



Environmental Audit Committee

Oral evidence: [National Pollinator Strategy](#),
HC 213

Wednesday 18 June 2014

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Written evidence from witnesses:

- [Buglife](#)
- [Bayer Cropscience Limited](#)
- [Friends of the Earth](#)
- [National Farmers' Union](#)

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Members present: Joan Walley (Chair); Martin Caton; Neil Carmichael; Zac Goldsmith; Mike Kane; Mark Lazarowicz; Caroline Lucas; Caroline Nokes; Dr Matthew Offord; Mrs Caroline Spelman; Dr Alan Whitehead, Simon Wright

Questions 1-72

Witnesses: **Professor Ian Boyd**, Chief Scientist, Department for Environment, Food and Rural Affairs, **Matt Shardlow**, Chief Executive, Buglife, **Dr Julian Little**, Head of Government Affairs, Bayer CropScience, and **Professor Dave Goulson**, Sussex University, gave evidence.

Q1 Chair: I know you are all return witnesses to our Committee, so I thank you for your time in coming this afternoon. It has been very clear from the terms of remit of our subsequent inquiry that we are very keen to have some influence, if at all possible, in respect of the National Pollinator Strategy in terms of our own inquiry work on the Environment Audit Select Committee. May I start with you Professor Boyd? Could you explain to us why

it has been adopted and what its main aim is? It might also help if you could give a timescale so that, whatever our inquiry recommendations are, there will be an opportunity for it to at least be considered by Government before the policy and the strategy is laid in stone.

Professor Boyd: Thank you very much for asking me along and I am sure my colleagues here are similarly grateful. The National Pollinator Strategy is due for publication in the autumn, probably in October. It has obviously gone through a long genesis, which has involved a large amount of consultation among the stakeholder community and it has gone for wide consultation. It has been modified as a result of that consultation and it is being currently modified and will be published in its final form in the autumn, as I said.

In terms of its rationale, we have been aware for a long time of issues around pollinators, potential problems with pollinator number and the direction of change of pollinator populations. What we wanted to do was to try to distil out from the stakeholder community their view of where the problems sat, to collate the evidence—we commissioned a project to undertake a review of the evidence—and then to present that evidence to the stakeholder community and to come up with an approach to address some of the problems that we perceive with pollinators. When I talk about pollinators, I am talking about wild pollinators but also domesticated pollinators, particularly honey bees. I think we have to see them as different types of problems because, in the case of the domesticated pollinators, obviously there is a human hand involved in that and the direction of change in the honey bee populations is very much down to how many beekeepers there are and the success of beekeeping; whereas, with wild pollinators, there are some much wider issues around environmental change that has gone on over the last few decades: farming practices, intensification of farming and, as we know, pesticides and that sort of thing as well.

Q2 Chair: In a nutshell, what is its main aim?

Professor Boyd: Its main aim is to make sure that pollinator populations are sustained and, if possible, are increased in future.

Q3 Chair: You mentioned just now the stakeholder consultation. Looking at the consultation with stakeholders but also with the wider public as well, what are the main conclusions that have come forward from that?

Professor Boyd: The main conclusion is that the public and the stakeholders generally are concerned about pollinators, but that also has to be nuanced around the evidence that there is around changes in pollinator populations. There have been declines in some pollinator populations, but some other ones have increased and others have stayed the same. There is, I think, a broader scientific question around whether we have sufficient pollinator services in the environment. There is a difference between the pollinator services that we require and the biodiversity of pollinators. The public and many of the stakeholders are very focused on the biodiversity of pollinators. We obviously do not like to see species going extinct or declining in abundance, but there is another question around whether we have enough pollinators in the general environment to supply the kind of pollination that we need for all our crops and our wildflower species as well.

Q4 Chair: Are you suggesting that the public consultation could throw up concerns that were not necessarily related to the evidence but more concerned with biodiversity rather than pollinator services and, therefore, would not be considered appropriate in terms of this consultation in advance of the national strategy?

Professor Boyd: No, I am not saying that some of the concerns that came from the wider stakeholders are not relevant to the national strategy. I think there are two elements to this and the wider stakeholder consultation has amplified those two elements. I think the stakeholders are very concerned about the biodiversity and that is being addressed by the pollinator strategy. Similarly, there is another broad concern around pollinator services and that is also being addressed by the strategy.

Q5 Chair: But the main conclusions from the public that you have so far had fed back to you, how would you summarise those?

Professor Boyd: I think the public are concerned about declines, particularly in flagship species like bumblebees, and there are elements of the public that are interested particularly in honey bees that are concerned about, for example, trends in over-wintering survival of honey bee colonies.

Q6 Chair: We are going to look in detail at some of the aspects of the consultation and the strategy but I am going to invite each of your fellow witnesses, starting with Dr Little if I may, to comment, in a very brief way, on the main strength of the strategy as it currently stands and the main shortcoming of the strategy as it currently stands.

Dr Little: Thank you very much and I appreciate being given the opportunity to speak this afternoon. From our perspective, from a Bayer perspective, we welcome the strategy. We believe the vision and the aims of the strategy are entirely appropriate. The key thing from our perspective is that we do believe that it is achievable. It is something that can have a specific goal of better understanding our pollinating insects in the UK, what services they provide and what options there are to improve their health going forward. Very briefly, I think funding is always going to be the issue. How do you do all of the things that you want to do with the limited resources that are available? That is always going to be an issue and I think it is going to require working with all stakeholders, including the industry, to be able to do everything that is being asked of it.

Q7 Chair: Are you saying that funding is not adequately addressed in the strategy?

Dr Little: No, I am saying that funding is always going to be the problem. You could do so much more with even more funding. Whether or not we have funding, and I do not think funding is necessarily addressed in the strategy—

Chair: You are saying it has not been addressed?

Dr Little: Yes. I would say that ensuring there is enough funding within the confines of all of this activity will be the limiting factor.

Q8 Chair: Thank you. Professor Goulson?

Professor Goulson: I agree entirely with Julian. The aims and vision are very hard to disagree with. We all want to conserve pollinators and make sure we have enough pollination. I guess my thoughts on the weaknesses are that a lot of it has already been done. There is a danger we will look back in five years' time and say, "Does anybody remember the National Pollinator Strategy? What did that ever do for us?" This idea of a call for action, which is one of the central planks: there have been umpteen calls for action on pollinators already. I started the Bumblebee Conservation Trust to try and get people involved in conservation of pollinators and there are 8,000 members all busy out there planting flowers in their gardens. There are lots of other organisations, like Buglife and Friends of the Earth, that have already had big campaigns. The public knows about pollinator declines. I do not see what extra we can easily add. On your specific issue, I am concerned particularly that one of the fundamental issues here is the way we farm. 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. The notion that somehow the National Pollinator Strategy is going to provide a bit more advice to farmers on how to use IPM is very vague. I cannot see any farmer changing their behaviour on the basis of a bit of extra advice on the DEFRA webpage or whatever and it is very unclear to me how what is in the document is going to change anything at all in terms of farming.

Q9 Chair: Mr Shardlow, what are strengths and further hurdles that need to be looked at?

Matt Shardlow: Thank you very much. We welcome the strategy. We know that pollinators are worth £510 million to British agriculture. They are also essential for the pollination of wildflowers and there is already evidence that 62% of wildflower species are restricted by pollen transmission. If there was more pollen transmission going on, there would be more seeds and more wildflowers in the countryside. There is a real danger we get into a negative spiral with declining pollinator populations and declining populations of wildflowers. It is essential that Government steps in to help with this situation because pollination is a common good that is not naturally protected by the market.

We welcome the strategy, particularly in terms of leadership, but I might disagree slightly with David. I think it is important that the Government is seen to be taking a lead and to be showing that this is a national priority for government agencies and local government to go out and deliver more pollinators in the countryside and more pollinator habitats. In that regard, I think one of the things we would have liked to see more of in the strategy is a more solid commitment to an ecologically coherent network of pollinator habitats; so more clear vision that the countryside, at the end of this, is going to have many more areas of flower-rich grass than it does at the moment. We have lost 97% of flower-rich grass since the second world war and 25 years of agri-environment schemes have re-created 0.3% of what we have lost.

We also feel that there are gaps around SSSIs. Many SSSIs are very important for endangered species of butterflies, bees and wasps, which are, as well as being important pollinators, things that the people love and value and there is a role here for protective science to be doing more to conserve pollinators. There is also a need to look at some of the individual species because this palette of pollinators is very important. Pollination is

not a simple thing. There is a whole range of different species all undertaking different roles and we do not want to lose any of those species. We need to strengthen the safety net as well as part of this, something that looks at those endangered species and stops the declines of the most endangered ones as well as addressing the broader issues in terms of agricultural management. I think that is probably all I want to say at the moment. I know there are some other issues we will come on to.

Q10 Martin Caton: Can I ask the same three witnesses to home in on research? What is your assessment of the research plans included in the draft NPS? Are there any significant omissions?

Dr Little: If I can start, one particular area that we have highlighted with DEFRA is this area about baseline. It is about understanding where you start from. Unless you know exactly what is out there, anything you do to try and improve what is going on will not be measurable. You will not be able to measure the impact that you have of anything that you decide to do and we would like to see a toughening up in the research area of getting a good baseline there.

Professor Boyd: Maybe I could come in on that.

Q11 Martin Caton: I am going to come to you in a minute, Professor Boyd, but I was just looking for an outside view at this stage.

Matt Shardlow: 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.

At Buglife, we do not think there is a huge amount to be gained by lots and lots of research into neonicotinoids, necessarily. We think there is a pretty good evidence base on that already. There are some areas around the wider context of getting better systems of research integrated into the authorisation process, which this Committee has made recommendations about previously that we agree with and think needs to be taken further; extended to include, for instance, butterflies, moths and hoverflies, which currently are not considered by the process. We would also very much like to see some more research done on integrated pest management and farming practices that are not perhaps related to pesticides as ways of managing pest problems in the countryside that do not mean you have to resort to a chemical solution all the time.

Q12 Chair: Professor Goulson?

Professor Goulson: I very largely agree with Matt. There is a desperate need to know what is happening with wild pollinator numbers. We just do not know at the moment. One other thing that sort of relates to Matt's last point is 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.

Q13 Martin Caton: Professor Boyd, I would be grateful if you want to come in on any of the points that are made. My next question follows on a little bit from what Mr Shardlow said. Research planned by DEFRA seems to focus on neonicotinoids. Are there plans to include other types of pesticides or herbicides?

Professor Boyd: Can I just respond to my colleagues and then I will come back to that one? I agree with my colleagues here about where the priorities sit. It is 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 and, in fact, we have already undertaken a lot of the preliminary work to design that, because it will need a lot of design. Just to make it clear, 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 and there are a lot of very good monitoring programmes already underway—Butterfly Conservation, for example, does a very good monitoring programme—that can be used as templates for taking forward large-scale monitoring.

One of the reasons why we are in the position we are in is that we do not have good enough information about what has happened in the past and we cannot be sure even what direction of travel there is of many pollinator populations. There is some data for butterflies and moths. There is obviously some data for some bees as well, but very little data about other species. We have to strengthen that. I completely agree about it.

Turning to your specific question, we do quite a lot of research on other types of chemicals but it is on the generalities around how to make sure that we are regulating them appropriately, that we understand how they are being used and, particularly, for example, with neonicotinoids, how withdrawal of neonicotinoids is going to potentially increase the use of other chemicals and how farmers will change their behaviour around that changing landscape of available active substances for them. My view is that, while we may not have a focus of activity in the same way as we have on neonicotinoids, because clearly there are concerns in that area, we have had in the past a lot of research done on other chemicals and we continue to do that.

Q14 Martin Caton: What about looking at the effect of pesticide cocktails? Is that something DEFRA would like to look at?

Professor Boyd: I would say that it is something I would like to see done, absolutely. 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. It is $n^2 - n$ number of combinations. The numbers of experiments that you have to do in order to look at combinations starts to 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.

Q15 Martin Caton: Professor Goulson, are you happy with the balance between field and laboratory tests being put forward in the strategy?

Professor Goulson: There has been a lot of debate about the relative merits of field and lab studies in this area and there has been some inference that lab studies are somehow inadequate and that they do not tell us anything about the real world. I would firstly defend lab studies and say most of the big discoveries in biology were made in labs and you can learn an awful lot from doing things in a controlled environment where you can be sure that your controls are not exposed, in this instance, to pesticides, for example. There has also been a suggestion that the studies that have found negative effects, to come back to neonicotinoids, are all lab studies, which is not true because many of them were performed largely in the field and that when you look in the real world, in the field, you do not find any effects. I think there is a better distinction between industry-funded studies and independent studies because that is where you find the difference in results. It 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.

Q16 Martin Caton: Professor Boyd, what other reasons for pollinator decline will be investigated and how?

Professor Boyd: 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.

Just going back to something that Dave Goulson said, he is absolutely correct that there are real challenges doing these studies because of the kind of scales that are involved. I think we are very fortunate in that we are beginning to develop the protocols around doing properly scaled field studies. 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.

Just going back to what Dave Goulson said about laboratory studies, 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.

Chair: Everyone has been very disciplined, I know, but we do have two panels to get through and I think we are expecting votes at 4 pm. I ask our witnesses to be as concise as they can be in their replies, please.

Q17 Mark Lazarowicz: Thank you, Chair, and I will try and be brief in my questions as well. This is a question to Professor Boyd. In the draft strategy, it is indicated that most of the research work will be led by DEFRA, but, regarding the research on the effects of neonicotinoids on pollinators in field conditions, it is indicated in the strategy that pesticide manufacturers will be the lead on future studies. Why do you feel that the pesticide manufacturers are the right people to lead this particular part of the research given, bluntly, that that could lead to the research being challenged in some quarters as being in some way tainted.

Professor Boyd: That is a very relevant point, but just because they are paying for the studies and leading the studies does not mean to say that the studies are invalid. We have sight of all the methodologies. That is being currently discussed with the wider stakeholder community. If that discussion has not happened, it is about to happen. We want to make sure that, before those studies are put in place, there is broad acceptance of them, that there is visibility of the studies as they are going on and also of the outcome of those studies. 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.

Dr Little: Could I make a comment on that as well? The studies that Professor Boyd is talking about, 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 sorting out the protocols. They are working with both DEFRA and EFSA 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.

Q18 Mark Lazarowicz: I can understand that, but I am sure you will also understand how there will be people who may question the validity, unfairly perhaps, because of the source of the funding and the commissioning by industry.

Dr Little: Of course.

Mark Lazarowicz: Would it not have been better, for example, if the commissioning was provided by DEFRA with industry funding it through DEFRA, but not funding it directly. Would that not have been a better way, for example, of ensuring independence?

Dr Little: Essentially what we have gone to the Centre for Ecology and Hydrology and said is, "We need these studies doing under the protocols that have been recommended by EFSA and by DEFRA. Go away and determine what those protocols will be, find the sites that we will need to do those experiments in and go away and do that work." When they

first did their para-analysis, the guidance that they had been given from EFSA—they came back and said, “If we were to follow and do everything that has been suggested by EFSA you would probably have to take the whole of the oilseed rape crop in the UK for your experiment.” Clearly the EFSA guidance, as it was at the time, was not suitable. They had to go back again, but it has been the Centre for Ecology and Hydrology that has been taking that forward. From our perspective it is, using your terminology, untarnished by industry.

Q19 Mark Lazarowicz: Colleagues might want to come back on that point but I would like to pursue it. One angle of this, Professor Boyd, is the issue raised by mention of EFSA and it is an issue that was raised with Members of the Committee informally when we visited Brussels a while ago. Some of the Commission officials advised us that the UK Government had been receiving funding from the European Commission for Europe-wide work on the issue of bee health and pollinators and that the UK was no longer participating in those studies and had not, in fact, applied for funding that was available. I wonder if Professor Boyd could give us some illumination of that particular point that was made to us. Is it true? Is the UK taking part in these European studies? Did we stop applying for funding that was available? Can you help us on that?

Professor Boyd: I probably cannot because I am not exactly sure what funding you are talking about. All I can say is that the UK has been a very active participant in Europe-wide pollinator studies. In fact there was a report produced relatively recently on honey bee over-winter survival that the UK was an active participant in. It may be that in some specific circumstances we have not taken part for various reasons but I do not know the specifics of what you are talking about.

Q20 Mark Lazarowicz: I understand you yourself might not be involved in it, but the point that was made to us was that the UK had been participating in these studies, perhaps in ongoing studies, but in terms of new work it had certainly withdrawn. It is a point that you may want to comment on at a later stage or come back to us on. I had a couple of parliamentary questions on this last year and this year and they show that the UK received from the EU funding of almost £300,000 in 2009-10, 2010-11 and 2011-12 and that that went down then to £148,000 in 2012-13 and then to just about £100,000 in 2013-14. Certainly there was a funding stream coming in there to the UK from the European Commission. It is not now and if you can't answer today, which I can well accept, perhaps you can let us know.

Professor Boyd: We are very happy to come back to you with details on that.

Q21 Chair: I know that Mr Shardlow wishes to come in on Mr Lazarowicz's question, but I think it would be helpful if the Committee could perhaps have a note setting out why the UK chose not to take up the offer of research funding from Europe when virtually all the other European countries dealing with this issue did have that research funding available and that the UK left it to the private sector to do.

Matt Shardlow: I just wanted to say something about the sources of funding for research and how the public may perceive that. I think it is worth remembering that, when the EC considered their ban, 73% of the British public supported a ban on neonicotinoid pesticides at that time. The public's opinion here is very important and the public needs to come along with any decisions and with evidence and seeing that evidence and believing that evidence. I think you only have to look through your responses to this Committee's inquiry and certainly all the responses we have had in talking around wildlife and countryside link member organisations, there is a profound lack of trust now in Bayer and the other agri-chemical companies and the research they are doing and how they are presenting that research. I think it would have been much better and could be much better if the Government was seen to be funding this from an impartial public pot and that was going to independent scientists who were not seen as having a particular vested interest in any particular outcome.

Q22 Caroline Lucas: I wanted to take up that point because it about perception as well as about reality. Leaving aside the issue of Bayer specifically, but just on the principle of, in such a contested area, having properly independent peer-reviewed research rather than research that can be seen from the outside as if it would be in the interests of the person that is paying for it, surely that is a compelling reason to look again at the degree to which the strategy depends on the research that is being done by private companies.

Professor Boyd: I agree with you to the extent that I think having independent delivery of the research is absolutely vital. I think that is what is happening. In fact I know that is what is happening. The question is whether we can afford, from a public perspective, to fund these types of studies. I go back to what I said earlier on. These studies are very large-scale and the bigger they get the more expensive they get. The kinds of orders of magnitude of funding—and I say “orders of magnitude of funding” here and you mentioned funding from the European Commission—these studies are going to cost at least an order of magnitude, and probably a lot more than that, more funding than we could get from the European Commission. They are enormously expensive pieces of work to do.

Q23 Chair: Are you saying that you cannot afford to take up the European offer of funding?

Professor Boyd: No, I am just comparing the costs associated with undertaking these studies with the levels of funding that are on offer from Europe. I am not saying that that relates to the response to the European funding question. What I am saying is that these are very big and very expensive studies to carry out and, from a public funding point of view, if you wanted totally independent public funding you would be talking about asking organisations like the Natural Environment Research Council to fund it as well as carrying it out. Bayer and Syngenta have asked them to carry it out and they have provided the funding, but otherwise the funding would need to come from a public source and at the moment that public source is not available.

Q24 Caroline Lucas: Are you making the case very loudly to Government that it should be available? There can hardly be a more important issue in terms of the role that pollination plays in terms of our food supply and the whole ecology we depend on and it worries me greatly if alarm bells are not ringing throughout Government because we cannot afford to do the research we need to do to see whether or not we are at great risk.

Professor Boyd: I think that is a fair comment.

Q25 Zac Goldsmith: Professor Boyd, just to be absolutely clear: other than writing the cheques for the research, what other involvement are the businesses going to have in these studies and the process? Cash aside, what pre-knowledge will they have? Will they be involved in setting the terms of reference? Will they have access to the conclusions of any of these studies before DEFRA or the public has it? Other than the cash, what else will they be doing?

Professor Boyd: Well, as far as I am concerned, what will be done in these studies is pretty much the same as if it was a publicly-funded study. It is being carried out and supervised—

Q26 Zac Goldsmith: You say “pretty much”, though. What is different then, other than the source of the money, in terms of the industry involvement?

Professor Boyd: I think the contractual arrangements between the people carrying out the research and the organisations funding it clearly have to be different because there are different organisations involved. I come from a background both in public science research and also in university research. If I was a researcher involved in this, I would be perfectly happy that I was being allowed to get on with this research totally independently, without my hands tied in any way at all and with every possibility of being able to speak out and also publish this research completely freely at the end of the day.

Q27 Zac Goldsmith: I think a lot of people would be able to understand why industry would be asked to pay for studies into the safety of products that they are going to benefit from selling. I have no problem with that, but what I do not understand is why then, in order to accommodate what I suspect is going to be a very clear view from those members of the public who are paying attention that this could be cynical—there could be a conflict of interest; many people will feel that they cannot put a lot of confidence in this process for the reasons that Caroline and others have already suggested—the industry does not provide the money to DEFRA and allow DEFRA to set the terms of reference and allow DEFRA to effectively write the contract for the companies that are going to be doing the work? Why not become the middleman and deal with this issue of public perception?

Professor Boyd: I personally do not think DEFRA or Government are appropriate as the middle people here. I think DEFRA or the Government need to act more as the referees of the game, rather than being involved in the game.

Q28 Zac Goldsmith: If industry was not paying for this and the Government and public were paying for it, then DEFRA would be the organisation that would set the terms of reference and the laboratories and the researchers would be answering to you. Therefore, why could this money not come via industry into DEFRA and allow DEFRA to get on with the work and remove any intervention and any involvement at all by business? That is the thing that is raising eyebrows and that is the thing that I think will shatter any confidence that people might have in this process and it seems to be me it would be very easy to deal with.

Professor Boyd: I think there is a better model than that and it is one that I have been involved with for the oil and gas industry where industry itself sets up essentially a stakeholder-run body that takes ownership of the process and the outputs and involves others from the stakeholder community in the process as well. That is what we have been encouraging Syngenta and Bayer to do all along.

Q29 Martin Caton: Professor Boyd, you said in answer, I think, to Caroline Lucas that, as a scientist, if you were doing this research you would do it in confidence that there would be every possibility of being able to speak out and every possibility of seeing your work published. Is that what you meant: there is a possibility; it is not a certainty?

Professor Boyd: Well, when you do research you are never certain of the outcome and you are never certain that you are going to get something that will get through the peer review process. You obviously design it in such a way that it is going to have robustness to allow that to happen. I think the words “every possibility” do apply because there are never guarantees at the end of the day that you are going to come up with a result that is going to have that robustness.

Q30 Martin Caton: That is not a reason why the research could not be published, is it?

Professor Boyd: It is. I would not allow publication of research that is not robust.

Q31 Martin Caton: Just to be absolutely clear, it has nothing to do with the fact that this research is going to be in the ownership of chemical companies?

Professor Boyd: Nothing whatsoever to do with the involvement of the chemical companies. It is entirely down to the scientific review process that this would have applied to it once the results come out.

Dr Little: Just to make it clear, we have every expectation that this stuff will be published.

Q32 Chair: Just so that I am absolutely clear, is it the case, as a referee, that DEFRA has not in any way tried to change the parameters of the research at all?

Professor Boyd: Not at all. The research is entirely defined by the researchers. It is a bottom-up-driven process. They are the people who are best qualified to make the judgment.

Q33 Chair: Researchers employed by whom?

Professor Boyd: By the Centre for Ecology and Hydrology. It is part of the Natural Environment Research Council. We have an independent pollinators' advisory group that has overseen the process of developing the protocols as well.

Q34 Chair: Professor Goulson, you wanted to come in.

Professor Goulson: A brief comment. Julian has already revealed that the experiment was going to need all the oilseed rape in Britain. Obviously he has already been involved in discussing the experimental design with CEH, which just illustrates that it is more than just handing over a cheque, that they are involved in designing the study.

Q35 Dr Offord: I just want to ask Dr Little if he would like to respond to that, because you seemed to—

Dr Little: It just seems like a bizarre statement. In reality we are the licence holder for the chemicals that will be used. We have to apply to get a derogation from the Government to be able to use the seed treatments in the UK. You have to get that and it has to be the company that is involved to do so. Yes, of course we know aspects about this experiment. If anybody else wanted to know aspects of this experiment I am sure that could be made available to anybody, but we have to know what is going on because we are the licence holder for the actual treatments.

Q36 Dr Offord: Thank you. That brings me neatly on to the question I was interested in pursuing. In our report on pollination and pesticides last year one of our recommendations was that the research and studies by the agri-chemical industry should be made more freely available to other researchers. My first question is particularly to Dr Little. What independent verification will there be of the research in the forthcoming trials?

Dr Little: As we have said, the trials are overseen by independent scientists. The Centre for Ecology and Hydrology has got another company involved—I cannot remember exactly the company—to go out there and find the farmers to do the researchers. I can find that out very easily, if you are interested, or you can get it from the CEH. I have just lost the thread of the question. I am very sorry.

Dr Offord: The independent oversight.

Dr Little: Okay. The independent oversight; they will be doing the initial work. As I said, the expectation is that it would be published; so there will be peer review. It will also be submitted for regulatory approval, which means that EFSA will be going over it as will all other member states, including DEFRA, and will be able to have a look at that and go through it with a fine-tooth comb.

Q37 Dr Offord: In regard to your own research, do you now allow your research studies to be made free available?

Dr Little: As I think I said at the last meeting, pretty much all of our data have either been published or presented at conferences. Are we prepared to publish them as a whole in one block? No, we are not. We explained last time that each study is somewhere in the region of €200,000 to put together. It is commercially sensitive information and what that means is that if a competitor company were able to take that information they could use that to bring a generic version of our product to the market. We also said at the last meeting that when the 91/414 pesticide legislation was revised into 1107/2009 the EU had a chance to toughen up the legislation, which would allow companies to publish their data and still have commercial control of it. They decided against doing so. No, we are not intending to publish these data as a whole. I am aware that other companies have been looking at this and have come into all sorts of difficulties in the process. Of course, individual members of the public can access the data under certain circumstances.

Q38 Dr Offord: What are those circumstances and, particularly, are there any other reasons why you would not want to publish? Is it anything other than commercial—

Dr Little: No, it is absolutely around keeping our products—let us go right back through the beginning. €200 million is what it costs to bring a product to market. Most of that €200 million is taken up with getting it through all the different regulatory studies and each of those studies is very expensive. They are very valuable to other companies; not just the simply cost of doing the study, but the time that it takes to do that study as well, because a number of these are multi-year studies. Therefore, it has a value not just in terms of money but also time and we are not prepared to give our competitors a head start on beating us up in the generics market. That would be our one and only reason for not publishing that data as a whole. As I have said, though, pretty much all of it has either been published or been presented at conferences.

Q39 Dr Offord: Mr Shardlow?

Matt Shardlow: I think there is definitely something here to consider, which is that all the neonicotinoid chemicals at the moment are outside their licence period. They are all available for generic products to be produced or I think most of them, aren't they?

Dr Little: Imidacloprid is.

Matt Shardlow: There is a relatively short period that you have to make money back on these chemicals, isn't there? As an ecologist, the environment drives the actors to act in certain ways and when there is a very short time period in which you can make back your profits on a chemical—and many of them are registered at points before they go to market. The actual underlying chemicals are registered before the products go to market. That can mean they have very short periods of time to make back money. It means that the companies that are producing the chemicals then have very little interest in the long-term effects of those chemicals or in the build-up of resistance in populations of insects and other wildlife to those chemicals as well. If we had a system whereby there was a longer period that the company could benefit from their investment that would enable them to invest more in understanding the environment impacts in the first place. It would enable them to be more open about that, for that research to be more statistically valid and hence able to be published, and it could then mean that they could plan their future income more

sustainably and aim to have those pesticides used in such a way that they are maximising the length of use of that pesticide. I think there is definitely something there to think about. Julian, you may want to respond to that though.

Dr Little: The average length of time it takes to get a product to market is somewhere in the region of 10 to 12 years. The majority of that is on environmental fate and safety, so not on efficacy and the like. It is almost all on making sure that it does what it says it is supposed to do and not anything else. Of course we would welcome a longer patent time, but I will just give you an example. When we brought to the market a new herbicide called Atlantis for the control of black grass in wheat, the first two years it was on the market we spoke of nothing else but how to use that product properly to stop resistance coming in. Stewardship to the industry is incredibly important and, you are right, making sure that we have a sustainable process and a sustainable industry is absolutely paramount to us. We live and die in the marketplace.

Matt Shardlow: Can I just make one other point, which comes back to the point he has just made about efficacy and relates to some of the evidence we have presented in our written submission that I will refer you to and the previous comment Julian made about their data being now largely published or presented at conferences? It is a bit of work that we have done, which links to another couple of reviews that have struggled to find any convincing evidence of real benefit from neonicotinoids. If you look at the European plant protection products legislation, that includes questions of efficacy as well as environmental impact and perhaps we have not been paying enough attention to whether there is measurable yield benefits from some of these pesticides as well as environmental harm.

Q40 Caroline Lucas: Just on that, can we ask Dr Little if he can name any peer-reviewed scientific publication that is in the public domain that does show that neonic seed dressings increase yields of arable crops.

Dr Little: Peer-reviewed work, not off the top of my head but you can ask farmers who previously have struggled to establish oilseed rape and they will tell you very clearly—

Q41 Caroline Lucas: Isn't that a bit odd that there is no peer-reviewed search on that?

Dr Little: Do you know, I will go back and ask the question as to whether there is or whether there is not. As I said, those farmers that use it or, on occasions, do not use it are very well able to explain to you the impact of not using a seed treatment and, of course, we will see it this autumn.

Q42 Caroline Lucas: I wanted to move on now to Professor Boyd, if I might with a question about the precautionary principle. During our previous inquiry, I think you argued that the application of the precautionary principle needs to incorporate an assessment of economic costs as well. I wonder if you could say to what extent the economic and cost considerations feature in the NPS. In particular, the concern is that cost considerations could

be used to curtail pollinator protection measures that the research might have otherwise indicated would have been useful to pursue.

Professor Boyd: I do not think that cost considerations are part of the NPS as it stands at the moment. There is a concern about pollinators and we want to try to make sure that we have the evidence base to understand how to move forward. That evidence base may eventually contain some cost-benefit analyses, but my view of it at the moment is that we are not in that position. We want to know what sort of problem we have, what the extent of the problem is, where it is happening and, potentially, what interventions we could put in place to mitigate some of those problems.

Q43 Caroline Lucas: It is interesting because in our original report the Government's response back to us was that they did not interpret the precautionary principle in the way that we did. They wanted to add into the interpretation of the precautionary principle that it only worked if you were looking at cost effective measures that might prevent worse things happening in the future. The Government, when they looked at our report, obviously felt that our interpretation of the precautionary principle might have led them into costs that they could not afford and did not want to meet; whereas I think you are saying something different. You are saying that there is nothing in the strategy that requires funding that you do not have in order to put in place the protection that might be needed.

Professor Boyd: I think before we ever get to the precautionary principle we have to understand the problem that we are faced with and that is about defining—

Caroline Lucas: That is a circular question, isn't it?

Professor Boyd: No, it is about defining what the hazard is. In other words, if pollinator populations are changing in some way or other and we have a suspicion that they are declining because of something we are doing, we need to test that as a hypothesis. If we find that something we are doing is causing that decline then there is a hazard there. We then need to articulate that in terms of a risk. Now, that is where the cost-benefit trade-off tends to start to come in because you are looking at likelihood against impact there. In the impact part of the assessment of the risk process, you are beginning to understand what the cost benefit trade-offs are, but we are a long way from that with a lot of pollinators.

Q44 Caroline Lucas: I wonder if Mr Shardlow or Professor Goulson would comment on that.

Matt Shardlow: There is evidence in data that there are declines in pollinators and that they should be addressed, but I do not know that I have much more than that to add to what he said. *[Interruption.]*

Professor Boyd: Excuse me, sorry, I will get rid of this. I apologise.

Chair: Are we sorted?

Caroline Lucas: You must have given the wrong answer.

Professor Boyd: I am terribly sorry.

Q45 Caroline Lucas: The second thing I wanted to ask you was about some measures to protect pollinators that might indeed involve costs as well as benefits for farmers specifically. Is any research being carried out to assess any economic considerations?

Professor Boyd: Yes. We have projects that are underway to look at the consequences of the current ban on neonicotinoids and what different choices will be made by farmers as a result of that in terms of both the new active substances or the old active substances they might want to bring in or different choices in terms of types of crops. That will eventually lead to an estimate of what the costs and benefits might be. Sorry about this. My phone will not switch off.

Caroline Lucas: You need to give the right answer.

Professor Boyd: Take the battery out of it.

Chair: If there is a phone that is switched on, could you please take it out of the committee room. Thank you.

Q46 Caroline Lucas: The final question was around the EU's review of its restrictions on neonics. I wondered what research is being done to help decide whether the ban should be continued.

Professor Boyd: Well, I think this comes back to the long discussion we have already had around the trials. We made it very clear in the position we took on the ban that the evidence base was very poor and we needed to build a better evidence base. As a result of that, the trials that have been put in place are a response to that. As I said before, there has been a lot of work done on neonicotinoids and I think, with respect to the field studies, in general they have never been done at the right sort of scales. We need to get large-scale field studies in place and that is what is happening at the moment.

Q47 Caroline Lucas: In terms of timing, we are confident that will deliver results in time for when—

Professor Boyd: Well, no, I have to say I am not confident that it will deliver for the 2015 decision that the European Commission is going to make because we are governed by the seasonal cycles here. The earliest we can get these experiments in the ground is this autumn. They are going to take at least a year to deliver any results at all. My suspicion is that they will need at least two years, possibly even three years, of work in order to be able to come up with a robust outcome. That takes us down to the 2017-18 timescale to be able to get the results out.

Q48 Caroline Lucas: Can we look forward to another major EU row at the end of 2015 when the evidence base has not produced it?

Professor Boyd: I obviously hope not, but I would not like to guarantee one way or the other.

Professor Goulson: There is a very serious chance that these new experiments that are being done are based on a slightly false premise that the main exposure of bees to these pesticides is from flowering crops. We have been doing work funded by DEFRA—thank you, Ian—that is looking at other sources of contamination, sources of exposure of bees.

There is reason to believe 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. That is the main mode of action. They are taken up by the crop normally, but if they are in the groundwater they will be taken up by hedgerow, trees and shrubs and wildflowers in the field margin. I have been suggesting that this is a quite likely scenario for some years.

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 when they feed on sallow blossom through to the summer. It is not just for two or three weeks, which I would hazard a certain bet is what these experiments will be addressing. In fact, we do not have any handle on what this lifetime-long exposure to a cocktail of pesticides is doing to bees.

Chair: There we must leave the first panel. Can I thank each of you for coming along and invite our second panel to come in and take your place, hopefully without mobile phones?

Professor Boyd: Yes, I do apologise. I am very sorry.

Examination of Witnesses

Witnesses: **Alick Simmons**, Director & Deputy Chief Veterinary Officer, Department for Environment, Food and Rural Affairs, **Liz McIntosh**, Strategic Policy - Pollinators and Plant Health Team, Department for Environment, Food and Rural Affairs, **Dr Chris Hartfield**, National Farmers' Union, **Sandra Bell**, Friends of the Earth, and **Marilyn Haines Evans**, Chair of Public Affairs, Women's Institute, gave evidence.

Q49 Chair: I think everyone who has joined our second panel was in the committee room for the earlier session, so I will take that as read. I thank each of you for coming along. It is good to have such a wide cross-section of different stakeholders. Many of you will have been commenting in respect of the consultation, as we have already heard from the scientists from DEFRA. I thought it might be useful if I gave each of you a very quick sentence or two to comment and give pointers to our Committee on what you have just heard in the preceding evidence, starting with you, if I may, Dr Hartfield.

Dr Hartfield: The only thing that I would add to what we have heard in the first session is the NFU's view on what the strength of the National Pollinator Strategy is. We see it as an evidence-based strategy. It is based on a very comprehensive status report, which is very detailed. That is one of the strengths of it. It goes through the research and our current understanding and it identifies what the gaps are and where there are uncertainties in that evidence base. To our mind, it does a good job of then balancing action to fill those gaps in terms of what research we need and then taking action where we have some good evidence to take action. Perhaps most importantly as well, it creates an opportunity and a

framework to take more action as we learn more. Basically, as we find out more and we learn more, it provides opportunity to act on that.

Liz McIntosh: I would just like to comment a bit more about the responses to the consultation. We had over 300 responses and there were many offers of help to DEFRA in those responses in terms of people wanting to help us get out the call to action message and to engage local communities in doing things for pollinators. There were lots of concerns about habitat protection and connected habitats. Pesticides were one of the regular features in the comments and there were comments about CAP reform and incentives to farmers to do more things for pollinators. In addition, there were some comments about the research, which we have discussed in the previous section, and also about more on education and communications to make sure that we did get people doing things for pollinators because there is a great opportunity to do that out there. That is all I would like to say.

Alick Simmons: As you are probably aware, I am the director that is going to be responsible for getting this strategy out and implemented. I wanted to reinforce what Liz has said about how pleased we are about how much engagement has been going on right from the start but also through the consultation period. What I noticed from the discussion earlier on was very much an emphasis on pesticides, but we think a great deal of the emphasis, as well as reflecting people's concerns about the use of pesticides, should also be on habitats and land use, which I think is reflected in the comments that Chris Hartfield made. We are keen to ensure that the strategy is properly balanced and reflects those points.

There is one point that I would quite like to come back on from the previous session, which was about the EU bee surveillance question that was asked about why we withdrew from that. It is quite simple. We withdrew because the approach that was made to us to follow on from the first year engagement that we had came too late and we had redeployed the staff. Had we taken up that offer, not only had we redeployed the staff and we would have to reengage from doing other things, but we would also have done the work at a period when the bees were least active, in other words from the autumn onwards. We felt it was not going to be constructive to engage. We had already completed a two-year surveillance programme, a UK programme, before that; so we felt we had enough data. We would like to follow up with a more detailed note for you.

Q50 Chair: Right. Can I just check, is that the EPILOBEE programme?

Alick Simmons: That is correct.

Q51 Chair: Just before I move on, in respect of the consultation, is it intended that DEFRA will publish all the responses to the consultation?

Alick Simmons: Yes.

Q52 Chair: When can we expect those to be in the public domain and will it be—

Liz McIntosh: I will take that point. There will be a summary of responses that we will publish alongside the strategy when that is ready and people can have access to all the responses to the consultation should they wish to see those. When we issue consultation

documents, we ask for people's permission to let those responses be publicly available, so that is normal procedure. People can see those responses, but we will have summary responses that we will publish with the strategy.

Q53 Chair: But not in advance of the strategy?

Liz McIntosh: No. We may well do, but at the moment our current plans are to publish them alongside the strategy.

Q54 Chair: Okay, thank you. Sandra Bell, would you like to comment?

Sandra Bell: Thank you, and thanks for this opportunity to talk to you. We certainly welcome the fact that we have a draft NPS and welcome the opportunity to carry on working with DEFRA to improve it. We do see that there are some quite significant gaps in it and I hope we can discuss those further, particularly in the areas of the ambition for farming and for planning, the gaps in terms of land use planning policy.

The point I wanted to come to in terms of the previous panel is that in all the talk about the research that is going on I think the one thing the NPS needs to prompt is much more proactive research into alternatives to insecticides, including the neonicotinoids. I agree with Matt Shardlow that we have good evidence on the problems with neonicotinoids and they are not the silver bullet for farmers that we keep being told. In fact, DEFRA told this Committee at its last inquiry about the existing problems with resistances developing to some of the neonics.

In fact, four years ago, scientists at Rothamsted were doing research on oilseed rape and they were looking at what would be the best replacement for pyrethroid insecticides and they concluded that neonicotinoids were completely the wrong route to take. They said that insecticide resistance presents a significant threat to the sustainability of the oilseed rape crop and to farm incomes. Instead, they looked at three ecological approaches specifically for controlling pollen beetles. These included much better monitoring of the pest problem so you are targeting control. They looked at trap dropping and at biological controls and their conclusions were that these approaches offered a much better prospect of achieving long-term sustainability of oilseed rape production than insecticide application.

This is where we should be putting public money into research, into developing real alternatives that are going to maintain yields for farmers and provide a safe environment for our pollinators.

Q55 Chair: Right, thank you. Last but not least, I know that the Public Affairs Committee of the Women's Institute has a view on this, so we would welcome your comments on the evidence we have just heard.

Marylyn Haines Evans: Thank you. We welcome DEFRA's work and leadership on developing the NPS. We are certainly starting to see evidence emerging from the Insect Pollinators Initiative, which the WI called for initially in 2009. We urge DEFRA to continue the collaborative approach that they have set out to ensure that this is complemented by funding and the independent reviewed research in the same vein.

I would echo earlier comments about funding. It is not clear to me that it is addressed as well as it could be. Just to respond to Professor Boyd's comments on baseline monitoring and research, 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.

Q56 Mrs Spelman: I would like to come to the priority policy actions, which are contained within the National Pollinator Strategy. These are based primarily on voluntary actions co-ordinated with farmers and NGOs. I would like to hear from perhaps Dr Hartfield, Sandra Bell and Marylyn Haines Evans. Do you think voluntary actions are going to be sufficient to achieve the goals of the strategy? What happens if they are not?

Dr Hartfield: I think there is good evidence that voluntary measures can be successful. One of the campaigns that is mentioned in the strategy is the Campaign for the Farmed Environment and this is basically a voluntary initiative of the industry. It has been running for about five years and there are 677,000 hectares of unpaid environmental measures that have been put into place through that voluntary scheme. I think that is a good starting point that voluntary measures can be successful.

Q57 Mrs Spelman: Did that worry you, though? Could I just interrupt you and ask a key question? At the end of the last set of evidence, almost the last thing that was said, deeply worrying, that the evidence that Dr Goulson had was that the neonicotinoids through the groundwater system might be taken up in precisely the plants that might be planted to attract pollinators under the Campaign for the Farmed Environment scheme. Did that worry you?

Dr Hartfield: We are diverging slightly, but I think on neonicotinoids we still need to see the kind of evidence that Professor Boyd referred to, which is to see whether these harmful impacts that we observe in the studies that are based on artificial dosing occur in bees that are allowed to naturally forage within treated crops and also the adjacent habitats. The reality is we do not have that information.

One thing, going back to the first session, that I was disappointed not to hear a mention of was the restatement of the evidence that has been produced by the Oxford Martin School. Throughout the previous inquiry of this Committee and a lot of the discussion and debate around neonicotinoids, one of the things that has been called for is an independent review of the evidence in this area. Here we have, that has been recently published, an independent review of the evidence in this area. If I remember correctly, it concluded in one of the last sentences that there is a limited evidence base for policymakers.

Q58 Mrs Spelman: Would either of you like to comment on whether you think the voluntary approach is going to be sufficient? What happens if it is not?

Sandra Bell: We certainly think there is a place for voluntary measures. There is a place for civil society taking action, absolutely. We hope the NPS will encourage more of that, but we are also very concerned by the very heavy reliance on voluntary action to take this NPS forward. We do not see that the Campaign for the Farmed Environment, for example, has made a huge difference so far to the resources around pollinators in the countryside.

We are now faced with, unfortunately, a new common agricultural policy that is going to do probably less for our pollinators than the previous one, so we have less there for the CFE to promote anyway to farmers. We really need to look very seriously at how our pollinators can be helped in farming. A lot of the existing schemes, whether it is the CFE or the pesticides voluntary initiative, are not really interested in the real transformation that we need to see because that needs to happen across the whole farm, not just around the edges. We need to see better diversity in cropping, for example, to help our pollinators. We are concerned about that.

I just want to also briefly touch on planning as well. We have heard a lot about the issues with farming, but we are still losing pollinator habitat, important wildlife sites, particularly the ones with lower designations. They are being lost to build developments and that does not necessarily have to happen. With the right steer from Government through planning policy and through planning guidance, we could have much more emphasis placed on biodiversity. At the point at which things like strategic housing assessments are taking place, we need much better guidance to developers on incorporating pollinator habitat and green infrastructure.

We do welcome the fact that DEFRA has approached us and said, “We would like to hold some workshops with developers and local authorities to try to improve the way development happens and respects pollinators”. We do welcome that, but unless it is built into actual planning guidance, planning policy, with a strong steer through the channels that the developers and local authorities look to such as the planning practice guidance, it is not going to change the way developers behave. A few really forward-thinking developers will see that it is part of good quality development, but for it to have the widespread impact it needs it has to be built into that official guidance.

Q59 Mrs Spelman: Thank you very much. Would you like to comment on this?

Marylyn Haines Evans: Yes. I would just like to say from the NFWI’s experience that voluntary agreements have proved to be flimsy vessels for implementing policy as we have seen in recent years with plastic bags, the dairy market and the grocery market adjudicator. They set out with the best intentions but we do not always get to where they want it to be. Yes, I agree with Sandra that we all need to be singing from the same hymn sheet here. Especially with planning, somebody can go off on one tangent but if we are not all following in the same direction—certainly we need to look at planning because that is most definitely affecting the habitats.

Q60 Mrs Spelman: I do not want to preclude DEFRA from commenting on this question. You may well have a view, especially about the possibility or necessity for a plan B. I do not want to prevent you from—

Liz McIntosh: I could start here. It is worth pointing out, of course, that the pollinator strategy is not just starting with a blank sheet. We are building on a range of policies across biodiversity, across agro-environment schemes, honey bee health programmes. DEFRA spends a lot of money every year doing things that are good for the environment, so the pollinator strategy is not just starting from nothing. There are regulatory requirements under there, for instance, under the Natural Environment and Rural

Communities Act 2006. There are biodiversity duties for public bodies. There are all sorts of things in there that are firmly a foundation for the strategy.

What we are doing on top of all those things is trying to really drive home the message that habitat loss is a big driver of change for pollinators and we can do a hell of a lot through the priority actions. Something like 12 of the 18 priority actions are all about really trying to provide resources for pollinators. It is not just flowers, it is things like, "Have you thought about letting your nettles and dandelions grow freely in your gardens?" because that is great for pollinators. Untidy is good for pollinators. There are lots of messages that we can do and under a unified call to action that is what we are hoping to do.

On the planning side, just to come back to that, again there are loads of things going on at the moment that are helping provide additional information on the planning side. The open mosaic habitat inventory, which DEFRA and others have put together, was launched recently and that is providing further information for planners on how they can protect some of those sites in brownfield sites.

On a final point, in the strategy we are not just working at the local authority level. We are trying to work with all the networks that are out there already who are helping to get messages across. We have people like the Town and Country Planning Association signed up to getting the message out when we have this message and all this advice. We have CIRIA, the construction industry information service, which is helping provide advice and is really on side with the call to action and helping us with the strategy. We are talking to the sustainable building certification people at BREEAM who can really make changes. We do not need to have to go in at the top or the top level, DCLG or local authorities. We can creep out in many ways to get the message out and to make changes.

Q61 Mrs Spelman: Alick Simmons?

Alick Simmons: Well, the plan B you mentioned, Mrs Spelman, the purpose of a lot of the strategy, particularly in the early time, is to get a better database about richness, abundance, distribution, which in many areas is deficient. There are some 1,500 species of pollinators and, quite frankly, we do not know how many there are, where they are and how rich they are. In order to be able to establish that, we have to do some work. In addition to that, it will be linked to land use so we have an idea about where relative abundances are under pressure and, on the strength of that, that will start to influence the way in which we develop policies for land use and other aspects of planning and so forth over time.

Q62 Mark Lazarowicz: You mentioned the various networks you have been working with. This is obviously the national pollinator strategy for England, but there is also work going on in Scotland and in Wales. Can you tell us how you are linking the work being done in those Administrations?

Liz McIntosh: Well, we have already been working with the Scottish Government and with the Welsh Government on a number of initiatives like the healthy bees plan on honey bees. Since 2009 we have worked with the Welsh Government on that. We funded with the Scottish Government and the research councils the £10 million programme on the Insect Pollinator Initiative. We have worked closely with those organisations already, but we are going to have clear links with them as part of the governance arrangements for

implementing the strategy. We are already talking to the Welsh Government about the lessons they have learned from putting together their strategy and starting to implement it, because they are a year ahead of us, so we hopefully will have lessons from them to help us as we get down to implementing the strategy. As part of our governance, we have a recognition that we will work with the devolved Administrations.

Q63 Dr Whitehead: I am not entirely clear, particularly from the draft programme, how it is intended that the wider public can assist with realising the aims of the strategy. Clearly, the call for action follows, but that is really a call for action for organisations, NGOs, interested bodies. How does the wider public get involved in this process?

Alick Simmons: I am going to ask Liz to give a bit more detail, but the call to action is potentially aimed at anybody that has access to land in which pollinators could thrive. As Liz has already mentioned, the more untidy our gardens are, the more likely we are to get pollinators in them. It is not just aimed at organisations; it is aimed at the general public as well. Of course, as we were already hearing, we expect to use citizen science in collecting some of the data as well.

Liz McIntosh: Just to add, yes, we are keen to engage the public on the call to action. We are developing an animation, a short five-minute animation, to start that engagement process. The call to action is a simple message but underneath it there are two tiers. The first tier is a set of five short, simple actions that everybody can take to help pollinators, whether you are a gardener, whether you are a local authority planner, whether you are on a building in a big construction site. That second tier then will be underpinned by further detailed guidance and advice that we are developing with Natural England and with Fera so that once we publish the call to action we will have this initial advice and that initial advice will grow over the next one to two years as we get further evidence about what different types of land managers can do to help pollinators. We are trying to produce tailored advice and that tailored advice will include advice to the public. We are very pleased about all the support we had in the response to the consultation that said people really want to help us to get the message out. We got that enthusiasm and we really want to build on that enthusiasm and buy-in already from the public to help us get the message out.

Q64 Dr Whitehead: In the draft strategy itself, in the period up to the call for action, the wider public actions are suggested as growing more flowers and spraying safely.

Liz McIntosh: That was a holding line, that is right. Forget about that one now because we are obviously revising and updating the strategy in the light of the consultation. The five actions, do you want to know what they are? Well, it is not surprising what the first one is. It is, “Grow more flowers, trees and shrubs” because one of the big messages we need to get out there is that pollinators need pollen and nectar. They need pollen as a protein so they can help produce the next generation, and they need nectar for sugar supplies to help them buzz around and do their thing. So, grow more flowers, trees and shrubs throughout the year but particularly from March to October when pollinators are active. There is no point really just having a load of wildflowers coming into life in June/July. That is not really enough. You need to do far more than that.

The second action—this is all still emerging; it will be in the final version of the strategy, I should add—is, “Leave patches of land to grow wild”, picking up on my point earlier about nettles are good for caterpillars because it is not just pollen and nectar for adult pollinators, caterpillars at other life stages need resources as well. The third action is, “Cut grass less often so that plants can flower”, and that is again the idea that some species that are in grass mixes can flower and produce pollen, like dandelions, for pollinators. Then the fourth one is a bit more on the habitat side, “Do not disturb nests and hibernating insects” because pollinators live in all sorts of strange places and hide in bare bits of land in your garden. You have probably seen some at the bottom of a wall, flying out of some old mortar you have not put back. Leave opportunities for pollinators to nest. You can buy stuff, I think, at B&Q and other places, to help, bee hotels and things like that, but you do not need to that; you can do things in your own garden to help.

The fifth message is very much a pesticide message. The Spray Safely one that we had in the draft strategy was very much a holding position. The message now on pesticides is to think very carefully before you consider using pesticides. It says to minimise the use of pesticides and to think about using alternative activities like barriers to prevent pests. It also advises that, if you do choose to use a pesticide, follow the label instructions. We have changed that message into it being a slightly firmer message about what to do about pesticides.

Q65 Dr Whitehead: Bearing in mind what is happening on the wider basis, is there any case for the non-use of pesticides as opposed to a more careful use that might be promoted for private gardens and amenities?

Liz McIntosh: What: that we should go a step further and say, “Do not use”? I think that is a difficult thing for us as DEFRA, as the regulator, because we regulate pesticides and they are authorised following the regulatory procedures. I do not think we could say stop. We have tested that message about thinking carefully and thinking about alternatives on our core stakeholder group that we have been working with over the last few months to develop and finalise the strategy and they were quite happy with that line. I do not think we can go as far as saying, “No, stop using pesticides”, but there are other opportunities. There is some work on IPM, integrated pest management, for the amenity sector that DEFRA has been funding and the results of that research will be coming out shortly.

Q66 Dr Whitehead: Ms Evans, is it your view that the proposals set out there do represent the sort of public outreach that you might anticipate would be the case as part of that?

Marilyn Haines Evans: Yes. Indeed the NFWI is very positive about the initial proposals for the call to action. We must be take care that it has to be multi-channel communication and that those will need to be tailored to suit different groups. Social media channels like Facebook and Twitter are fine for reaching younger people, but more traditional methods will still have to be introduced so that we get the message out to the whole of civic society.

In terms of insecticides, obviously I am not a scientist. I am a farmer. We do farm 300 acres, part of which is in an SSSI area, and I know, as a farmer, that we have to log everything that we use, be that drugs we give to the animals or anything that we use as sprays. They have to be logged in the logbook and somebody comes to check the logbook,

but certainly, in terms of insecticides for gardens, I think perhaps it could be made more difficult when you go and purchase them. They are readily available; no questions asked, really. Perhaps that could be an area to be looked at. That is all I have to say on it.

Q67 Dr Whitehead: Ms Bell, did you want to come in?

Sandra Bell: Yes. It is good to see that message strengthened, although we think that it would be much better to go even stronger and say, “Avoid use in your garden”. I would suggest that that should be a stronger aim for local authority amenity use as well, in parks and gardens. The European Commission sustainable use directive on pesticides does require member states to minimise amenity use of pesticides and I would question whether at the moment the UK is following that properly. The wording is that member states should ensure that the use of pesticides is minimised or prohibited in certain specific areas and that includes things like public parks, school grounds, particularly wherever the public might be exposed to pesticides. There is a human-health element to that as well as the environmental protection element.

Dr Hartfield: Can I just make a quick point? I would draw the Committee back to the evidence. We have heard of some of the challenges around the evidence with respect to pesticide use on farmland. My understanding is that there would be even less evidence, if any evidence at all, of pesticide use causing particular problems for pollinators within gardens. The products that gardeners use are a much weaker formulation than professionals are allowed to use.

I would also just draw your attention to the fact that, of the 160 products registered for use as garden pesticides, 75% are based on active ingredients that you are permitted to use in organic production. A lot of those bug sprays that you will find on retailers’ shelves are labelled as organic. If you were to tell or recommend to people, “Do not to use pesticides”, you would start getting into a very complex area. Do you say, “Do not use pesticides that are based on a synthetic chemicals, but it is all right to use the pesticides that are based on organic chemicals”? It is a much more complicated situation than you might think.

Q68 Mike Kane: I was just considering my own practice in my own back garden. It is not 300 acres, it is less than 30 square meters, but since I got my three Rhode Island Reds I now no longer use pesticides in the back garden, which is probably a very good thing. Anecdotally I seem to have a lot more wildlife inhabiting it. My question comes back to Europe. The common agricultural policy: does it help or does it hinder?

Sandra Bell: As we have seen the details emerge of the CAP scheme and the current CAP agreement I think it is uncertain that it is going to deliver anything much for pollinators. The new agri-environment schemes—called NELMS I think—are only going to cover something like 30% to 40% of farmland. At the moment agri-environment covers 70% and because of cuts in funding that is going down to 30% to 40%, which leaves a lot of farmland not even covered by agri-environment schemes. Even within that 30% to 40%, clearly they are not all going to be schemes focused on pollinators.

Greening, then, which is the scheme that will cover a lot more farmers, has been watered down so much that it is probably more green-wash than greening, to be honest, and, again, there are not that many specific measures in there that will benefit pollinators. It will only

apply to 5% of farmland. Again, we are seeing a lot of farmland that is not covered by CAP measures.

The role of the NPS versus existing policy I suppose is always going to be a tricky one but, in terms of what the NPS could do to try to influence the remaining decisions on CAP, a lot of decisions have been made but there could be more specific inclusion; for example, in the greening schemes you could include specific ecological focus areas that are meant to cover 5% of the farm. All the details on those have not been released on those yet, so there still might be some potential to try to at least ensure that there are some specific requirements in there, some specific options for pollinators. That would need to go alongside management though.

This is one of the problems. If you just say, “We need a wildflower strip or a buffer strip”, how is that going to benefit pollinators unless there is good guidance and advice on how that strip is managed? That is what the scientists tell us, that you need good management of those schemes when they are introduced. We have the problem of not much in the way of agri-environment or greening and also of how you get good practical advice out to farmers on getting the most out of those for pollinators.

One of the things that we are suggesting is that we do need some Government funding to go into improving the advice that is given to farmers on boosting pollinators and biodiversity more widely. We used to have a pretty good farming and wildlife advisory scheme, which was cut. Some areas of the country have it and some do not, so it is pretty random as to whether as a farmer you can access that wildlife advice.

Farmers have said to us that they are frustrated. They see some good research and science going into how to help pollinators and the benefits of pollinators to their crops and they see there is a disconnect between that and what they are getting in terms of information and practical advice. We think there is a need for improving the advisory services on biodiversity that go to farmers. At the moment, unfortunately, a lot of the advice that farmers get is not really independent because a lot of agronomists are linked to pesticide companies. That is a problem. What they need is good independent science-based advice.

Q69 Mike Kane: Sandra, are you saying it is a hindrance?

Sandra Bell: Sorry?

Mike Kane: The question was, is it a help or a hindrance?

Sandra Bell: I think it is a missed opportunity to do a lot more for our pollinators.

Q70 Mike Kane: My next question was about focus areas but I think you have dealt with that. Forgive me, colleagues, can I just go back to something? Did we bottom-out about how the strategy is funded earlier? I did not get that we did.

Alick Simmons: There is a modest amount of money directly attached to strategy, mainly for publicity and collecting evidence of the type I mentioned a few minutes ago, but, as the strategy sets out, there are a number of areas, for example, while I note the comments about CAP, nature improvement areas and other things, which are all part of the drive towards improving the position of pollinators. There is an entire list of them here.

Q71 Mike Kane: In my mind I have a pie chart. Just tell me the cake proportions.

Alick Simmons: If you want it in that sort of details we would have to provide it.

Chair: We would be happy with a formal written note

Alick Simmons: Yes, I think we can do that for you. That might be the best thing.

Q72 Caroline Lucas: I want to turn to integrated pest management because the strategy considers that greater uptake of IPM should be a priority. Do you think there is a common shared understanding of what IMP means? It seems that it means lots of different things to different people. Certainly the EU definition appears to encompass organic farming, for example, and yet, as far as I can see at least, the strategy here does not. What are your thoughts about common definitions and how it is framed in the strategy?

Liz McIntosh: This is an issue and you are right; it means different things to different people. We are rather stuck with the sustainable use directive definition because there are requirements we have to meet under that directive.

Q73 Caroline Lucas: Is that the one that does talk about organic farming?

Liz McIntosh: I have the definition in front of me and it does not talk about it. It does not mention it specifically, I don't think. It does later, I think.

Dr Hartfield: It does say, "Sustainable, biological, physical and other non-chemical methods must be preferred to chemical methods if they provide satisfactory pest control."

Liz McIntosh: I think that is something we can address in the final version of the strategy. We can get further definitions. One of the actions in the strategy is to promote IPM, particularly for crops that are good for pollinators. We are talking to our pollinator evidence advisory group about whether or not we need to do some work; go away and pull out the simple actions that farmers can take that are relevant for pollinators from that big, wide toolkit of what IPM is, because it is a massive toolkit.

Q74 Caroline Lucas: When Dr Hartfield clarified the quote, it does not seem to take us much further, does it? Presumably there will be lots of debate about whether or not non-chemical measures are providing whatever the wording was that you have just said.

Dr Hartfield: Effective control.

Sandra Bell: Are you changing the definition, because in the NPS the definition is not the definition for the Sustainable Use Directive.

Liz McIntosh: Isn't it? I thought it was. I thought I had used that. I will look at it.

Sandra Bell: The Sustainable Use Directive very—

Chair: One at a time, please.

Sandra Bell: Sorry. The Sustainable Use Directive very clearly sets out that member states should take all necessary measures to promote low pesticide input pest management giving, wherever possible, priority to non-chemical methods. That is there in the definition and the NPS definition does not talk about minimising use of chemical pesticides. It talks about levels that are economically and ecologically justified.

Q75 Caroline Lucas: That is a very different thing, so if we could have it based on the EU that would be marvellous.

Liz McIntosh: We will do that. I will take that away.

Q76 Caroline Lucas: Excellent. Linked to that I wanted to ask you if you think there should be targets for reducing pesticide use and just to reflect on the fact that it is quite an ambitious goal, given that, as I understand it, in some fields at the moment we are getting 20 different pesticides per field per year being used. If there should be targets, how would you also promote greater progress towards meeting them?

Liz McIntosh: If I remember rightly this is something that came up in a great deal of detail in your report last year and I think our view remains the same. Use reduction targets are not effective in reducing risk.

Q77 Caroline Lucas: Can I see what the others say about that? Is there any difference of view along the table?

Dr Hartfield: Basically, my understanding is that the National Pollinator Strategy with respect to IPM, it uses the definition that is embodied within the Sustainable Use Directive. To be quite clear, our understanding of that is, with respect to pesticide use, it talks about minimising the risks associated with pesticide use rather than minimising use of pesticides per se. That is the definition. You are right; there is no universal agreement on what IPM should mean. I think that is where some organisations disagree with that Sustainable Use Directive definition of IPM because they consider it should retain reduction targets and it should be about reducing pesticide use, but it not a watered-down definition. We have already mentioned that it talks about using alternative techniques if they can be shown to be as effective as what we are using currently. It talks about crop rotation. It talks about monitoring crops. It talks about only using pesticides in response to pest thresholds. It talks about balancing your input in order to minimising pest and disease risks. It talks about biosecurity. It talks about a whole suite of measures, so it is by no means a watered-down definition of IPM.

Alick Simmons: As some of you might have noticed, I am a veterinarian by trade and this notion of integrated pest management sits well with the approach we are taking in respect of disease control in livestock where you will use the right medicines at the right time, using the right dose, and you monitor its use carefully, but you also make sure that the systems in which you grow the animals are appropriate for the environment and appropriate for the business in hand. The thing about it is if you start to prescribe in such a way how you would approach this, then you will almost certainly fail. It needs to be done bespoke on the basis of the circumstances on that farm, whether it happens to be plants or animals. An integrated approach is important, but I think if you define it rigidly in advance then the flexible approach that you need to have in order to make sure the approach is appropriate for the circumstances that you are dealing with—it does need to be done that way.

Q78 Chair: Ms Bell, you wanted to come in.

Sandra Bell: Yes, just to answer the question about targets. Friends of the Earth would support the use of pesticide reduction targets as a further incentive for reducing pesticide

use, but of course that would absolutely have to go hand in hand with the kind of research and development I was talking about earlier, into alternatives so that the farmers are given alternatives to those products. There seems to be a lot of fear around the idea of reducing pesticide use and maybe that does partly go back to the fact that agronomists are perhaps too linked to pesticide companies and, therefore, that is the advice they are giving farmers all the time. It is just interesting when you look at the research that has been done in France and in the UK as well, there is an Endure project that scientists and farmers both were involved and they found that a 50% reduction in pesticide use is possible in a wheat/oilseed rape rotation and that was using a combination of different farming methods, things like more diverse crop rotations, but also new technologies, things like much more accurate pest monitoring. I think that is the other thing we would say about it. A pesticide reduction target could be a catalyst for more innovation in how we control pests and diseases and looking for new solutions for the future, not just relying on the same regime we are using chemical pesticides.

Marilyn Haines Evans: Yes, I would like to echo what Sandra has said. The pesticide industry, as we have heard several times already today, said that farmers will be hit by the moratorium on neonicotinoids. However, it also presents, and I agree, an opportunity for science and government, alongside farmers to innovate and seek new positive solutions to crop protection.

Q79 Caroline Lucas: Would you have them to be mandatory or voluntary, those targets?

Sandra Bell: The targets, we would say, mandatory but obviously with that support backing it up to help farmers to adjust to it.

Chair: I am very conscious that we are about to move to a vote down in the House of Commons, so I do think at that stage I do need to bring the proceedings to a close. If you have any further comments that have been raised during the course of our session this afternoon please feel free to write formally, but can I thank each of you for coming along and giving evidence this afternoon. Thank you.