

12. In our 2013 report, we recommended the establishment of a national monitoring programme for wild pollinators.²⁵ The *Status and Value of Pollinators and Pollination Services* report, published alongside the draft *National Pollinator Strategy*, states:

... a lack of regular and standardised monitoring of wild bees and hoverflies means that it is not possible to know whether their population sizes (abundance) are changing along with their diversity and occurrence.²⁶

The draft *National Pollinator Strategy* identifies three evidence-gathering actions aiming at achieving a better understanding of the role and value of pollinators:

- a feasibility study on conducting research on the relationship between pollinators and pollination services in the production of crops;

23 Bayer CropScience ([NPS0024](#)), paras 19-21

24 [Ibid](#), paras 22-23

25 [Pollinators and Pesticides](#), op cit, para 13

26 Adam J. Vanbergen et al for Department for Environment, Food and Rural Affairs, [Status and Value of Pollinators and Pollination Services](#) (March 2014), Executive Summary, p4

- a scoping study to consider the potential benefits of research into interactions between pollinators and wild plants; and
- research into developing a framework that would assess the direct and indirect value of pollinators.

That work would be supplemented by research on the effects of neonicotinoids on managed and wild pollinators in field conditions, and studies to assess the impact of the neonicotinoid ban on farmers' crop growing and pesticide practices.²⁷

13. Professor Ian Boyd, Defra's Chief Scientific Adviser, told us that a priority was:

... knowing what the baseline is, and the Strategy is very clear about that in that the first step, in terms of the research that we will be doing and sponsoring, is to come up with a national monitoring capability or programme... Because this is partly a stakeholder-led process, the delivery of that national monitoring programme is going to involve a lot of the stakeholders as well. There will be a lot of citizen science involved in it.²⁸

Marylyn Haines Evans of the Women's Institute emphasised the importance of obtaining comparable, high-quality data:

I welcome the inclusion of citizen science. It is great for engaging the public, but I would also sound a note of caution. We need to ensure all research is sufficiently robust and gives meaningful data. This means we need scientifically led monitoring programmes and those should be a priority.²⁹

Buglife welcomed the baseline setting aspect of the research plans in the Strategy:

Establishing a national pollinator monitoring scheme that has abundance data, that gives us a clear indication of our pollinator populations are doing, is the fundamentally most important thing that we can achieve with the National Pollinator Strategy. If we can come back in 10 years' time and say, "We now know what has happened over the last 10 years to pollinator populations", then we are in a much stronger place to make future policy recommendations and policy development. Above all else, that is what we think is required.³⁰

14. The draft *National Pollinator Strategy* states that an "important part of the Government's offer is to invest in monitoring and research to address key gaps in our understanding". The Strategy's priority actions include six projects, to be implemented between 2014 and 2019, to "develop and implement a coordinated and sustainable long-

27 [A consultation on the National Pollinator Strategy: for bees and other pollinators in England](#), op cit, Table 1, p7

28 Q13

29 Q55

30 Q11

term monitoring programme on pollinators”.³¹ This national effort follows an early withdrawal from a part-EU-financed *Pan-European epidemiological study on honeybee colony losses 2012–2013* (‘EPILOBEE’).³² When we discussed the ‘EPILOBEE’ project with Commission officials during our visit to Brussels in February 2014, they expressed some surprise at the UK’s withdrawal from the research. Defra told us that after participating in 2012–13, it withdrew from the 2013–14 round of work because of a reduction in available European Commission funding, and because of a delay in approving and launching the second round of the programme. The delay diminished the feasibility and utility of the programme as winter approached and UK apiarists had been reassigned to other work. The EPILOBEE programme was due to be discontinued after the 2013–14 second round of surveys.³³

Pesticides: research scope

15. Given the recent controversy around the impact of neonicotinoid pesticides on pollinators and the expected review of the EU-wide ban in 2015 (paragraph 1), it is no surprise that the draft Strategy envisages a research programme investigating the pollinator-pesticide interface. Nevertheless, some of the evidence we received suggested that the focus of the research would be too narrow. Dr Christopher Connolly told us:

[By focussing on neonicotinoid pesticides, the *National Pollinator Strategy*] ignores all of the other 300 pesticides used in the UK. There is no evidence that only the neonicotinoids may pose a risk. It is largely only the neonicotinoids that have been subjected to the highest standards required to identify sub-lethal toxicity. Many other pesticides will also fall at this hurdle (were they to be tested) and direct comparisons are essential. ... Most importantly, this Strategy does not attempt to consider enhanced toxicity from pesticide combinations. This is a major limitation as many pesticides are mixed into cocktails for cost-effective application and fields are exposed to multiple treatments.³⁴

Defra’s Professor Ian Boyd emphasised a need to continue research on other pesticide chemicals because of the potential for farmers to increase their use following the neonicotinoid ban.³⁵ He told us that he would welcome research on pesticide combinations, or ‘cocktails’, but:

the question is how that can be funded, because is a potentially huge issue. It is one where, with even just three or four different types of pesticides being used, you have a lot of different combinations. The numbers of experiments that you have to do in order to look at combinations starts to

31 [A consultation on the National Pollinator Strategy: for bees and other pollinators in England](#), op cit, Executive Summary, para 10

32 European Commission, [‘Study on honey bee colony mortality’](#), accessed 01 July 2014

33 Q49; Defra ([NPS0030](#)), pp2-4

34 Christopher Connolly ([NPS0003](#)), para 1.

35 Q13

multiply very quickly and I think the only way we can tackle this is to understand the physiological action of pesticides in different target and non-target organisms so that we can understand whether pesticides that are used in combination with each other are likely to have synergistic or antagonistic actions.³⁶

16. That focus on understanding pesticides' physiological action on individual bees and colonies resurrects the arguments from our earlier inquiry about the relative weight to be given to laboratory and field experiments. In our earlier report we described Defra's doubts about the conclusions that could be drawn from laboratory tests of the viability of bee colonies in field conditions.³⁷ For the *National Pollinator Strategy*, Defra's focus seems to be exclusively on large-scale field research. Professor Boyd closely followed his evidence in our previous inquiry when, for this inquiry, he told us:

One of the reasons we are in the position we are with respect to not having a very good evidence base on some of these pesticides, in particular neonicotinoids, is that many of the studies have been done at far too small a scale to be able to answer the questions One of the problems with laboratory studies is that they very often do not ask the right questions. They are not asking the question that we need to answer, which is: what is the effect of these pesticides on pollinator populations in their natural environment? That means we need to do the studies in the natural environment, at the right scales, and my view is that if we cannot do it, they are not worth doing at all.³⁸

And similarly, as in our earlier inquiry, Professor Goulson emphasised that laboratory studies had an important place in pollinator research, by providing:

... a controlled environment, where you can be sure that your controls are not exposed, in this instance, to pesticidesIt is almost impossible to perform a perfect study in this area, even if you had almost unlimited resources to perform a study of, for example, the effects of pesticides on bees with replicates and controls. With free-flying bees throughout, given that bees fly several miles from their colony to find food, it is essentially impossible in the modern world where there are pesticides almost everywhere. If we waited for the perfect field experiment, we would be here forever.³⁹

As illustration of such field experiment conditions, and the difficulty of establishing 'control' conditions, he told us:

We have been doing work funded by Defra ... that is looking at other sources of contamination, sources of exposure of bees. There is reason to believe

36 Q14

37 [Pollinators and Pesticides](#), op cit, para 46

38 Q16

39 Q15

because neonics accumulate in the soil and are water soluble and get into groundwater that they might be taken up by the roots of things other than the crop. ... If they are in the groundwater they will be taken up by hedgerow, trees and shrubs and wildflowers in the field margin. ... With the funding we have been analysing samples of pollen and nectar collected from wildflowers growing in field margins and a very large number of them are contaminated with a whole mixture of neonicotinoids at concentrations only a little lower than that found in the crop, nectar and pollen, which means that bee nests in the real world are being exposed throughout the year to a cocktail of neonicotinoids right from early spring ... through to the summer.⁴⁰

Pesticides: research funding

17. Most of the research envisaged in the draft *National Pollinator Strategy* would be led by Defra. An exception is ‘Action 10’—to “determine the effects of neonicotinoids on wild and managed pollinators in field conditions”—which would be funded by neonicotinoid manufacturers. This was a concern for several of our witnesses: the results of the studies, when completed, might be seen as biased and “command little confidence with the public”.⁴¹

18. The acceptability of commercially-funded research has perhaps been made more difficult by the application to the Government by Syngenta for an “emergency use application on behalf of UK farmers for a limited use of [its EU-banned] neonicotinoid seed treatment ... where alternative approaches are not effective and a danger to production exists”, to be used to tackle aphid and flea beetle on oil seed rape.⁴² EU regulations allow Member States to “authorise, for a period not exceeding 120 days, the placing on the market of plant protection products, for limited and controlled use, where such a measure appears necessary because of a danger which cannot be contained by any other reasonable means”.⁴³ ***While we were seeking clarification on this application, Syngenta withdrew it.⁴⁴ The Government should make clear, either in its response to this report or in the final National Pollinator Strategy, that had it been obliged to rule on the application it would not have allowed it, or indeed any other of a similar kind in future.***

19. Defra’s chief scientist, Professor Boyd, emphasised that Bayer and Syngenta were providing funding that “would otherwise need to come from a public source and at the moment that public source is not available”.⁴⁵ He did not accept that that would undermine the research results, and instead saw advantages for Defra in standing back from the work:

40 Q48

41 Buglife ([NPS0020](#)), para 7.2; also Pesticide Action Network ([NPS0005](#)), para 4, and Friends of the Earth ([NPS0016](#)), p3

42 ‘[Syngenta seeks “emergency” exemption to use banned insecticide on UK crops](#)’, The Guardian, 25 June 2014

43 Syngenta ([NPS0029](#))

44 ‘[Syngenta withdraws application to use banned pesticide linked to bee harm](#)’, The Guardian, 4 July 2014

45 Qq22-23

Just because [industry] are paying for the studies ... does not mean to say that the studies are invalid. We have sight of all the methodologies. Why is the industry paying for it? The industry benefits, therefore, they should pay for it. Why is Defra not more involved in it? Defra has a regulatory role. If we are involved in funding these studies, then we have skin in the game, if you like, and as a result have less capacity to stand back and be the referees of the game.⁴⁶

Dr Julian Little from Bayer CropScience added:

We are not doing the work. The work is being overseen by the Centre for Ecology and Hydrology. Yes, we are putting the money up for it, but it is being done by independent scientists. They are working with both Defra and [the European Food Safety Authority] to ensure that those protocols are relevant and, of course, all the information that comes from those studies will be with the Centre for Ecology and Hydrology and I am certain it will be published at some point in the future.⁴⁷

Bayer CropScience had “every expectation” that the results would be published.⁴⁸

20. Professor Boyd saw other advantages from the scale of the industry-funded research, as the data could be used to test other threats to pollinators:

There is a whole set of hypothesised reasons for pollinator decline: landscape scale changes, the intensification of agriculture, pesticides, but also problems around disease, for example. What we can do is put in place experiments that have the capacity to look at the relative importance of those simultaneously. I know that Bayer, together with Syngenta, are funding large-scale experiments on neonicotinoids. They will be focused mainly on honey bees and some of the wild pollinators, but we have the capacity, because of the scale of those, to look at other covariates within the system; weather-related covariates, for example.⁴⁹

21. We welcome Defra’s commitment to establish a national pollinator monitoring framework. This is an area where a lack of universally accepted research has allowed a degree of uninformed assertion to mix unhelpfully with robust science. A clear and less disputed ‘baseline’ understanding of the plight of pollinators, what is putting pressure on their numbers and what is not, is a necessary first step in identifying practical measures to support pollinators.

22. Defra’s reliance on industry to fund critically important research exposes it to excessive reliance on the commercial (rather than scientific) research priorities of these bodies and is symptomatic of a loss of Defra’s capacity to deliver its environmental

46 Q17

47 Ibid

48 Q31

49 Q16

protection obligations. That becomes a particular weakness where the industry-funded research is intended to contribute to a review of the ban on neonicotinoids. Defra's role as a "referee", as the Department put it, for evidence delivered from that research will not be of much use if the studies are designed according to priorities different than those the Department itself should be concerned with.

23. Where the research is being funded by pesticide manufacturers, it is important that the design of the studies and how they are undertaken and reported is independent of its paymasters, and is transparent. This is particularly important because Defra has already declared its antipathy to the ban on neonicotinoid pesticides. Its ability to act as a "referee" requires not only that it is unbiased, but also that it is seen as such by the public. We take some assurance from the fact that the Centre for Ecology and Hydrology will oversee the integrity of the work. *Defra must ensure that independent controls remain in place throughout any commercially-funded research, and that when completed the results are peer-reviewed and published in full and without delay.*

3 Strategy implementation

24. The draft *National Pollinator Strategy* sets out a general approach and principles which will guide the implementation of ‘priority actions’ (paragraph 3). It states that “[t]he case for Government intervening to safeguard our pollinators is based on a market failure”; the market does not support the provision of such a public good.⁵⁰

Nevertheless, the implementation of the *Strategy*, the draft states, will be mostly based on voluntary action:

We do not intend to introduce unnecessary burdens or regulations; rather our aim is for the priority actions to be used as a focus and driver for voluntary action by partners under the Strategy. We want to inspire action at all levels by all partners.⁵¹

25. The draft *National Pollinator Strategy* states that “the regulatory environment must maintain a balance of incentivised, voluntary and regulatory activity” and notes that, should voluntary measures not deliver, the option of mandatory requirements would be considered.⁵² The voluntary approach to protecting pollinators is reflected in the Government’s policy on agriculture, Integrated Pest Management and engaging the public, as we discuss below.

Farming

26. Professor Goulson highlighted the significance of agriculture for pollinators: “The bulk of the countryside is farmland and unless that is managed in a way that is sympathetic to pollinators then we will not solve these problems.”⁵³ Buglife wanted a commitment in the Pollinator Strategy to a “coherent network of pollinator habitats”, including flower-rich meadows in the countryside.⁵⁴ The ‘priority actions’ on agriculture in the draft *Strategy* include:

- two voluntary activities for collecting information—securing a commitment from agricultural advisers to include the ‘call to action’ package in information for farmers and a programme of ‘pro-pollinator events’ delivered by the Campaign for the Farmed Environment initiative; and
- a commitment to “ensure pollinators represent a key focus of the ongoing implementation of CAP reform,”⁵⁵ supplemented by a commitment to distributing information on Integrated Pest Management (paragraph 32).

50 [A consultation on the National Pollinator Strategy: for bees and other pollinators in England](#), op cit, para 11

51 [ibid](#), para 27

52 [ibid](#), paras 35, 37

53 Q8

54 Q9

55 [A consultation on the National Pollinator Strategy: for bees and other pollinators in England](#), op cit, para 36

27. The reliance on voluntary measures in the draft *National Pollinator Strategy* was a cause for concern for many of our witnesses. Professor Goulson told us that

I cannot see any farmer changing their behaviour on the basis of a bit of extra advice on the Defra webpage ... and it is very unclear to me how what is in the document is going to change anything at all in terms of farming.⁵⁶

Friends of the Earth believed that existing schemes—including the Campaign for the Farmed Environment and the Pesticides Voluntary Initiative—offered “mere tinkering around the edges” where a more fundamental transformation (such as, for example, diversifying crops) was needed.⁵⁷ Wildlife and Countryside Link concluded that:

The [*National Pollinator Strategy*] is overly reliant on simply supplying people with information. This will not be enough to stimulate action in all sectors. Little focus has been given to how Government can ensure delivery on the ground, for example by providing incentives or funding, or enforcing regulation.⁵⁸

The RSPB calculated that half of the targets in the voluntary Campaign for the Farmed Environment had not been achieved,⁵⁹ and the Women’s Institute similarly saw voluntary schemes as “flimsy vessels for implementing policy”.⁶⁰

28. The CLA and NFU, on the other hand, objected to the prospect of new regulatory measures. The CLA were concerned that regulatory measures would result in low-quality outcomes because of a lack of farmers’ ownership of the initiatives.⁶¹ They favoured a mixture of voluntary and incentivised schemes. The NFU told us that the Campaign for the Farmed Environment had resulted in 677,000 hectares of environmentally-focussed land measures,⁶² but that on their own voluntary measures would not be sufficient:

Increasing the uptake of measures for pollinators on farmland through voluntary measures alone is going to be extremely challenging for the industry. Maintaining existing measures and creating new measures has a cost. Farming and growing businesses have limited ability to absorb such additional costs, as they have limited or no ability to push additional costs further down the supply chain.⁶³

The CLA similarly stated that if more than voluntary measures were needed, the uptake of pollinator-friendly measures should be incentivised:

56 Q8

57 Q58

58 Wildlife and Countryside Link ([NPS0018](#)), para 3

59 RSPB ([NPS0026](#)), para 1

60 Q59

61 CLA ([NPS0011](#)), para 13

62 [Ibid.](#), paras 13-15; NFU ([NPS0007](#)), p2

63 NFU ([NPS0007](#)), para 27

Farmers have a role to play in providing for pollinators, but in order for this to be possible there must be sufficient incentives for them to do so. With paid environmental measures comes an increased level of quality. The design of agri-environment schemes therefore has a vital role to play, along with the formation of private methods for paying for biodiversity.⁶⁴

29. The main ‘incentives’ currently come from the Common Agricultural Policy (CAP). In our report on *Pollinators and Pesticides*, we looked to the then ongoing CAP reform negotiations to offer an opportunity for more pollinator-friendly programmes.⁶⁵ The recently agreed CAP scheme incorporates, as was envisaged, direct ‘Pillar 1’ payments which are partly dependent on the adoption of ‘greening’ measures. ‘Pillar 2’, co-funded by the EU and national governments, offers additional payments to farmers for initiatives contributing to rural development, including environmentally friendly schemes. As a result, payments for pollinator-friendly initiatives can be for ‘Ecological Focus Areas’ (EFAs) under Pillar 1⁶⁶ and for ‘New Environmental Lands Management Schemes’ under Pillar 2. Specific options for EFAs were left to member states to determine, and in June 2014 Defra announced that these would include: land lying fallow; buffer strips; ‘catch and cover’ crops; hedges; and nitrogen-fixing crops such as peas and beans.⁶⁷ The European Commission has undertaken to review the implementation and efficacy of EFAs after the first year of operation.⁶⁸

30. Our witnesses were sceptical of the CAP measures’ potential to deliver pollinator-friendly outcomes. The CLA told us that the dwindling resources of CAP did not guarantee desirable outcomes, and the NFU considered that the lack of pollinator-specific measures was a wasted opportunity.⁶⁹ Friends of the Earth told us that “reliance on current measures proposed in the CAP will not be enough. ... The take up of CAP options, whether [New Environmental Lands Management Schemes] or Greening, will need to be vigorously encouraged.”⁷⁰

31. The CAP reforms were an opportunity for farming to lead the way in supporting pollinators. The way that Defra is structuring the environmental schemes within the CAP, however, risks that opportunity being lost. *The Government must review the aspects of CAP environmental schemes which are open to national decision-making to ensure that pollinator protection is a priority driver rather than an optional rationale. It should also ensure that the European Commission’s review of the implementation and efficacy of Ecological Focus Areas after their first year of operation applies a similar test.*

64 CLA ([NPS0011](#)), para 16

65 [Pollinators and Pesticides](#), op citl, paras 89-91

66 The EFA scheme requires farmers with more than 15 hectares of arable land to maintain 5% of that land as an Ecological Focus Area; this will account for 30% of the farmers’ subsidy.

67 HC Deb, 10 June 2014, [col42-43WS](#)

68 European Commission, ‘[Commission Declaration on Delegated Acts of CAP Reform](#)’ (2 April 2014)

69 CLA ([NPS0011](#)), p2; NFU ([NPS0007](#)), paras 22-25

70 Friends of the Earth ([NPS0016](#)), p4

Pollinators and Integrated Pest Management

32. The draft *National Pollinator Strategy* contains three ‘priority actions’ aimed at increasing the uptake of Integrated Pest Management (IPM) among farmers. It explains that:

Increased uptake of IPM would help achieve a more targeted and risk-based approach to managing pests, weeds and diseases, with potential benefits for pollinators and other wildlife.⁷¹

In the draft *Strategy*, the definition of IPM is based on the Sustainable Use of Pesticides Directive:

the careful consideration of all available plant protection methods, and subsequent integration of appropriate measures that discourage the development of populations of harmful organisms and keep the use of plant protection products and other forms of intervention to levels that are economically and ecologically justified and reduce or minimise risks to human health and the environment. ‘Integrated pest management’ emphasises the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms.⁷²

The draft *Strategy* explains that:

Integrated pest management does not prohibit pesticide use but draws on a full range of tools and techniques to control pests, weeds and diseases and to ensure targeted use of pesticides to minimise risks to the environment. It is a toolkit for combining effective crop protection with a full awareness of potential environmental impacts.⁷³

33. This differed from the apparently more pesticide-averse perspective of the UN Food and Agriculture Organisation, which describes “specific and targeted application of pesticides as a last resort”.⁷⁴ The *Worldwide Integrated Assessment* review of past studies on pesticides concluded that “the present scale of use of neonicotinoids is not a sustainable pest management approach ... [because] the current practice of seed treatment ... applies chemicals as the first resort”.⁷⁵ Our witnesses highlighted particular problems in the UK: there was little consensus about what constituted IPM, and that allowed a range of views on the appropriate emphasis that should be placed on reducing pesticide use.⁷⁶ Friends of the Earth wanted Defra to provide greater clarity:

71 [A consultation on the National Pollinator Strategy: for bees and other pollinators in England](#), op cit, para 12

72 *Ibid*, para 39

73 *Ibid*, para 40; [Directive 2009/128/EC of the European Parliament and of the Council: establishing a framework for Community action to achieve the sustainable use of pesticides](#), (October 2009), Article 3, para 6

74 Food and Agriculture Organization of the United Nations, [More about IPM](#), accessed 01 July 2014

75 Van der Sluijs, Goulson et al, [Conclusions of the Worldwide Integrated Assessment on the risks of neonicotinoids and fipronil to biodiversity and ecosystem functioning](#)

76 Friends of the Earth ([NPS0016](#)), para 4; Pesticide Action Network ([NPS0005](#)), para 11

There needs to be a much clearer commitment in the final *National Pollinator Strategy* to develop specific IPM crop protocols—starting with crops attractive to pollinators. This would benefit farmers adjusting to the restrictions on neonicotinoids as well as targeting crops visited by insect pollinators. The *National Pollinator Strategy* overly focusses on the temporary restrictions on some neonicotinoids. It would do better to start supporting researchers to find and farmers and growers to use alternatives to these insecticides.⁷⁷

34. The Government’s *National Action Plan for the Sustainable Use of Pesticides*, adopted in February 2013 to fulfil the requirements of the EU’s Sustainable Use Directive, reflects “the priorities of the Government, particularly in reducing the burdens on business and reducing the costs, and, where appropriate, the activities of Government”.⁷⁸ It accordingly focuses on voluntary measures, including the Voluntary Initiative for pesticides and the Amenity Forum. The *Action Plan* does not contain an explicit commitment to reducing the use of pesticides, but rather “reducing risks of pesticide use” and “encouraging” the development of non-chemical alternatives.⁷⁹ The EU Sustainable Use of Pesticides Directive requires that “states should promote low pesticide-input pest management”,⁸⁰ and Friends of the Earth wanted the *National Pollinator Strategy* to include targets for reducing pesticide use.⁸¹

35. While Integrated Pest Management does not mean an end to the use of pesticides, it offers a way to reduce their application and the risks they present to pollinators. Defra should present in the finalised Pollinator Strategy a clear view of what Integrated Pest Management includes and excludes, and ensure its interpretation of IPM reflects best practice elsewhere, including the UN guidance. The Strategy should also set out how potential targets for IPM, including for reduced pesticide use, could build on a researched, evolving understanding of the factors affecting pollinators.

Engaging the public

36. The draft *National Pollinator Strategy* envisages members of the public having an important role to play in supporting pollinators. Defra told us that it was “keen to engage the public on the call to action”. It set out a dual approach to engagement: a combination of identifying simple actions that individuals could undertake and providing detailed guidance tailored to different types of land use.⁸² The intended advice for the public identified in the draft *National Pollinator Strategy* was based on three major initiatives: growing more pollen- and nectar-providing plants; leaving patches of land growing wild;

77 Friends of the Earth ([NPS0016](#)), p8

78 Department for Food, Environment and Rural Affairs, [UK National Action Plan for the Sustainable Use of Pesticides](#) (February 2013), para 4.1

79 *ibid*, para 7.1

80 European Commission, [Directive 2009/128/EC of the European Parliament and of the Council](#), Preamble, para 18

81 Q78

82 Q63

and careful consideration of pesticide use in private gardens and amenities.⁸³ In its subsequent oral evidence to our inquiry, Defra officials explained how this had been fleshed out as a result of the consultation process for the Strategy.⁸⁴

37. Professor Goulson was sceptical about this aspect of the Strategy: “There have been umpteen calls for action on pollinators already. ... The public knows about pollinator declines. I do not see what extra we can easily add.”⁸⁵ Pesticide Action Network, on the other hand, saw the *Strategy* as a “golden opportunity” to promote non-chemical methods as the first choice for home and garden use.⁸⁶ In our earlier report, we concluded that there was little need for the use of pesticides in private gardens, although our recommendation that Defra ban the use of neonicotinoid pesticides in non-agricultural surroundings was rejected.⁸⁷ **We welcome the Strategy’s emphasis on public engagement in protecting pollinators. It will tap an invaluable and committed resource, and help lock in continuing pressure on Government to maintain pro-pollinator initiatives. We welcome Defra’s declaration that the final National Pollinator Strategy will advise the public to consider alternative, non-pesticide, pest control methods.**⁸⁸

Finalising the Pollinator Strategy

38. The publication of the final version of the Strategy this autumn (paragraph 5) will be followed by a detailed “delivery plan” within six months.⁸⁹ *The finalised Strategy and the ‘delivery package’ to take it forward should set out the Government’s intended approach in the areas we have examined in this report: ensuring agriculture plays a full part in protecting pollinators; the role of Integrated Pest Management; and how public engagement will be sustained. It should explain and justify the logic of the predominantly voluntary approach of the measures in the draft Strategy and identify the tests for judging if a mandatory or incentivised approach would be required. The final Strategy should provide a coherent narrative of how all relevant Government policies will contribute to pollinator protection—not just other environmental policies within Defra’s remit but those of other departments such as the well-being agenda⁹⁰ and development planning⁹¹—and set out a process for the Strategy to be continually updated as further research is undertaken and policy developed.* In the meantime, we are undertaking a separate inquiry on an Environmental Scorecard which seeks to address that wider environmental perspective.

83 [A consultation on the National Pollinator Strategy: for bees and other pollinators in England](#), op cit, Table 2, p7; Q64

84 Q63

85 Q8

86 Pesticide Action Network ([NPS0005](#)), para 7

87 [Pollinators and Pesticides](#), op cit, paras 82-84

88 Q64

89 Defra ([NPS0030](#)), para 1

90 Environmental Audit Committee, Fifteenth Report of Session 2013–14, [Well-being](#), HC59-I

91 Environmental Audit Committee, Session 2010–12, [Sustainable Development in the National Planning Policy Framework. Oral and Written Evidence](#), HC 1480

39. Defra should also use the final Strategy to draw a line under the neonicotinoid ban by making it clear that the UK accepts the European risk assessments underpinning the ban, that it supports the ban and will not seek to end it when a European review is possible in 2015, or otherwise to circumvent it. Defra should make it clear that applications to continue using neonicotinoids, like Syngenta's (paragraph 18), would constitute an attempt to by-pass the precautionary principle rationale behind the ban and as such will not be contemplated.

Conclusions

1. The 2013 decision to ban three neonicotinoid pesticides, introduced in Europe against the wishes of the Government, was the right approach given the requirements of the precautionary principle. The Government continues to interpret that principle as encompassing economic as well as environmental considerations. We do not agree. However, if the Government insists on doing so, it should follow its own argument by being able to clearly demonstrate not just the impact of neonicotinoids on pollinators, but also the benefits or otherwise of using them on crop yields and the possible cost of reduced pollination services. (Paragraph 11)
2. We welcome Defra's commitment to establish a national pollinator monitoring framework. This is an area where a lack of universally accepted research has allowed a degree of uninformed assertion to mix unhelpfully with robust science. A clear and less disputed 'baseline' understanding of the plight of pollinators, what is putting pressure on their numbers and what is not, is a necessary first step in identifying practical measures to support pollinators. (Paragraph 21)
3. Defra's reliance on industry to fund critically important research exposes it to excessive reliance on the commercial (rather than scientific) research priorities of these bodies and is symptomatic of a loss of Defra's capacity to deliver its environmental protection obligations. Defra's role as a "referee", as the Department put it, for evidence delivered from that research will not be of much use if the studies are designed according to priorities different than those the Department itself should be concerned with. (Paragraph 22)
4. Where the research is being funded by pesticide manufacturers, it is important that the design of the studies and how they are undertaken and reported is independent of its paymasters, and is transparent. This is particularly important because Defra has already declared its antipathy to the ban on neonicotinoid pesticides. Its ability to act as a "referee" requires not only that it is unbiased, but also that it is seen as such by the public. We take some assurance from the fact that the Centre for Ecology and Hydrology will oversee the integrity of the work. (Paragraph 23)
5. The CAP reforms were an opportunity for farming to lead the way in supporting pollinators. The way that Defra is structuring the environmental schemes within the CAP, however, risks that opportunity being lost. (Paragraph 31)
6. While Integrated Pest Management does not mean an end to the use of pesticides, it offers a way to reduce their application and the risks they present to pollinators. (Paragraph 35)
7. We welcome the Strategy's emphasis on public engagement in protecting pollinators. It will tap an invaluable and committed resource, and help lock in continuing pressure on Government to maintain pro-pollinator initiatives. We welcome Defra's declaration that the final National Pollinator Strategy will advise the public to consider alternative, non-pesticide, pest control methods. (Paragraph 37)

Recommendations

8. While we were seeking clarification on its application to use an EU-based neonicotinoid seed-treatment, Syngenta withdrew it. The Government should make clear, either in its response to this report or in the final National Pollinator Strategy, that had it been obliged to rule on the application it would not have allowed it, or indeed any other of a similar kind in future. (Paragraph 18)
9. Defra must ensure that independent controls remain in place throughout any commercially-funded research, and that when completed the results are peer-reviewed and published in full and without delay. (Paragraph 23)
10. The Government must review the aspects of CAP environmental schemes which are open to national decision-making to ensure that pollinator protection is a priority driver rather than an optional rationale. It should also ensure that the European Commission's review of the implementation and efficacy of Ecological Focus Areas after their first year of operation applies a similar test. (Paragraph 31)
11. Defra should present in the finalised Pollinator Strategy a clear view of what Integrated Pest Management includes and excludes, and ensure its interpretation of IPM reflects best practice elsewhere, including the UN guidance. The Strategy should also set out how potential targets for IPM, including for reduced pesticide use, could build on a research-led, evolving understanding of the factors affecting pollinators. (Paragraph 35)
12. The finalised Strategy and the 'delivery package' to take it forward should set out the Government's intended approach in the areas we have examined in this report: ensuring agriculture plays a full part in protecting pollinators; the role of Integrated Pest Management; and how public engagement will be sustained. It should explain and justify the logic of the predominantly voluntary approach of the measures in the draft Strategy and identify the tests for judging if a mandatory or incentivised approach would be required. The final Strategy should provide a coherent narrative of how all relevant Government policies will contribute to pollinator protection—not just other environmental policies within Defra's remit but those of other departments such as the well-being agenda and development planning—and set out a process for the Strategy to be continually updated as further research is undertaken and policy developed. (Paragraph 38)
13. Defra should use the final Strategy to draw a line under the neonicotinoid ban by making it clear that the UK accepts the European risk assessments underpinning the ban, that it supports the ban and will not seek to end it when a European review is possible in 2015, or otherwise to circumvent it. Defra should make it clear that applications to continue using neonicotinoids, like Syngenta's, would constitute an attempt to by-pass the precautionary principle rationale behind the ban and as such will not be contemplated. (Paragraph 39)

Formal Minutes

Wednesday 16 July 2014

Members present:

Joan Walley, in the Chair

Peter Aldous
Martin Caton
Zac Goldsmith
Mike Kane
Mark Lazarowicz
Caroline Lucas

Caroline Nokes
Dr Matthew Offord
Mrs Caroline Spelman
Dr Alan Whitehead
Simon Wright

Draft Report (*National Pollinator Strategy*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 39 read and agreed to.

Summary agreed to.

Resolved, That the Report be the Second Report of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till Thursday 17 July at 10.50 am

Witnesses

Wednesday 18 June 2014

Professor Ian Boyd, Chief Scientist, Defra, **Matt Shardlow**, Chief Executive, Buglife, **Dr Julian Little**, Head of Government Affairs, Bayer CropScience, and **Professor Dave Goulson**, Sussex University.

[Q1-48](#)

Alick Simmons, Director & Deputy Chief Veterinary Officer, Defra, **Liz McIntosh**, Strategic Policy, Pollinators and Plant Health Team, Defra, **Dr Chris Hartfield**, National Farmers' Union, **Sandra Bell**, Friends of the Earth, and **Marylyn Haines Evans**, Chair of Public Affairs, National Federation of Women's Institutes.

[Q49-72](#)

List of printed written evidence

- 1 Professor Dave Goulson ([NPS0001](#))
- 2 Bumblebee Conservation Trust ([NPS0002](#))
- 3 Dr Christopher N Connolly, University of Dundee ([NPS0003](#))
- 4 Oxford Martin School, Oxford University ([NPS0004](#))
- 5 Pesticide Action Network UK ([NPS0005](#))
- 6 The Wildlife Trusts ([NPS0006](#))
- 7 National Farmers' Union ([NPS0007](#), [NPS0022](#))
- 8 Robert Smith ([NPS0008](#))
- 9 The Soil Association ([NPS0009](#))
- 10 Cla ([NPS0011](#))
- 11 The Crop Protection Association UK Ltd ([NPS0012](#))
- 12 John Hoar ([NPS0014](#))
- 13 Field Studies Council ([NPS0015](#))
- 14 Friends of the Earth ([NPS0016](#))
- 15 Cynthia Spanner ([NPS0017](#))
- 16 Wildlife and Countryside Link ([NPS0018](#))
- 17 Bayer CropScience Limited ([NPS0019](#), [NPS0024](#))
- 18 Buglife ([NPS0020](#))
- 19 Waitrose ([NPS0021](#))
- 20 National Federation of Women's Institutes ([NPS0023](#))
- 21 Royal Society for the Protection of Birds ([NPS0026](#))
- 22 Professor Nigel Raine ([NPS0027](#))
- 23 John Harding ([NPS0028](#))
- 24 Syngenta ([NPS0029](#))
- 25 Defra ([NPS0030](#))