

# Science, Innovation and Technology Committee

## Oral evidence: Insect decline and UK food security, HC 326

Wednesday 29 November 2023

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Members present: Stephen Metcalfe (Chair); Dawn Butler; Tracey Crouch; Rebecca Long Bailey; Carol Monaghan; Graham Stringer.

Questions 260-323

### Witnesses

**I:** John Holmes, Director of Strategy, Natural England.

**II:** Rebecca Pow MP, Parliamentary Under-Secretary, Department for Environment, Food and Rural Affairs, and Dr Rachel Irving, Deputy Director for Chemicals, Pesticides and Hazardous Waste, Department for Environment, Food and Rural Affairs.

Written evidence from witnesses:

[Natural England](#)



## Examination of Witness

Witness: John Holmes.

Q260 **Chair:** Good morning and welcome to our first witness. Thank you for joining us for this, the final evidence session of our inquiry into insect decline and food security. Could I ask you briefly to introduce yourself and then say a little bit about the role that Natural England plays in the conservation of UK insect species?

**John Holmes:** My name is John Holmes. I am strategy director at Natural England with particular responsibility for species recovery and protected areas.

Natural England's vision is one of thriving wildlife for nature and people, and the way we do that is through forming partnerships for nature, so we are involved in insect conservation in many different ways. I could perhaps characterise that as: conservation on particularly important sites for insects—protected sites like sites of special scientific interest; encouraging, advising and helping conservation in the wider fabric of the countryside through, for example, advice to farmers and encouraging local action through things like local nature recovery strategies, so that the wider environment is more permeable to insects; and focused work on species recovery on particular species that need a boost to recover.

Q261 **Chair:** Excellent. Do you do that just to achieve your statutory aims and the statutory aims of the Environment Act 2021, or do you take your remit wider than that?

**John Holmes:** We are increasingly focused on the Environment Act statutory aims, but what that Act has done is lift what I might call traditional, protectionist statutory aims—to look after this species here or that site there—out into nature recovery for the whole country. In that respect, the Act provides a framework for nature recovery, but we do look beyond that.

Q262 **Chair:** What support do you need from Government to be able to deliver those aims?

**John Holmes:** First, we need consistent and sustained funding. Actually, we have seen a good rise in our funding in recent years for things like protected site monitoring, for example, where we have been able to increase our staffing, so I think resourcing feels good. I would perhaps slightly qualify that with the need to sustain revenue resourcing, so that we can sustain a solid staffing and skills base to make sure that we can react to the needs of delivering the Environment Act.

The other thing is involvement in that sort of partnership working. We work closely with DEFRA on interpreting what needs to happen under the Environment Act and on interventions that help nature.

Q263 **Chair:** Are there any actions that the Government specifically can take to



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support you in reversing the decline of insects, or does that come under the wider remit? We have to make recommendations to Government; what should we say to them on your behalf?

**John Holmes:** For insects and in particular pollinators—the subject of your inquiry—the national pollinator strategy that has been running for the last 10 years has really lifted the attention of both the public and farming on pollinators. It is about pressing on with the delivery of those things and increasing and consolidating the monitoring of things like pesticides in the environment. We published a report this year on ways to do that by building on existing schemes, and learning more about the impacts of that and treating pesticides more effectively would definitely help.

Q264 **Chair:** If you get that support, do you think that you, as one of the lead agencies involved in this work, can reverse the decline of insects by 2042? There is the killer question.

**John Holmes:** I think Natural England can be a core part of it, but the environmental improvement plan effectively says that the whole of government and the whole of society have to be all in for nature recovery everywhere. Natural England can be a key part of that with support and by being in those partnerships, but we have to see a step change in the adoption of what is in the environmental improvement plan right across government, as well as the funding that goes into that not only across Government, but locally through local authorities.

Q265 **Chair:** When you say “right across government”, presumably you don’t just mean central Government. Do you mean local government as well?

**John Holmes:** Absolutely. It has to be the whole of society. For example, one of the key points in the Environment Act was the introduction of local nature recovery strategies. We have always worked with local authorities on where the best place is to do nature recovery, but now, statutorily, there needs to be 48 of those plans that really spell out where things need to happen. That can make links to measures like the new biodiversity net gain requirement, so it can spell out where nature recovery can be done, where money can flow into nature recovery and where it can be a really good investment, compared with the old protectionist approach and trying to resist development. Actually, you can put it in the right place and use the gain from that to really recover nature.

**Chair:** Brilliant. Thank you very much.

Q266 **Rebecca Long Bailey:** Thank you for speaking to us today. Why were major insect groups that are important for UK food security, such as wasps and bees, excluded from the 2022 red list for England?

**John Holmes:** Those lists need to be compiled from species and species groups for which we have good evidence. The species and species groups that are included are the ones where you have evidence that enables you to make a good judgment in the red lists.

Q267 **Rebecca Long Bailey:** Do you expect wasps and bees, for example, to be included in future red lists?



**John Holmes:** They are ones we are likely to look at—I say “we” but we do it in partnership with the taxonomic lead organisations for that. The focus on pollinators, wasps and bees, suggests that we would want to look at those.

Q268 **Rebecca Long Bailey:** How does their absence from the 2022 list affect the UK’s biodiversity targets as they stand?

**John Holmes:** The indicators could show progress or not, but actually could just not be sensitive to those species, so we need to use other methods—perhaps in-depth ecological studies—and what is happening to particular groups. Also, the biodiversity indicator on pollinators, for example, can be used to supplement what the indicators say in the environmental improvement plan.

Q269 **Rebecca Long Bailey:** In your view, is the national pollinator strategy successful?

**John Holmes:** It is successful in raising awareness and prompting action—the Government have backed and funded many actions there. The 10-year strategy, as I said, needs to be followed on with a continuation and perhaps emphasis on certain things. Terrestrial monitoring of pesticides, for example, does not happen comprehensively at the moment, and that is something that we think should happen. That could lead to different regulation and increased regulation of some different routes for some pesticides.

Q270 **Rebecca Long Bailey:** What were the main challenges in implementing the strategy?

**John Holmes:** Co-ordination of effort. The strategy was created because effort was dispersed and not co-ordinated. I think that has actually been one of the great gains of the strategy. Now, it is easy for me to find the way that I as a citizen can go out and monitor pollinators. It is easy for me to say to my neighbour, “This is how to do it if you want to join in,” so actually that has been a success in a relatively short time.

Q271 **Rebecca Long Bailey:** Excellent. What key policies or changes would you like to see in the update of the strategy due next year?

**John Holmes:** Comprehensive monitoring of pesticides in the terrestrial environment. It is done in the water environment. There are insights in the terrestrial environment but, as I say in our publication, there are some options that Government could take up to enhance some of the monitoring.

We run a wildlife incident scheme, for example, where suspected poisonings get investigated alongside the Health and Safety Executive; bees, for example, get investigated in that. That could be expanded to include incidental finding of animals, which could be investigated, even if there is no suspicion of poisoning. You would get more of a background level of understanding of pesticides in the environment—for example, one of the great unknowns is the influence of pet flea treatments and how that gets into the environment. Some of the chemicals are banned for outdoor



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use in farming but not in flea treatments. Finding some of those pathways and understanding them might lead to better voluntary or statutory control.

**Q272 Carol Monaghan:** Thank you for being with us this morning, Mr Holmes. You talked about what you and your neighbour are doing. Are the public taking this seriously enough? You have also mentioned voluntary schemes. Will that ever be enough without statutory clout to back it up? How can individuals monitor the health of insects in their locality?

**John Holmes:** The answers to those questions are no and no, because nobody is taking this seriously enough. I would probably say that for nature recovery generally, although I am really encouraged by the environmental improvement plan and the resources that have come from that. There is so much more to do at all levels, from Government to personal commitment. In terms of what individuals can do, there is a combination of citizen science approaches. Just for pollinators, as a result of the pollinator strategy, it is relatively easy to go online and find out what you can do, and there is some quite simple training in how one can do that.

**Q273 Carol Monaghan:** Are you seeing anything in terms of the demographic of the engagement? Are people in more middle-class areas more likely to engage than those who are perhaps struggling with other issues?

**John Holmes:** I don't know.

**Q274 Carol Monaghan:** Do we not have that granularity?

**John Holmes:** I don't know if we do. I could provide that afterwards if that would help.

**Q275 Chair:** Following on from Carol's question, would it be useful to know who is helping you find this evidence?

**John Holmes:** Yes, it would because that could lead to more targeted local action.

**Q276 Graham Stringer:** You have had a 40% cut to your budget, which must have impacted on the decline in SSSIs and their standards and maintenance. What have you done differently? Anybody can ask for more resources, but under that financial pressure, what innovations have you made? What changes have you made to your activities? How have you made yourself more effective and efficient following that cut?

**John Holmes:** In recent years, in this spending review period, our resources have gone up. Some things related to insects that will make us more efficient and more effective are in our monitoring of special sites. Previously, we did the monitoring by area, and you had a great bundle of features in an area, so it did not really tell you effectively the progress with those features. We have changed to a feature-based monitoring approach—for example, the insect assemblage feature is monitored. We have increased the efficiency with which we do it, but we did not have

enough resource to do that monitoring and we have been able to increase that over the last few years.

We have done some things around species conservation, for example, in our approaches to licensing. Outside the insect world, one of the great successes is our great crested newt licensing, where a few years ago a newt would be a red flag to a developer and result in probably hundreds of thousands of pounds going into surveys that could have gone into conservation. We developed a different approach to that area-based assessment, with investment up front, and that has resulted in far more ponds than we would have got under the old way. It has saved money for developers and made us more effective.

**Q277 Graham Stringer:** I am pleased to hear that. I came across great crested newts when we were developing the second runway at Manchester airport. They were a huge problem, but there are now twice as many great crested newts there as there were before.

You have done some things more effectively. What else is needed?

**John Holmes:** Continued investment in those sorts of approaches. For example, we think, and the examples show, that making more access to our services available digitally for species licences would make us more effective on that front. Changing the way we approach and work with developers, so that we have up-front analysis of the potential for nature recovery in a place—the biodiversity net gain legal responsibility from January will help—and doing the investment up front will save money over time. It also saves us conflict. If we take that approach, hopefully everyone will love the newts they have got and the insects as well.

**Q278 Graham Stringer:** I have a simple question: apart from resources, what are the main reasons for the decline in the state of SSSIs? We are told that they have declined, but can we be certain about the accuracy what we are told?

**John Holmes:** The reason for decline is that these SSSIs are really islands of habitat for species in a highly degraded fabric of the countryside. An SSSI notified for a butterfly species on its own is unlikely to be able to support a butterfly species, even if you do all the habitat management. They are islands that need a wider countryside fabric that is accessible and in good condition. They also suffer from the same things as the wider countryside: pesticide impacts and fragmentation impacts affect SSSIs. That fragmentation has gone on for so long, we do not know what extinction debt, if you like, is carried. We may do all the work that looks right for the species, but there may be genetic risks in there that we have not seen because of historical declines.

**Q279 Graham Stringer:** How accurate is our knowledge of these SSSIs?

**John Holmes:** The accuracy is tested by a variety of contracts that we run to check our assessments, but the assessment process is rigorously thought through for each group. It is part of a national framework across England, Scotland and Wales, developed through the Joint Nature



Conservation Centre. We have based it on what we think will be an accurate approach to assessing those features.

**Q280 Graham Stringer:** I will move on to asking about the accuracy of what we know at the moment about insects. The Committee has had lots of enthusiastic witnesses speaking about insect populations and decline. How accurate do you think our knowledge of insects is generally? They are difficult to count, and even if you count them, all populations go up and down—sometimes, with things like ladybirds, quite dramatically. One year there will be trillions of them and the next year there will be almost none. How good is our information base on insects?

**John Holmes:** It is a relative question, but I would say it is low. If you look at representation of insect species or pollinators on the measures that we have, some are not well represented. That tells us the accuracy is low. Also, we are just starting to understand things about the interrelationships between species and their occurrence; they are, by nature, more cryptic than other species to cover. New techniques such as DNA sampling or even acoustic sampling of environments will tell us way more, and we will learn more.

**Q281 Graham Stringer:** How do we get better information? Is there anything Natural England can do to help the scientific world to have better information?

**John Holmes:** It is about maintaining and investing in the partnerships that work through the whole process of that scientific information. That is through taxonomy, both in the traditional collecting of samples and identifying what they are, and by using DNA, and perhaps new AI techniques that will come up, to try to analyse what that means for insect diversity, as well as through studies of the effectiveness of our management interventions, such as those through the environmental land management scheme. How effective are we? We have to monitor those and have a feedback loop into the actions that we take, especially through environmental land management, and also into scientific investigations of what pesticides mean for insects.

**Q282 Tracey Crouch:** Following on from Graham's questions, it is easy for us to all fall into the trap of being very interested in bees and butterflies as they definitely have much better PR than some other insects. The Committee heard from Dr McAlister—our first witness—who is passionate about flies and fleas; in fact, I went away and read her book, and haven't swatted a fly since. Do you think you do enough in terms of counterbalancing the insects with good PR versus those with bad PR, and how important they are in terms of insect population?

**John Holmes:** I'm going to stick with my, "Nobody's doing enough," answer, because nature recovery is going to need a step change. What we try to do at Natural England is take a functional approach, so we do focus on some species where they need intervention—but, actually, on the ecosystem function, we are moving away from what I might call a traditional preservationist approach of thinking we'll keep this here and that there, to asking, "What's the function of this ecosystem?" You build





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your house from the foundations up, don't you? Insects and invertebrates as a whole play a massive part in that. I worry about the 33% decline in earthworms as much as I worry about the massive decline in insects. We—the nation, and Natural England is part of that—need to focus on that. The other bits of the ecosystem flow from that.

I got into this because I'm a birdwatcher. I used to see spotted flycatchers when I started doing that, and then go and look for the more interesting birds in the wood, but their numbers have absolutely plummeted since 1967—a more than 90% decline. Cuckoos are the same. They eat insects; they are absolutely dependent on them. That is a long answer to say, "Yes, we should do more."

**Q283 Tracey Crouch:** No, that is a very interesting and inspiring answer. I think that sometimes as constituency MPs, when we have major planning applications in our constituencies, we talk about the impact on nature and are often completely ignored, but that is clearly one of the contributing factors, certainly in the south-east, to insect decline. As you mentioned your work with partners in your opening statement—I do have SSSIs and areas of outstanding natural beauty in my constituency, which are very much managed by the wildlife trusts—will you expand on how important and valuable your partners are in helping to deliver the work of Natural England?

**John Holmes:** Incredibly so. I said that we had more resources, but nature conservation should not be the sole responsibility of Natural England. We are there to enable and help the nation to grow and to improve nature.

Your earlier point about people not fully understanding how it works means that many organisations need help to translate that, and to translate that into doable projects on the ground. I think the wildlife trusts especially do that—they are a delivery body for that great crested newt project that I talked about, and also for many other projects. They will be at the heart of delivering some of the landscape recovery projects—those big, joined-up agri-environment fuelled projects over big areas. They are at the heart of delivering nature recovery improvement projects, which we invest in with DEFRA funding, as well as many of those projects on insects. I come from Cornwall, and I can see that happening with my local trust on butterflies and insects associated with really big areas of habitat—heathland and dunes, for example.

**Q284 Tracey Crouch:** In response to an earlier question, you mentioned terrestrial environments and not knowing the number of pesticides in those environments. Are all your partners part of the solution in helping to fill the gaps in knowledge of that?

**John Holmes:** I think everyone can be. There is obviously a focus on those organisations that do the analysis of chemicals, but actually, if we expanded our sampling approaches, anybody—a bit like citizen science—could be gathering samples that could form part of that surveillance. It needs a lot more work, and I am not going to try and make up the scheme





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on the hoof. We could have—and we need—a system terrestrially for analysing that stuff, so that we can react and make our interventions more impactful.

Q285 **Dawn Butler:** Thank you for coming in, John. Can I ask just a basic-ish question to begin with? Can insects help us to understand the change in weather and climate breakdown?

**John Holmes:** Yes, they would be good indicators of that. Specialist insects are very dependent upon particular habitats and those habitats would move with climate breakdown. I read a thing that made me really sad: the red-tailed bumblebee is predicted to disappear by 2080. That is a thing I see in my garden all the time, and that is sad. But actually, they would be a really good indicator. Again, understanding that more and driving the improvement of knowledge of that would really help us.

Q286 **Dawn Butler:** Thinking about Tracey's point on PR, are we doing enough to talk about how important insects are in helping us to understand climate breakdown?

**John Holmes:** I am going to stick with my theme of no. As I said, they are the basics of the habitats that support everything else. They are the basics of habitat recovery. Actually, although they may not be as charismatic as reintroduced red kites, some of the stories are absolutely amazing. I remember seeing on television the story about the large blue butterfly going extinct—it was in the '70s, but I can distinctly remember seeing it. It went extinct at virtually the same time that scientists understood what it needed—it has this sort of symbiotic thing going on with an ant. That led to enabling people to reintroduce them. Okay, that is a butterfly, but some of the stories of bees, flies and wasps are absolutely fascinating. What you see on television and people's responses to that demonstrate the appeal, but everyone—including us, I am sure—could make more effort on that.

Q287 **Dawn Butler:** Thank you. How do you decide what score certain habitat conditions receive as part of the biodiversity net gain metrics, and are insect populations considered in the decision-making process?

**John Holmes:** It is a habitat-based approach. The metric needs to be usable and understandable by developers and local authorities, and insects would be considered through what habitats they occupy. That system should be flexible and is flexible in that it is positively linked to local nature recovery strategies. Local authorities and developers should be able to identify the habitats that are important for them locally, and insects should also get picked up through that.

Q288 **Dawn Butler:** Are habitats the same as landscapes, or is that a different thing?

**John Holmes:** "Habitat" describes the features of a landscape that wildlife would depend on, but the two could be synonymous.

Q289 **Dawn Butler:** Why was the connectivity of landscapes removed from the latest biodiversity metric—version 4.0?

**John Holmes:** I don't think it has been removed. We would argue that there are connectivity factors in there. Hedgerows, for example, are a connectivity feature that scores. Rivers are a connectivity feature that scores. The other thing to say is that there is a hierarchy of scoring. A proposal to deal with biodiversity net gain on-site would score the most if it retained a really high-quality habitat. That could be a really open, scrubby habitat for insects that is important in that place. There are then multipliers, which reduce the score for doing stuff further away on that site, or on a different site altogether. So connectivity is implied—well, actually, it is scored—in that process.

Q290 **Dawn Butler:** So you don't think it has been removed?

**John Holmes:** I don't think it has been removed; it is there. What it is not possible to do is to include every factor for every species, but we would hope that the linking to the local nature recovery strategy would give the flexibility for developers and local authorities to think about connectivity. A good local nature recovery strategy should include connectivity. It is what making the wider countryside, linking up the protected sites, is all about.

Q291 **Dawn Butler:** Thank you. My last question is on integrated pest management. You talked a bit about that earlier. Your studies have found that IPM has both positive and negative impacts on insect species abundance. Why is that?

**John Holmes:** Really, it's about the different interventions that you might make. Going out and assessing the presence of pest predators, for example, and then not spraying because of that will have a positive effect, but part of integrated pest management might be the timing of your mowing or of your sowing. If the mowing or sowing inadvertently did away with some structure and variability in the habitat, that could be bad for some species.

Early results from our studies say it's mixed—that is often the case with ecological studies. We are going to do more work on it, so we are delaying publication of that. I think we said in our evidence it would be out by now, but we are delaying publication until next year so that we can do some more work on it. IPM clearly has a good place in the future of farming for biodiversity. It is a question of tweaking the way we do it for maximum outcome, but also to make sure it fits in profitable farming.

Q292 **Rebecca Long Bailey:** When will you know that the new environmental land management schemes are going to prove more effective than the previous agri-environmental schemes?

**John Holmes:** Well, ultimately, that will be through monitoring of them, and DEFRA is working on what monitoring looks like for the schemes in the future. We have always been part of that in the past and run assessments of different packages and different specific options. We know from previous assessments of options that options that have gone through into the current scheme look like they work well.

First, there is bundling things up into a package, which for insects means

things such as integrated pest management and flower margins. For one thing, it is attractive to people, because you can understand what you are doing across a whole farm. The other thing is that it makes you think about what happens over the whole farm. If you do an IPM strategy but then don't put into place some flower meadows, it does not work. We know that bundling them up works. DEFRA is including learning from those previous schemes into a more flexible scheme with options that work for insects across all three aspects of the new scheme, so we would expect it to work better.

I think the other positive thing is that DEFRA has indicated that it will be adaptive as we move on. Through the first couple of years, we have found that options are moved in based on scientific evidence and attractiveness to people in taking up those options.

**Q293 Rebecca Long Bailey:** Is DEFRA giving clear guidelines in relation to that bundling-up strategy, or is this in the early stages of development?

**John Holmes:** It is early, in that I am sure some more can come. As I said, nature recovery needs the whole country to be all in, and I think farmland will be absolutely essential to that. There are already clear guidelines on flower margins and integrated pest management. It can be built on. We know they are attractive to farmers, and I think that provides a really solid basis.

**Q294 Tracey Crouch:** I will ask a completely separate question. We had a conversation about roadside nature reserves, which are very important in terms of the nature recovery strategy. Am I right in thinking that there is no formal designation process around that at the moment, and that it is something the local authorities do as part of their nature recovery?

**John Holmes:** There is nothing formal, except that some SSSIs might include some road verges, by dint of the interest that was already there. But there is no specific roadside designation. There is guidance on what can be done and what local authorities can use to get more wild flowers and things, but no specific designation.

**Q295 Tracey Crouch:** Do you think it would be helpful to have a specific designation? If so, would you like to have it?

**John Holmes:** My gut feeling is no, but we could think about it. For me, that is one of the areas where I have seen a huge impact where I live. That is partly driven by cost, and partly driven by really good communication among those partners you have talked about around what you can do on road verges. I think that could be rolled out very quickly and attractively to local authorities. I am unsure of whether some statutory push would help, to be honest. I would have to think about that.

**Q296 Carol Monaghan:** This is a rather populist question. A number of years ago, there was a "Doctor Who" episode that talked about the bees disappearing. There was a lot of derision about that storyline, but it was actually a bit of a wake-up call to many people. It was probably the first time that they had noticed there was an issue with pollinators. From your



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point of view, did you see any increase in public awareness following that episode? I know many of your answers have been about how we have to do more, but did that help?

**John Holmes:** For that episode, I can't honestly say. Certainly, it can be a key moment when something really resonates with the public involving a specific species or species group. I have to say, I don't watch "Doctor Who", I am sorry. I doubt it will be in the new one.

**Carol Monaghan:** I have given up on it as well.

**John Holmes:** Whether it is "The Archers" or something in a programme with wider appeal beyond the nature ones, which already have a wide appeal, there can be a moment that you can use to boost understanding. My impression is that the understanding of the need to do something about the nature and climate crisis is clearly growing among lots of elements in society, and certainly younger people. Making sure that is spread to everyone is important.

Q297 **Graham Stringer:** This has been an interesting session; you have stimulated a lot of questions. Getting public support and understanding of the environment will obviously help. Has the row that Tony Juniper has got himself into about licensing bird meddling damaged Natural England?

**John Holmes:** I don't think so, in a wide sense. By "bird meddling", you might be referring to hen harrier brood manipulation—

**Graham Stringer:** Yes, licensing that.

**John Holmes:** I lead on that work. I am a nature conservationist, and have been for my whole life. I came into this because I am interested in birds. I am proud to be part of that project. It is about working with people who want to make a change. That does not mean that everyone from that particular sector will make a change, but I think it is showing good leadership. We have gone from no hen harriers breeding in the country to almost 50 pairs and hundreds fledged. I hope we can consolidate that.

Q298 **Chair:** To wrap up this session, I want to go back briefly to the red list and the 2042 target. If bees and wasps are excluded from the baseline metric—without them in there, there is the potential for extinction, as we have talked about—do you think the Government stand any chance of reaching their commitments to achieve the reverse in insect decline based on that, without those being included in the red list?

**John Holmes:** The red list will always have to be supplemented by other information anyway. Actually, the outcomes target framework for the EIP states that: it says that cannot be relied on to show the impact of every intervention. Those things will tell the story of perhaps how close we are coming, but the great thing for me, after all these years in nature conservation, is that there is an EIP and statutory targets. That gives us something to aim for, and it says statutorily that government at all levels has to be all in to achieve that. We have a chance of achieving it, but I think that the change in what we see in terms of responses by national



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and local government and by people like me and all your constituents has to be absolutely massive.

**Chair:** Okay. Thank you, Mr Holmes, for joining us this morning—it is very much appreciated—and for sharing your thoughts.

### Examination of Witnesses

Witnesses: Rebecca Pow MP and Dr Rachel Irving.

Q299 **Chair:** We now move on to our second and final panel of this inquiry. We are joined by the Minister and the departmental official. Now that you are settled, I invite you to introduce yourselves. Perhaps, Minister, you will also clarify your current portfolio and how it is that you come to sit before us this morning.

**Rebecca Pow:** Thank you, Chair, it is good to be here, and hello Committee. I have Rachel, one of my officials, with me. She is very much in the chemicals and pesticides team.

I am not expecting any sympathy, but I have only just picked the nature portfolio back up. They have swapped the portfolios around. I am delighted to be still the Environment Minister, but they changed the portfolios, so now under my hat it is all things to do with the natural environment, trees and all that, whereas I was water, sewage, chemicals and things like that.

**Chair:** Is that as of this morning?

**Rebecca Pow:** Not very long ago. I caveat that: if there are things that you want more data on—we only have an hour—we will obviously put it in writing to you.

**Chair:** Perfect, thank you.

**Dr Irving:** I am Rachel Irving. I am the deputy director for pesticides, chemicals and hazardous waste at the Department for Environment, Food and Rural Affairs.

Q300 **Chair:** Thank you, and welcome. A decade ago, the Environmental Audit Committee concluded that insects were in decline, but they did not know to what extent. Throughout our inquiry, we have heard from academics and witnesses that it remains the case that not only is there decline but there are gaps in our evidence. How do the Government intend to mitigate insect decline and fill those knowledge gaps?

**Rebecca Pow:** Clearly there is insect decline. There has been a great amount of monitoring and data being gathered over a long time. Actually, the UK has a great deal of data compared with other countries. That is partly because Rothamsted started doing insect monitoring back in 1964 on particular insects—aphids and crop insects that influenced certain crops, such as oilseed rape and wheat—so that has been gathered, and we

have had our wonderful Natural History Museum and other collectors collecting data. Quite clearly though, while we have seen some improvements in the short term, with a third of pollinators having increased, a third of specific ones have very clearly decreased. We know that there is an issue.

Your question was about the gaps. That is why, over successive years, policies have been directed towards improving this. It probably started way back in 2014, with the pollinator strategy, which was very much aimed at encouraging more pollinators. It set certain parameters that it wanted to achieve, which were to increase flower-rich habitats and set ambitions for that; to have healthy bees; to prevent the extinction of pollinators; and to raise awareness of pollinators. Your previous interviewee said that this is all about the public really understanding and everybody being part of it.

We then have actions to support it. On the back of that, we set up the pollinator research partnership, bringing together a lot of academics. It included Reading University, DEFRA and others, and it set up how the system would run and how we were going to get in more pollinators. Under that, a whole lot of these projects for farmers started, such as wildflower packages: they would be paid under countryside stewardship schemes to grow wildflower strips and have buffer zones. Under the wild pollinator package and the farm wildlife package, there were something like 30,000 hectares of wildflower meadows, effectively. I have some wonderful ones in my own constituency, with some award-winning farmers.

We know that there are gaps. We filled them with things like that, but we also set up the bees department—the DEFRA bee unit. That is the national bee unit, with a healthy bees plan, which started in 2020. We have more inspections, more apiaries and more advice for beekeepers to keep the populations healthy so that they do not have an impact on wild bees. We know that there are gaps, so we have started to fill them with those things. We are now revising that pollinator strategy and looking at what more we need to do and what insects have been left out, because it is not only about bees, of course: it is a much wider range of insects.

Linked to all that are our big new farming schemes. The data that has been gathered and is continuously being gathered, and the information from the biodiversity annual report on species numbers, has all been feeding into how we developed our new schemes under the new environmental land management schemes. I must say, Mr Metcalfe, that we had that opportunity in leaving the EU, because we used to just pay farmers for owning land, but now they have to do something—they must do some environmental good for the money. Some of the plans and options that they can choose under the sustainable farming initiative have come about because we have been able to tailor our own system.

Q301 **Chair:** Thank you very much for that; that is very clear. Before I pass over to my colleague Rebecca Long Bailey, you mentioned data and said, early in your answer, that we are better than other countries at collecting





that data. There must be an international aspect to this. It is not a race—we are not going to congratulate ourselves on not being as bad as anyone else—but how do we compare with other countries? We cannot be unique in experiencing insect decline, or perhaps we are.

**Rebecca Pow:** That is a very good point. I wasn't trying to say that we are brilliant; I was trying to say that we have got collection systems. Our new pollinator monitoring scheme—PoMS, which I will probably mention quite a lot during this session—is envied globally. We have set up that new scheme, which is a system with various measures under it, and it collects data on all pollinators. One aspect of it is called a flower-insect timed count—FIT count—which is a timed count of how many and which insects land on which flower or which plant, and the data is collected on an app. We can all apply for the app and help to do that. I have seen it working and it is absolutely brilliant. It gathers thousands and thousands of bits of information that will be genuinely important.

On the Montreal global biodiversity conference, target 7 of the Kunming framework is a global target for parties to achieve by 2030. It is to reduce pollution risks and also pesticides that are harmful to the ecosystem. That will have a big knock-on effect on pests, diseases and insects. It also encourages us to halve pesticides and take up what is called an integrated pest-management approach. That is a global commitment. There is an understanding that we have got these massive crashes in populations, and there are different ways to tackle it, but one is tackling pesticide usage, setting a target and encouraging methods to control pests and diseases that use less pesticide. I think Rachel could add eloquently to that.

**Dr Irving:** On the Kunming framework, the Minister is right: there is an ambitious global target under target 7. It is a global target to halve the harms from pesticides and highly hazardous chemicals. That is exactly the right approach because it looks at halving the harms of, rather than halving the use of. No doubt we will get into that when we get into the pesticide data, but really what we are trying to deal with is the harms from pesticides. You can have a pesticide that is comparatively less harmful used widely, which overall has less impact on insects than pesticides that perhaps are used less but are more inherently toxic. That will drive a lot of the global ambition, as the Minister said.

**Chair:** Thank you very much indeed.

Q302 **Rebecca Long Bailey:** Thank you both for coming to speak to us today. Minister, you have mentioned already a few projects and strategies that are intended to reverse insect decline, such as the bee unit, revising the pollinator strategy, new land management schemes and so on. Based on the current statistics that you have, are you on track to meet the statutory aims of reducing the risk of species extinction and reversing the decline of species abundance by 2042?

**Rebecca Pow:** The good thing is that we have targets. We have now got the structure in place. We have the Environment Act, which triggered the environmental improvement plan that set our targets and the outcomes





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framework. There will be a series of checking interim targets as we go along, so we have set those interim targets. To get on track, we have to record and monitor how many hectares of new habitat we are creating. The target is to restore 140,000 hectares by 2028. We have already restored an area the size of Dorset with our policies and packages. The wildflower packages that I just talked about have restored 30,000 hectares. It is a matter of making sure that all those things are on track.

We also have targets to ensure that our sites of special scientific interest—which are our really precious protected sites and protected habitats, often for specific insects—are in favourable condition, so we have set targets for when they have to be fully assessed and what actions we need to take on them, because a lot of them are not in the condition they need to be in; we know that. We have now set in train getting them back into favourable condition, and by 2028, 50% of those sites have to have the actions lined up to get them into favourable condition.

We are lining up a whole range of measures to get us to that target. It is going to be challenging. We have to make everything work, which includes encouraging our farmers to opt into the new sustainable farming schemes, of which integrated pest management is a key element if we are going to reduce the amount of harm to insects. That is why we put that in there.

There are four specific areas that would help and that farmers would be paid to do. They will be paid to do a plan for how they would introduce integrated pest management, which means not just using less pesticides but also, if they are using them, making them very targeted and specific. It is also about how to plant other crops in between crops—they are called companion crops—which is what I did as an organic gardener. For example, you can plant French marigolds to attract carrot root fly, so the carrot root fly does not go into your carrots.

It is about learning and education, and we have support for farmers. There is a raft of those measures, as well as the countryside stewardship measures, which include planting bigger wildflower areas, legumes and improving soil management. It is a targeted approach to get us there.

**Q303 Rebecca Long Bailey:** It is helpful to know that it is a targeted approach. It would be very helpful for members of the Committee to understand what the interim targets are and how they are being met now, so that we can track progress towards the 2042 statutory target. If you cannot provide that today, perhaps you could write to the Committee afterwards with a list of the targets and your progress on each of them; that would be extremely helpful.

Is it feasible for the Government to legally achieve those targets if all the bees and wasps go extinct simply because they are not included in the baseline metrics in the first place?

**Rebecca Pow:** On your first point, the whole point of the environment improvement plan and the outcomes framework is to do exactly what you are asking—to set targets and then to check that we are on track to meet



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them. That is why we have the annual biodiversity indicators report, reporting on thousands of insects.

You mentioned bees. We can send you all this data, but 1,195 species across a range of species groups are being tracked and reported on. That includes 11 bumblebee species, 55 butterflies and 452 moths. That is all data that is being gathered, and with the new pollinator monitoring scheme that I mentioned—the PoMS scheme—we will get even more data. That will be so useful to check out the long-term trajectory, which I think is what you are asking about, because it is so important that we keep track of that. That is what the EIP's purpose is, and we brought that into law. It is an enormous step that we needed.

There is also more data being reported and measured on species extinctions through the red list that was mentioned in the previous session. You mentioned that bees and moths are not on it; that is because we do not have exactly the right data for them to get on to that red list. We had big talks about this when we were talking about the species abundance targets. That does not mean to say there is no data on them: there is data on them, and there increasingly will be through the new monitoring scheme. I would like to say that they will catch up, but there is a lot of focus on bees and moths, because we have our own bee unit, and we realise how important bees are and the tracking of how they are doing. My data says that honey bees are not declining, but we need to keep an eye on wild bees, so that is why there is a lot of advice available on bee health.

**Q304 Rebecca Long Bailey:** In relation to the trade-offs between food security and environmental targets, what assessment methods or criteria do the Department employ?

**Rebecca Pow:** Quite clearly, producing our own food, and having a sustainable supply of food, is really important—increasingly so; all the global pressures that we face have brought that into stark focus, which I genuinely think is a good thing. We already produce 60% of the food we need, and at times, with certain crops, we produce 73%. It is obviously really important to get the balance right. Clearly, insects and pollinators are hugely important to the production of our food. That is why we need to encourage them. We can send you the data on the value of pollinators per hectare, but you probably already have it.

We are rolling out our new farming systems, so that we can encourage more sustainable use of the countryside and soil. Soil health is so important; it is the first plank of our sustainable farming initiative, which will affect all the creatures living in the soil, so it will have a big biodiversity impact. We are constantly monitoring and balancing. We are running tests and trials on how our integrated pest management systems are going, so that we can track whether we are getting the desired outcomes, and whether we should tweak those systems. Rachel can probably add a bit to that.



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**Dr Irving:** On your question about what specific policies we have on IPM in the SFI, the idea is to create sustainable practices that are good for the environment and for food security, and that you get a double win out of those actions. That is why the first action is a proper IPM plan, which you do with a trained agronomist. We have an app that you can use to help you plan on the farm. The farmer can plan those actions for his or her business, to ensure that they get both those wins, and that what they do is good for the environment and for farming. Obviously, there are trade-offs, but the idea is that in as many policies as possible, you get that double win.

Q305 **Dawn Butler:** I do not want to go down a rabbit hole, but I want to pick up on something that you said, for clarity, because I was a little perplexed. You said that if we had not come out of the EU, you could not have encouraged farmers to ensure sustainable soil. I do not have many farmers in my constituency in Brent, in central London, but from my limited experience, farmers already understood the lifespan of topsoil and the need to plant different things in turn. That is their job. Farmers were doing this anyway. What did leaving the EU have to do with it?

**Rebecca Pow:** In the EU, the common agricultural policy paid farmers just for managing land. They did not have to deliver anything for it—even a certain amount of food. That is just how the system worked. It was all about keeping people in rural communities. There was a logic to it. There were some environmental payments, but you had to choose to take them, and only about 20% of farmers did.

Leaving has given us an opportunity to devise a new payment system. We have guaranteed farmers the same money that they got under the common agricultural policy, but to get it, they have to choose one of the levels in our new environmental land management scheme and our sustainable farming initiative. We have made soil the top plank of that. I was the first person in Parliament to ever hold a debate on soil, to get the ball rolling. Behind that, there is all the science. It is the raw material for food-growing, and it is used for lots of other things, including carbon capture and storage. We now pay farmers to do healthy soil management. Because of the way the system was driven, to make enough money, a lot of them had to go down the route of monoculture and apply a lot of pesticides, and that did not help the insects.

**Dawn Butler:** Sorry, Chair. I didn't mean to go down a rabbit hole.

**Rebecca Pow:** You've gone down a rabbit hole. I can talk about soil all day. It's one of my favourite subjects.

**Chair:** We are happy to talk about soil all day as well, but I understand that you have a hard stop, Minister.

**Rebecca Pow:** I do, yes. I'm really sorry. You should come and talk to me about it!

**Chair:** I think it would be beneficial for all concerned if we tried to keep the answers quite tight to make sure that we get through the questions



and get the information that we want, and that you get out on time.

Q306 **Dawn Butler:** Apologies, Chair. Minister, you talked about revising the strategy for urban beekeeping. I have a really good fire station in my constituency in Brent that does a lot around mental health for their firefighters. They wanted to set up part of their garden for urban beekeeping, but that does not seem to be a very good idea because of the effect of bees elsewhere, with the expansion of urban beekeeping. How many entomologists work on wild pollinators for DEFRA, and how many work on commercial or domestic beekeeping in the bee unit? I am happy for you to write back to the Committee if that's easier.

**Rebecca Pow:** To summarise very quickly, we have our bee unit, and we have a range of specialists on pollinators and bees. They work very closely together. There is a lot of cross-fertilisation in terms of the health of bees because they impact one another—wild bees and urban bees, or just bees kept in apiaries.

On entomology, I would say it should be the new PPE. I would encourage people to think about studying entomology instead. We need entomologists. We have some work going on with CIEEM, the environmental management institute, on how to skill up more people in entomology. It will be so critical to have that knowledge as we move forward on trying to encourage all these new schemes. We can put a bit more on that in writing to you.

Q307 **Dawn Butler:** That would be perfect, thank you. My last question is: how can the Government guarantee that vital long-term insect monitoring projects will continue, if they are required to compete in a five-year funding cycle?

**Rebecca Pow:** Monitoring is absolutely key to everything we are talking about, so that we know about population changes and can influence policy. The pollinator strategy is on a 10-year cycle. That is being reviewed. A steering group has been set up, with lots of specialists, experts and academics feeding into it, to look at the data we have, what we have achieved so far, and how we ought to change that. That is not tied to a five-year cycle; it is a 10-year cycle.

We also have our pesticide strategy and our action plan, which had a great deal of work going on in it. I will get Rachel to quickly clarify that.

**Dr Irving:** I am sure there will be a question coming up on the national action plan. We can talk about the delay in a different question, but we will publish the national action plan very shortly. One of the things we have been looking at while working on it is the data we can use. There are a couple of things there. One is that we don't think the data we have on urban and peri-urban spaces is as good as it could be. We are looking to see how we can improve that data. Secondly, as I mentioned, you can talk about pesticides in terms of load—kilograms per tonne—but that does not tell you everything. You need to look at how that impacts different species, whether that is insects, mammals or birds.



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We recently funded research, which has been published, on something called the pesticide load indicator, which starts to work out what the pressure from pesticides is on certain insects, mammals and birds. That is something we are really interested in tracking and monitoring, because it will not just give us the data; it will tell us what the impact of that data is.

**Q308 Carol Monaghan:** Dr Irving, you mentioned the urban environment, which we have not talked a lot about. The Minister has already spoken this morning about wildflower planting and the use of apps to monitor insects. In the urban environment in particular, although possibly in the rural environment as well, is this an endeavour of affluent society? Are we gathering data from more deprived areas? Are people in deprivation really looking at things like insect decline?

**Dr Irving:** I can only answer on the pesticides front. You are right: we have much less data on pesticide use in urban areas than on farmland. I think that 85% of all pesticides are used on farmland, which is the reason behind that. However, there is definitely more that we can do, and we want to consult on how we can do things better, once we have published the national action plan. As you say, there may be difficulties in getting that data, depending on how we do it. We want to make sure that we have meaningful data; that is definitely something that we are looking at.

**Rebecca Pow:** Of course, a great many local authorities already have a proviso in favour of leaving their roundabouts and verges to grow with wildflowers; my local authority has that. Lots of us have encouraged our local authorities to do that. In a way, the data should all be collected eventually. Just today, we launched a £2.5 million package to provide more access to nature for children. There will be a real benefit and emphasis on creating meadows, verges and so forth in urban areas, so that all our population can reach nature. There is funding coming out for things like this.

**Q309 Carol Monaghan:** The difficulty is that there are not too many verges in an urban environment. If we are talking about decreasing or stopping the decline of insects and pollinators, we really need data from across the whole environment. We need it in urban and rural settings, and within different demographics. I wonder how we can engage with citizens living in more deprived areas, because this is, I would imagine, not on their radar.

**Rebecca Pow:** The fund that I just mentioned, which was launched today, particularly tackles the issue of children in deprived areas, because we have data to say that 10% of children have not been out into nature for a whole year. If we can get nature into those areas—we now have the funding to do it—that will help.

As Rachel said, we are looking at how we can gather that data, but we also have a greening infrastructure policy across Government, which is bringing more green ways and corridors along our roadsides. That is a Government announcement. We have pocket parks and funds for urban trees, so there is a lot more going on in our really important urban spaces.



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You are right: to gather that data, citizen science is absolutely critical. I have not mentioned it yet, Chair, but a lot of our data comes from charities, such as the Bumblebee Conservation Trust and Butterfly Conservation, whose annual butterfly count I participate in; we can all do that in our garden. There is also Buglife. There are lots of organisations that are supported by amazing volunteers, and they can use the PoMS FIT app. There are lots of ways in which people can get involved, and I would encourage them to do so, because they are a really important part of this process.

**Q310 Carol Monaghan:** Can you just give me the name of that fund again?

**Rebecca Pow:** It is the access for nature fund; £2.5 million for it has just been announced today. We can get you the details of that.

**Q311 Tracey Crouch:** Minister, thus far in your evidence to us, you have said a lot about farmers; you have not said much about conservationists. In his evidence to us, Chris Packham made the point that the National Farmers Union has a lot more access to DEFRA than, for example, the Wildlife Trusts. Driving forward progressive policy is really difficult, because conservationists' access is limited. Would you say that was a fair criticism?

**Rebecca Pow:** Do you know, I wouldn't. We work really, really hard whenever we create policies to do what we call stakeholder engagement, as you would know, Tracey, from when you were the Minister for Sport. It is so important.

We absolutely value what we call our green NGOs. In fact, I am having a whole group of them round this afternoon to talk about the new announcements today. They do really valuable work. They have already benefited from millions and millions of pounds of Government grants, which we value hugely, to do a lot of green recovery work. There is the green recovery fund that we opened during covid, for example. They have put in great applications, and a lot of them got funding to do a larger amount. A lot of them are building our nature recovery network, which we need in order to link up corridors, and do our larger landscape-scale work, which I have not even mentioned yet. That is another plank on top of the farming ELM schemes.

Quite a lot of the wildlife trusts—the RSBP is a great example—often work with farmers in their communities, whom they pull together. They have a bigger plan on how to restore parts of nature for specific purposes—whether that is for clean water, or particular habits for nature. For example, we have just launched the Mendip national nature reserve specifically to support butterflies. Lots of trusts and environmental groups are involved there, as well as Natural England and our farmers. I would say we are working increasingly with all those groups.

**Q312 Tracey Crouch:** Let us talk about pollinators for a second. You may have heard John Holmes talking about the importance of earthworms, flies and so on. How do the Government intend to support other insects, other invertebrates, that are crucial for the ecosystem, not just pollinators?





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**Rebecca Pow:** Pollinators constitute a huge range of insects. In the pollinator strategy, the evidence we have so far looks increasingly at whether we are targeting enough of these pollinators, and covering the right ones.

Q313 **Tracey Crouch:** Are we doing enough, beyond pollination, to support the ecosystem?

**Rebecca Pow:** Going back to soil, earthworms, thrips, nematodes—all these creatures—are in our soil. Paying farmers to take more regenerative approaches to agriculture, which means not turning up the soil and releasing the carbon, allows the worms—and also the fungi and mycelium—to stay and create the pattern of life they have. We are doing huge amounts of work on that. I can give you some more data on that, Chair; it is a very important aspect of the whole. We are talking about all insects here, not just pollinators.

Q314 **Tracey Crouch:** This afternoon, I will be using all the social media to advertise all the wonderful things you have announced this morning on nature recovery, but doesn't the fact that we even need the phrase "nature recovery" imply that successive Governments, and perhaps even we as a population, as a race, have failed?

**Rebecca Pow:** This is why I came into Parliament, Tracey. As you know, I am a conservationist and an environmentalist; I have worked on that all my life—largely in conjunction with farming. This is partly because of past policies and the CAP, but we have realised that. We are the Government who have put in place what I would call a groundbreaking new framework to address that; it is absolutely critical. That is why we made nature the main plank of COP26. We were the Government who got that in there, alongside net zero. This is as important.

We have international targets, and that is why the Prime Minister made announcements today about the new national park, new community forests and money for children to get closer to nature; we know how important that is. He is following that up by going to COP28 to continue to talk about the things we introduced at COP26, to make sure we are driving in the right direction.

Q315 **Tracey Crouch:** Do you think the Government get the urgency?

**Rebecca Pow:** They absolutely do, Tracey. I am banging on their door every day. I went to the global food summit last Monday with Environment Ministers from around the world, and world leaders, and I stood up to talk about the things I have been talking to you about today. I am not saying we have solved the problem, but I feel we now have the system. Look at what we are doing on pesticides; we need to do a lot more, but integrated pest management is a game-changer. We were revered by people on that platform. They came up to me afterwards and said "How have you managed to get this through your Parliament?".

Q316 **Tracey Crouch:** You say that you get the urgency. Fantastic, but why has there been a five-year delay in the publication of the national action plan





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on the sustainable use of pesticides?

**Rebecca Pow:** Because an awful lot of work and discussion has gone into that. I think we had 38,000 responses to the consultation. We have to work through all that.

**Tracey Crouch:** Five years.

**Rebecca Pow:** I was not there five years ago, but its announcement is imminent. You make a good point: this is urgent and critical. We know now that there are other issues that we need to get into, such as this urban issue, biopesticides, and whether we should have targets; you might want to expand on that, Rachel. It is imminent, and it also links to our global work on pesticides.

**Dr Irving:** You are right: there has been a delay. The action plan sets out to minimise the risks and harms from pesticides both for human health and for the environment, while ensuring that farmers, growers and land managers have the tools that they need. As you can imagine, it is a really complex area that the Government are keen to get right. As the Minister mentioned, when we did the consultation, which closed in 2021, we got 38,500 responses. We felt that it was right to take time to get the action plan exactly where it needed to be. It is also not an England-only plan; it is for England, Scotland, Northern Ireland and Wales, and we have worked really constructively with the devolved Governments, but obviously getting a plan that is right for each geography and landscape is also a challenge.

What we absolutely have not done is just wait for the national action plan to do some of the things that we have talked about today. In the SFI there are four paid IPM actions that will be continually reviewed. That will be a really important plank on that journey. We have also put £270 million into the farming innovation programme. That includes actions to support IPM, like using pheromones to deter pests and using pesticide-free weeding techniques. The pesticide policy has not stayed still in any sense. As the Minister says, we are shortly going to publish. But it has taken longer than we anticipated—that is true.

Q317 **Tracey Crouch:** Dr Irving, you said “shortly”. Minister, you said “imminently”. As a former Minister, I can tell you that they mean two different things. Will we see it before Christmas?

**Dr Irving:** We are working on it.

**Tracey Crouch:** I don’t think we are going to get any more than that, Chair!

**Chair:** Graham Stringer has a few questions, but I will give you a final bite of the cherry, Tracey: you will have the last question.

Q318 **Graham Stringer:** Minister, it is good to have you at the Committee. It is very rare to have Ministers with a scientific background in such jobs.

**Rebecca Pow:** I actually did an entomology module in my degree, though I have forgotten most of it.



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**Graham Stringer:** Better still. You have said that you want to think differently about the environment as a Minister, and we have had a flavour of that. What policies are you improving or changing with that different thinking?

**Rebecca Pow:** I hope it is clear from everything I have said that the different thinking is under way, through the ELMS, the sustainable farming initiative and the larger landscape projects—the second round of which is about to open because it has been so popular—and our farming in protected landscapes scheme. We have a whole raft of these projects; we can send the Committee a list, because there are so many. Integrated pest management is definitely different thinking that has come in, and it is growing all the time as we get more information about how well it is working.

There is also a real focus on using innovation and technology. I think it will help increasingly in this space to be thinking about different technologies that will move farmers away from reliance on the pesticides. After all, they use pesticides to control pests and diseases and to grow food, and we have a demand for food. We have to be able to produce our food sustainably and holistically, cutting down on lots of these problematic chemicals.

I went to see one project at a farm called Pollybell Farm. They had invented a sort of robot that was going right across the big field of vegetables killing weeds. It had a computer that spotted where there was a weed and zapped it with a light beam. There was no chemical used at all. The machine had a very light tread on the soil; it was not a great big heavy tractor.

That is the kind of different thinking that there is. We have the farming innovation programme, which is £270 million, but we have also had an awful lot of trials being run with farmers to test out lots of these new techniques, which will gradually inform our policies and be offered to farmers.

Q319 **Graham Stringer:** That is interesting. Dr Irving, you have mainly answered a question that I was going to ask about the measures you are taking to get better-quality information about the impact of pesticides on insects. You talked about pesticide loading. Is there anything you want to add to that to answer the question that Natural England was asking about the gaps in our knowledge? Will those experiments and that research on pesticide loading satisfy Natural England, do you think?

**Dr Irving:** I can't answer whether it would satisfy Natural England.

**Graham Stringer:** Well, satisfy Natural England's question, then.

**Dr Irving:** The report I was referring to—the pesticide load indicator report, which was published by Fera and the University of Hertfordshire—is really interesting. As we have said before, one of the issues in this space is what you are measuring and why. You can measure tonnage and you can measure toxicity, but on their own they do not tell you very much.

The pesticide load indicator work is not a magic solution and does not solve all the world's problems, but what is interesting is that it allows you to break it down over about 20 indicators, so you can look at the chronic and acute loads on insects, mammals and birds. You can look at how bioaccumulative and persistent pesticides are in the environment. You can then look at the individual indicators, see what the trends are, and be much more targeted in your actions. That is a really important part of it.

That is mostly on agriculture and farming space; we do not use it as much on the urban landscape, but making sure we get the data right on the urban landscape will be important as well. That is something that we are also looking into.

**Q320 Graham Stringer:** On the urban landscape, you said in a previous answer that it was about 15% of usage. Would the Government consider banning pesticides? If gardens and urban areas are not that important in providing food, should we consider banning pesticides in those areas? Insects fly about, clearly, and they could be damaged by pesticides in urban areas.

**Rebecca Pow:** At the moment we are going along the line of integrated pest management. I am a gardener and live in a village, and I have done a lot of work on encouraging people not to use chemicals in their gardens. It is quite easy to garden without using chemicals; I am largely a chemical-free gardener. I planted a big patch of wild flowers in covid, and it was absolutely staggering how many insects it drew in.

I know that a lot of good work is going on, and the Royal Horticultural Society has a lot of data on this. It is encouraging gardeners not to use sprays and chemicals and is giving them the knowledge and expertise on how to garden without them, which includes growing vegetables.

I would say that it is not necessary to have a ban, because there are plenty of other options that could be taken, depending on the situation. Certainly I would encourage all amateur gardeners like me to go chemical-free.

**Q321 Graham Stringer:** The last Secretary of State granted emergency authorisation for neonicotinoids for use on sugar beet this year, and the UK Expert Committee on Pesticides disagreed. What evidence is needed to reject an application for emergency authorisation?

Dr Irving, I don't know whether you have read Professor Field's evidence to this Committee, but she explained in some detail that it is very difficult to compare the evidence on the impact of pesticides that is gained from experiments in glasshouses, as opposed to out in the field. What evidence is needed, and how can you improve that evidence?

**Dr Irving:** Emergency authorisations are taken in line with the legislation. There are five tests that need to be met in order for an emergency authorisation to be granted. There have to be special circumstances prevailing; those special circumstances have to include a danger; the danger must not be capable of being contained by any other reasonable



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means; the emergency authorisation has to be necessary to contain that danger; and the emergency authorisation must be controlled and limited to the extent of tackling that particular danger.

Why might an application be refused? The answer is that if it fails to meet any one of those tests, it will be refused. We go through that rigorous process every time an emergency authorisation application comes in, and the Minister for farming took that decision on behalf of the Secretary of State last year. The reasoning for that decision is set out in the statement of reasons that was published on the DEFRA website. We did that specifically because we know how much interest is taken in this emergency authorisation application, so we wanted to increase transparency around the decision-making process and why the decision had been taken in this instance.

**Rebecca Pow:** There is also a requirement to do a significant amount of monitoring after the product may have been used. That has to be done by the applicant, and then DEFRA supplements that with additional monitoring. We monitor for any pesticide residues in the soil, the field margin vegetation and the field margin pollen—we have all that data as well. Also, DEFRA funds the taking of samples of honey and looks at whether there are any residues from neonics. All of that is taken extremely seriously and will add to the sum of knowledge we have about all this.

**Chair:** We have a final couple of questions from Tracey Crouch.

Q322 **Tracey Crouch:** I want to ask you about the announcements today. I have been scrolling through the announcement on the DEFRA website. I have only been able to speed-read through it, but as far as I can see, there are no references to insects or insect decline. When you are publishing an announcement like this, can you publish alongside it any kind of impact assessment that is specific to insects?

**Rebecca Pow:** There is no specific mention of insects, but the very fact that we are creating new habitats, such as a new national park, means that there will be more protected areas. Within those protected areas we have a lot of special sites and special habitats. Work is ongoing with farmers to look after the land and to create or enhance habitats that are already there. Some species will definitely be benefiting—either specific butterflies, for example, or wider species. For the £2.5 million fund to help children experience the great outdoors, people have to put in applications, so they could put in an application to make bug hotels. With my Christmas cards this year, I am giving a donation per card for a deprived area of Taunton to make insect and bee hotels.

They do not specifically mention insects, but the new announcements today are tremendous in that they will increase biodiversity. As a matter of fact, insects will be included: there are 34 new landscape recovery projects and £25 million for them, a new national park, two new community forests and a new national forest. The sum total of that will definitely benefit insects.



## HOUSE OF COMMONS

Q323 **Tracey Crouch:** You will appreciate that this is the science Committee, so we like to see forecast assumptions, statistics and stuff. Could you write to the Committee, please? I am assuming that the work has been done within DEFRA on what the forecasted impact will be—presumably a positive one—on insect population. This is an inquiry into insect decline, and you are using the announcements today as an example of the positive work the Government is doing. It would therefore be helpful to the Committee to see the statistics behind your optimism about the announcements today.

**Rebecca Pow:** That is absolutely fine. They also include funding for protecting our temperate rainforests, which are a massively important habitat of which we have only 1% left.

**Chair:** Dr Irving and Minister Pow, thank you very much for joining us.