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Pàrlamaid na h-Alba

Official Report

RURAL AFFAIRS, CLIMATE CHANGE AND ENVIRONMENT COMMITTEE

Wednesday 30 January 2013

Session 4

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RURAL AFFAIRS, CLIMATE CHANGE AND ENVIRONMENT COMMITTEE
4th Meeting 2013, Session 4

CONVENER

*Rob Gibson (Caithness, Sutherland and Ross) (SNP)

DEPUTY CONVENER

*Graeme Dey (Angus South) (SNP)

COMMITTEE MEMBERS

*Jayne Baxter (Mid Scotland and Fife) (Lab)
*Claudia Beamish (South Scotland) (Lab)
*Nigel Don (Angus North and Mearns) (SNP)
*Alex Fergusson (Galloway and West Dumfries) (Con)
*Jim Hume (South Scotland) (LD)
*Richard Lyle (Central Scotland) (SNP)
*Angus MacDonald (Falkirk East) (SNP)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Jonathan Hall (NFU Scotland)
Professor Alison Hester (James Hutton Institute)
David Jamieson (City of Edinburgh Council)
Dr Maggie Keegan (Scottish Wildlife Trust)
Deborah Long (Plantlife)
Davy McCracken (SRUC)
Andrew Midgeley (Scottish Land and Estates Ltd)
Matt Shardlow (Buglife)
Dr Adam Smith (Game & Wildlife Conservation Trust)
Professor Des Thompson (Scottish Natural Heritage)
Dr Paul Walton (RSPB Scotland)

CLERK TO THE COMMITTEE

Lynn Tullis

LOCATION

Committee Room 2

Scottish Parliament

Rural Affairs, Climate Change and Environment Committee

Wednesday 30 January 2013

[The Convener *opened the meeting at 10:04*]

Subordinate Legislation

Marketing of Bananas (Scotland) Regulations 2012 (SSI 2012/349)

Shetland Islands Regulated Fishery (Scotland) Order 2012 (SSI 2012/348)

The Convener (Rob Gibson): Good morning and welcome to the fourth meeting in 2013 of the Rural Affairs, Climate Change and Environment Committee. Members and the public should turn off their mobile phones and BlackBerrys because leaving them in flight mode or on silent may affect the broadcasting system, and we would not want that.

Item 1 is for the committee to consider two negative instruments as listed on the agenda. Members should note that no motion to annul has been lodged in relation to the instruments. Are there any comments from members?

Members: No.

The Convener: Thank you.

Biodiversity

10:05

The Convener: Item 2 is an evidence-taking session on the Scottish Government's 2020 challenge for Scotland's biodiversity. We will take evidence in a round-table format, which we enjoy as we usually get a good flow of information.

First, I ask everyone round the table to introduce themselves. That will allow us initially to know who we are talking to. I will begin. I am Rob Gibson and I am the convener of the committee.

Andrew Midgeley (Scottish Land and Estates Ltd): I am head of policy at Scottish Land and Estates Ltd.

Jayne Baxter (Mid Scotland and Fife) (Lab): I am an MSP for Mid Scotland and Fife.

Dr Maggie Keegan (Scottish Wildlife Trust): I am head of policy at the Scottish Wildlife Trust.

Dr Paul Walton (RSPB Scotland): I am head of habitats and species for RSPB Scotland.

Claudia Beamish (South Scotland) (Lab): I am an MSP for South Scotland and shadow minister for environment and climate change.

Matt Shardlow (Buglife): I am the chief executive of Buglife.

Dr Adam Smith (Game & Wildlife Conservation Trust): I am the director for Scotland at the Game & Wildlife Conservation Trust.

Richard Lyle (Central Scotland) (SNP): I am an MSP for Central Scotland.

Professor Alison Hester (James Hutton Institute): I am head of safeguarding natural capital at the James Hutton Institute.

Nigel Don (Angus North and Mearns) (SNP): I am the MSP for Angus North and Mearns.

Deborah Long (Plantlife): I am the programme manager at Plantlife Scotland.

Jonathan Hall (NFU Scotland): I am director of policy and regions at NFU Scotland.

Alex Fergusson (Galloway and West Dumfries) (Con): I am the MSP for Galloway and West Dumfries.

Professor Des Thompson (Scottish Natural Heritage): I am principal adviser on biodiversity with Scottish Natural Heritage.

Jim Hume (South Scotland) (LD): I am an MSP for South Scotland.

Davy McCracken (SRUC): I am leader of the sustainable ecosystems team at Scotland's Rural College.

Angus MacDonald (Falkirk East) (SNP): I am the MSP for Falkirk East and parliamentary liaison officer to Richard Lochhead.

David Jamieson (City of Edinburgh Council): I am head of parks and green space at the City of Edinburgh Council.

Graeme Dey (Angus South) (SNP): I am the MSP for Angus South and deputy convener of the committee.

The Convener: Thank you, everybody. To allow the discussion to flow, witnesses and members should indicate to me when they want to speak, and I will decide whether you are good or bad boys and girls. Please be patient and I will try to bring everybody in.

I will begin the questioning. The 2020 challenge for biodiversity is varied. Is there a particular thing that you believe will make the biggest difference for biodiversity in the next seven years? When we look back at the end of that time, what will we see really made a difference to the maintenance and improvement of Scotland's biodiversity?

Who would like to start?

Dr Smith: In for a penny, in for a pound. Everyone round the table who knows me will know that I am not shy about coming forward.

The vision that we would like to see addresses Albert Einstein's position that the definition of insanity is to do the same thing time after time and hope for a different result. It is pretty manifest that, to date, we have not achieved our biodiversity targets in Scotland with what we have done so far. The biggest single thing that I believe Scotland could do is to recognise that the vast majority of its land surface is managed, with 50 to 60 per cent for agriculture, 20 per cent for sport and 17 per cent—and growing—for forestry, and that we will not hit our conservation targets unless we engage actively and positively with land management.

We cannot deliver all our biodiversity goals in protected areas. We should have an overarching aim of having a Scottish biodiversity strategy that has a positive engagement with land management, which would bring benefits to Scotland. There are techniques and approaches that would allow land managers to do that.

Deborah Long: In 2004, we launched our biodiversity strategy; it is a great strategy, with a lot of very good things in it. From a Plantlife perspective, the next useful step would be to step up on the delivery. The introduction to challenge 2020 referred to a "step change" and in order to make such a change, we must be able to deliver. That will include inspiring more people than are already engaged, which means not only the wider public but Parliament. We also need to make it very clear what needs to be done and by whom. Many of the consultation responses said that it is not clear enough what needs to be done in the next seven years to achieve the step change to start to conserve biodiversity, and hold the loss of biodiversity, which is what we are all aiming for.

There are two elements: the inspiration element, and being clear about the roles and responsibilities that we all have—not just the environmental non-governmental organisations but all of us, including the wider public—so that we can start to work together to make some great steps forward. There is a lot of potential; we just need to harness the energy.

Andrew Midgeley: I support what Adam Smith said about engaging with land management. On the convener's question about what one thing we could look back on as being really important, what came straight into my mind was advice. It is about engaging with land managers in a positive way and enabling them to help deliver for Scotland. Unfortunately, the demise of the Farming and Wildlife Advisory Group Scotland has left a bit of a gap. Discussions about the future of the Scotland rural development programme have referred to the importance of advice. Most people agree that we need comprehensive advice structures that will help people deliver. My key point is therefore to have such advice.

Jonathan Hall: Both Adam Smith and Andrew Midgeley referred to engagement, delivery and advice. The 2020 target date is significant because it also represents the end of the next programming period for not only the next SRDP but pillar 1 support for the common agricultural policy, which will give us a huge opportunity. If we get the design and delivery of pillar 2 right, we can certainly realise a host of specific measures aimed at delivering biodiversity gains. Equally, if the design, delivery and practicality of pillar 1 are right for its greening component from 2014-15 through to 2020, that will bring an awful lot of engagement over a significant area of Scotland, if channelled in the right way. If we get it wrong, it could act as a disincentive. We must therefore tread very carefully as we go forward. However, we have an opportunity.

Of course, funding is critical. I am sure that others will raise that point in due course. We will have to spend money on engagement, advice and delivery, which all come at a price. When we consider issues such as scale, context, catchment and ecosystem services, we must also think about the funding elements.

Davy McCracken: I want to emphasise a point that previous speakers have made, which is the

importance of using the CAP to help drive the changes in land management. That could have an impact—beneficial or adverse—on biodiversity. It will be essential to use the CAP on the SRDP side of things in both pillar 1 and pillar 2. The wider countryside is extraordinarily important. We cannot manage our protected areas without having appropriate management in our wider countryside. As people around the table will expect me to say, we have a high proportion of Europe's high-nature-value farming system resource in Scotland. We therefore need to ensure that the CAP, in all its guises, provides sufficient, effective and appropriate support to that resource.

10:15

Dr Keegan: I am pleased that the Scottish biodiversity strategy will be aligned with the Aichi targets. The first strategic goal of the Aichi targets is to mainstream biodiversity across Government departments and society. That is crucial. We cannot have biodiversity sidelined, as it has been. There is a new national planning framework coming out. There is a realignment of Scottish planning policy. There is a new round of SRDP funding. It is crucial that whatever is in the strategy is delivered by departments other than just the usual suspects—SNH, the Forestry Commission and NGOs. We would like the minister to champion biodiversity.

Professor Hester: There are two elements that I wish to add. The first is indicators, and the second is the valuation of biodiversity. Both are critical in the delivery of our biodiversity targets, yet in both there are huge gaps in our understanding. If we get it wrong, it could be very serious. I call for a rigorous assessment of any indicators that we choose to use, and for more research on the valuation of the non-monetary benefits of biodiversity. That area is still very poorly understood. We need to get those elements right in order to deliver what we need to deliver.

Professor Thompson: I thank you and your colleagues, convener, for having so many of us here for this discussion. We really welcome that. The remarks that have already been made are part of the conversation that we have been having with many of our partners in developing the biodiversity strategy.

Echoing many of the remarks that have already been made, I would say that we have three aspirations for biodiversity, the first of which is mainstreaming. At the outset, Adam Smith mentioned working with land managers, but there is a whole gamut of people and organisations that we want to work with, particularly in the health, education and transport sectors. Through working with those sectors, we want to make a real difference for biodiversity and make it count more.

The second aspiration is developing the ecosystem approach—trying to manage nature in a much more holistic way so that, when we think about flooding and erosion, we manage nature, habitats, species and ecosystems much better to sustain the underlying processes.

The third aspiration is something that Deborah Long touched on pointedly: doing more for nature itself—for habitats and species. Scotland already punches far above its weight in terms of caring for nature, and we want to do far more, so that Scotland leads the way in Europe.

The Convener: Indeed. We have to get into perspective where we are with many of the indicators, taking into account the nature of the language that we use about whether we are ambitious or whether things are being sidelined. We have to be careful not to beat ourselves up entirely.

Some participants have not spoken yet—I call Paul Walton next.

Dr Walton: I agree with what you have just said. There have been some major steps forward with regard to what Scotland has achieved for its biodiversity. The peatland store in the flow country is one that occurs to me. The Caledonian pinewoods seem to be expanding in area, probably for the first time in 4,000 years. RSPB Scotland and other members of Scottish Environment LINK have been very closely involved in that.

To an extent, there has been an impression among some public bodies that biodiversity is not a core economic business for the country. If we could achieve a shift in emphasis to bring it right to the fore, for example in the advisory community, and put the delivery of biodiversity by agricultural and other land managers absolutely front of mind, that would make a really big difference.

David Jamieson: I support everything that has been said so far. I am from a local authority background, so I can perhaps give a local authority perspective on some of the issues that have been raised. We have heard about the inspiration of people. Local authorities are at the heart of that, particularly in urban communities. We have heard about engaging with landowners. Local authorities are large landowners in their own right, and they strongly influence land management and land development issues elsewhere.

Like many organisations, we have a biodiversity duty, but I have heard very little of it, and I suppose that I am the main officer in the City of Edinburgh Council for biodiversity and its delivery. More emphasis needs to be placed on making local authorities and other agencies and bodies deliver on their biodiversity duty.

There are many reasons why we are not doing that. One key reason is that the issue is not the priority that it once was. In 2004, biodiversity was one of the big priorities, and we all had an emphasis on it, but that has been lost somewhat. I was surprised by the low number of local authority responses to the consultation, which is indicative of the lack of priority that local authorities give to the subject. We do not have the number of biodiversity officers or countryside rangers that we once had. We do not have the internal expertise and, increasingly, we do not have sufficient resources to turn to others for that expertise or support. Many communities in our cities and rural areas really want to engage with their natural environment. A good first step would be to take a step back and consider why we are not delivering our duty across the board.

The Convener: We will move on to questions, so that other people can come in and develop points.

Graeme Dey: I want to ask about raising awareness of biodiversity. We have talked about the state of play with biodiversity in Scotland, but there is a statistic that about 75 per cent of the population do not actually know what biodiversity is. How do we tackle that fundamental issue? Programmes such as Scottish Environment LINK's species champions would be a good starting point, if they are properly rolled out and we engage with schoolchildren. By teaching the public, and particularly children, about climate change, we are starting to see behavioural change. How can we bring that change in respect of biodiversity?

The Convener: Andrew Midgeley wants to comment.

Andrew Midgeley: I want to make another point, but I will save it for later.

A range of initiatives already exist. I suspect that Graeme Dey's point is about the degree to which they are successful. There is work in various sectors. In education, for example, there is the forest school initiative, which is all about getting people to engage with nature. There are also various high-profile initiatives such as the year of natural Scotland, all of which are oriented towards trying to raise awareness.

However, the critical question is: how can we bridge the gap to behaviour change? We can start only by getting people engaged in the first instance, which is about highlighting what is good about Scotland, what we offer and what our successes are. Other organisations that are represented round the table and that have a strong presence in engaging people in doing new things can then take that forward.

Deborah Long: Scotland is actually doing well in that respect, and we should take due credit; the Scottish public has strong cultural and social links with nature. However, there is a problem with the word "biodiversity", because it is a scientific word. If we say "wildlife" or "nature", people engage. The Scottish Environment LINK organisations—the environmental non-governmental organisations in Scotland—depend on people getting involved with and wanting to support nature, because that is where our membership comes from. The 0.5 million members of the public who are members of LINK organisations are there because they want to do something for nature and wildlife.

Publications that the RSPB, the SWT and Plantlife produce hardly ever use the word "biodiversity", because it is a turn-off. Instead, we talk about "nature" and "plants" and we make the language much more accessible. It would be useful to separate the language issue from the fact that we already engage successfully with the public and that the public are generally inspired by nature and want to do more for it.

Dr Walton: I back that up entirely. RSPB Scotland has a very active field teaching programme that engages large numbers of teachers and pupils. We try to provide materials that are useful for teachers and that feed into the curriculum. We operate the biggest kids wildlife club in Europe. We are really engaged, but the fact remains that, despite the successes, people are increasingly disconnected from nature.

If we want to improve the situation, the key is simply to put people in contact with nature. Getting kids outside is a critical part of that, so I applaud SNH's recent attempts at making that change, because it has been really effective in my part of Glasgow. We need to keep the momentum up on that because if people do not have such a connection they will not know what Scottish nature is and will not be able to look after it sustainably in the future.

David Jamieson: I agree with Deborah Long. People are more engaged than they have ever been before in my time working in biodiversity. Television programmes such as "Autumnwatch" or "Springwatch" attract massive numbers. People are engaged and interested.

Like many of the organisations that are represented here, we get inundated with requests for help in taking children out, taking groups out and taking individuals out at weekends. However, we are less and less able to meet demand; we are turning people down, if anything, and we no longer run many environmental education programmes that we ran only a few years ago.

Our forest schools programme, which is about educating teachers to get children out of doors, was hugely successful in Edinburgh, but it came to the end of its funding. As we all know, it is difficult

to get funding to continue a successful programme, but easy to get funding for a new programme. There are myriad such examples.

There is no lack of engagement. I understand that the word "biodiversity" is a problem, but people are inspired by nature and nature conservation. In all the work that we do in our parks and green spaces, when local groups and communities get together, the first things that they talk about—once they have got past dogs and litter—are bees, wildflowers, bats and birds. They have a great interest in such things and are often very keen to create such features on their doorsteps. Where possible, everybody tries to help them with that.

Lack of engagement is not an issue; use of the word "biodiversity" is, perhaps, a semantic issue.

Dr Keegan: In the Scottish Wildlife Trust, we would probably say "species richness" for "biodiversity".

My partner is a maths teacher at a secondary school in Edinburgh; I teach him about environmental issues that he can get into maths. I believe that, in primary schools, the curriculum for excellence works well in getting children outdoors. In secondary school, there is the eco-schools programme, but it engages with only a few children.

My partner used to run the eco-school at James Gillespie's high school. The difficulty is to get all the children in the secondary school engaged with biodiversity or nature. Appreciation of biodiversity—what it means and its value—needs to be in the curriculum. Without it, only the usual suspects—those who want to engage with it—will engage. We need to get everyone to appreciate it.

Professor Thompson: Andrew Midgeley mentioned the year of natural Scotland. We have a gift of an opportunity through that to up the profile and raise our game in promoting nature.

There is a core of people who are passionate about Scotland and passionate about nature—members of RSPB Scotland and the SWT, supporters of Plantlife and so on—but we must surely go beyond them. We must go into the education sector to reach people whom we ordinarily cannot reach. We must also go into the health sector. There is so much that we can do to improve people's welfare by providing them with greater access to the wonderful nature that we have.

If we could use the year of natural Scotland to get more people to interact with nature, get more from it and feel better about it, we would see the sorts of changes that were mentioned in relation to climate change. When people suddenly realise that we would, without nature thriving close and accessible to them, be poorer as a nation, a step change occurs. We are trying to achieve that through the strategy.

Professor Hester: I will be brief, because my point has been well made. It is about stressing the need for outdoor learning and biodiversity as integrated parts of the curriculum all the way through the school ages.

10:30

The Convener: We will ask the Cabinet Secretary for Education and Lifelong Learning for comments on that.

Dr Smith: I was going to make a not dissimilar point and back up something that Scottish Natural Heritage is doing very well. It is developing a curriculum tool with a wide range of land management organisations—including the GWCT, the NFUS and the Royal Highland Education Trust—that will be available on the web, as an access point. That builds on our experience of taking schoolchildren out. The Royal Highland Education Trust does a superb job in explaining farming. We partner it in going beyond the farm gate and explaining the conservation value that farming can bring when it is done well.

We have enormous experience of delivering those messages at the Scottish game fair at Scone every year, of course. There, we see the public's appetite for understanding what land management brings to what they see out on the hills. Most people still do not really understand that the heather moorland that many of us cherish is a man-managed environment that would not be there if it was not for investment and management.

That takes me back to the other awareness that we have already touched on. We must not kid ourselves: one of the key bits of awareness is awareness among the management community. That is the advice point that has already been made, and is a point that Paul Walton made very well. We need to ensure that land managers are aware of their ethical responsibility to have biodiversity as part of their operation, and that they are aware of the fact that that is not necessarily in conflict with their economic and food-production objectives. There can be both; people can farm for crops in the middle of a field and farm for birds at the edge of it. That kind of awareness raising is also very important.

The Convener: Graeme Dey can ask a brief supplementary question.

Graeme Dey: It is not so much a supplementary question; it is just an observation. In the recent parliamentary debate, my colleague Alex Fergusson described or explained biodiversity as "the balance of nature". It strikes me from what we

have heard that every time the "B" word appears, perhaps "the balance of nature" should be in brackets after it, by way of explanation.

Alex Fergusson: I would put "biodiversity" in brackets and call it "the balance of nature".

Jim Hume: I have a specific point, which I brought up in the biodiversity debate—perhaps we should now call it the better nature for Scotland debate. The European Commission has adopted a biodiversity strategy, as the Commission called it, with six targets, one of which is tighter controls on invasive alien species. We are now seeing ash dieback, of course. The Scottish Wildlife Trust has been concerned, as many others have been, about its coming in to Scotland and the UK at a rapid rate, perhaps because—inadvertently—of Government policy. That is not a criticism of the current Government; all Governments have wanted to increase forestry, of course, which is laudable. Ash is an indigenous species that has commercial value, and is a very good burner in the fire. Perhaps we have tried to increase forestry without the supply chain producing enough saplings or small plants to prevent having to import plants—if we can call importing from Europe importing. Are there other views on that specific point?

The Convener: We have not heard from Matt Shardlow, so we will give him a chance first.

Matt Shardlow: It is definitely important that we take more action to restrict the arrival of invasive species; we need to look much more carefully at importation into these islands, because we can bring in vast numbers of things that we do not really want here, particularly with pot plants. Ash dieback, flatworms, harlequin ladybirds and killer shrimps are examples. A stream of things are now coming into the United Kingdom. There are not only killer shrimps; there are demon shrimps. There are many things that could cause damage to biodiversity and crops.

Some 250 different species of invertebrate were living in a shipment of tree ferns that was imported from Australia, and the Food and Environment Research Agency estimated that half of them could cause pest problems in the UK if they got out. There are real problems and the issue needs to be looked at seriously. Countries such as Australia and New Zealand do not allow people to bring in that sort of stuff, so why do we have to import stuff into our country that causes huge pest problems, just because we are part of the European Union? It is a big issue and one that Buglife thinks we should take much more seriously.

Dr Walton: The issue is absolutely not a point of detail or a side issue in any way. There is no doubt at all that the impact of invasive non-native species is one of the fundamental drivers of biodiversity loss globally, so the issue is extremely serious. Our Atlantic oak woods in the west are, arguably, the biodiversity pinnacle in Scotland—they are unbelievably special and are of massive global significance for mosses, lichens and invertebrates—but a high proportion of the best sites are in unfavourable condition because of rhododendron invasion in those areas. We have to do something about that.

The take-home message is that we, collectively—by which I mean everyone in the world—have to be much smarter about how we move animals and plants round the planet. A draft EU legal instrument on the issue is due to be published around now and will work its way through to becoming either an EU directive or a regulation. Invasive non-native species is the only big driver of biodiversity loss that does not have a dedicated EU law. Everyone should be aware of that instrument as a huge one-off opportunity to do something about the issue. Scotland cannot really do something on its own, because it involves all our trading partners and, critically, what we export. It is a brilliant point to raise and it should absolutely be raised here.

The legislation that Scotland has in place—the Wildlife and Natural Environment (Scotland) Act 2011, which this Parliament passed—leads Europe. I have been involved in the EU discussions for the past five years, and it is pretty clear that we are well ahead. From the NGOs' point of view, the Scottish working group on invasive non-native species has been productive. We are doing well, but we need to keep up the momentum and, where we can, provide input to help to progress the European measure.

Professor Thompson: I will add to that briefly. I absolutely support Paul Walton's initial point that invasive species are one of the greatest global threats to biodiversity. It will take a global effort to hit it. In Scotland, invasives cost us about £240 million a year—about a quarter of a billion pounds. The key to reducing the impact is prevention, which means trying to look ahead and to stymie invasives. The core of our strategy is about preventing the introduction and spread of invasives.

The Convener: That is a sobering thought.

Professor Hester: My point follows on well from Des Thompson's. One critical issue is early identification. It is inevitable that such species will come in, just because of how we now live globally. Ash dieback is a good example of how we act only when there is already a problem, by which point it is probably impossible to deal with it. It is absolutely critical that we have early warning—when something has been found in perhaps only one or two locations. Historically, we have been

bad at acting at that point. If we act when only one or two discoveries have been made, we can do something about the issue relatively quickly and cheaply. At present, when we act, it is too late.

I would press for early warning and early action before something becomes a problem. We can learn about that globally and we should have global links to identify issues. With ash dieback, there was already a good example in Denmark. We could learn from that and decide to act after finding a problem at one or two locations.

Jonathan Hall: I will largely reiterate points that have already been made. Thinking about the issue of invasive non-native species drew my attention to the Wildlife and Natural Environment (Scotland) Act 2011, to which Paul Walton referred. Equally, in relation to land management and the water environment, there is the water framework directive and its implementation in Scotland, critical sections of which deal with issues such as alien species.

However, I suppose that my comment is more a question. I am not so sure that we have our priorities right on some of these things. We have the tools, but are we using them as effectively as possible? Perhaps the tools need a bit of refining or honing if, as I agree is the case, the issue is far more about prevention than it is about cure. We seem to be able to put in place contingencies pretty quickly once a problem arises—we are pretty good at that, particularly as animal health issues creep further north, in the agricultural context—but I think that the real key is prevention in the first place. Although that is difficult to achieve in an open trading economy such as we have in Scotland, the UK and Europe, efforts must and should be made in all sorts of sectors.

The Convener: The international organisations that deal with free trade will need to think about the cost of free trade.

Alex Fergusson: My question follows on from Alison Hester's point. I absolutely agree with the need for early detection—I have no argument with that at all—but I also wonder whether we perhaps need to think again about what we do when we have failed to detect early. To take two examples that are local for me, the American signal crayfish is rapidly taking over the waterways of Dumfries and Galloway, as is Japanese knotweed. There comes a stage when such species are no longer invasive but have become part of our life and part of our—dare I say it?—biodiversity. Where we have failed to detect a non-native species early, do we perhaps need to look again at how we approach it? It seems to me that continuing with a preventive approach to something that has already arrived in our landscape is not satisfactory. Certainly, experience locally suggests that that can have serious impacts not just on biodiversity but socioeconomically, with impacts on local economies and that sort of thing. Do we need to go further than just early prevention?

The Convener: Perhaps contributors could take that point on board.

Deborah Long: I want to follow up on Alison Hester's point, but I will make a contribution on that point as well.

One very good feature of the Wildlife and Natural Environment (Scotland) Act 2011, which Paul Walton mentioned, is that it gives responsibility to agencies for groups of species. For example, as Paul Walton will know, when New Zealand pygmy weed was discovered at an RSPB reserve, we lost time because the issue was bounced around due to the fact that there was no clear lead to which people could go immediately to address the problem. Obviously, that is a fairly recent act, but it has put in place a very important mechanism that could be used.

On Alison Hester's point about early detection, one thing that is vital to early detection is taxonomic expertise. In Scotland, we are losing taxonomic expertise, particularly for fungi, lichens and bryophytes. For example, the mycologist with the relevant expertise retired from his post at the Royal Botanic Garden Edinburgh roughly seven years ago and was not replaced, so we have a gap in respect of experts who can identify such species early enough. We are beginning to train up people through apprenticeship schemes, but we currently have a significant gap at the top in those three areas of taxonomy.

Dr Keegan: I want to make a couple of comments on ash dieback. First, I think that the media coverage and furore over ash dieback, both in this country and in the UK as a whole, show just how much the public care about wildlife and what goes on in the countryside.

Secondly, when I attended one of the minister's initial stakeholder meetings, it became very noticeable how little research other countries have done on the causes, whys and wherefores of ash dieback. When I asked the chief exec of Forest Research why that is the case, he intimated that other countries have so many different tree species and have such species-rich habitats that losing the ash tree is not so important to them. However, if we lose ash from Scottish woodlands, what will we replace it with? We would notice the difference. We need resilient species-rich habitats that can bounce back from such perturbations, but I do not think that we are there yet. It is probably true that many invasive species that come in do so because they are filling a gap that exists.

10:45

Dr Smith: Like a complete sook, I was going to pick up on Mr Fergusson's point. I think that he used the phrase, "We're a' doomed," in his speech in the parliamentary debate on biodiversity.

Alex Fergusson: It was only to suggest that we are probably not all doomed.

Dr Smith: Indeed. That is exactly the point that I was going to back up. Your point is well made. What do we do when we have the problem? Community engagement may well be important in that regard. The example that comes to mind is mink control. The GWCT developed a technique—which we built on traditional gamekeeper techniques—for tracking mink, so that communities could track mink up and down their river systems. When mink were detected, they could be trapped and removed, to the benefit of water voles, which are one of our most attractive and cute and fluffy biodiversity action plan species.

The message that comes out of that is that communities can play an important role in reporting and monitoring the presence of alien invasive species. I applaud—dare I say it?—some of the developments south of the border that are utilising modern technology. For example, people can use apps to quickly record sightings of unpleasant species and report them back to a central point. Rapid reporting will enable us to deploy solutions. The success that has been achieved in controlling mink and enhancing water vole populations in the Cairngorms proves what Mr Fergusson said: we're not a' doomed.

The Convener: I am glad to hear it. Let us see whether the official reporters get that.

Jim Hume: I would like to round off the debate that I started on alien invasive species. As Maggie Keegan rightly said, the ash is a very important tree to Britain, whereas in Europe it is just part of a wider matrix of trees. Flooding is an issue that the committee has discussed. Interestingly, ash is also used to reinforce river banks in Scotland, so if the ash goes, we could see some erosion in the future—perhaps we are a' doomed, after all.

As I said initially, it looks as if ash trees have been brought into Scotland from the lowlands of Europe because we have not been able to produce enough saplings. Would it be helpful if Governments, in their efforts to increase woodland cover, encouraged the use of indigenous trees? The use of locally produced stock would prevent disease from coming in and would avoid the risk of cross-pollination with our stock, thereby saving our own genetic species of ash, which I am sure is slightly different to other stock, such as European stock.

The Convener: I think that you have answered your own question. That is a fair point.

Jim Hume: I agree.

The Convener: He agrees with himself.

Dick Lyle might have a question. Is it a question or a comment?

Richard Lyle: It is a question; in fact, I have two questions.

I do not believe that we are all doomed but, during the debate that has been mentioned, I remembered a film that I saw a number of years ago—"Soylent Green", starring Charlton Heston. I will not give away the ending, but it was quite a poignant film.

We are now getting questions about the state of the bee population, which I was informed that Maggie Keegan knows quite a lot about. Bees help our biodiversity—nature—through cross-pollination et cetera. What is the problem? Last year we visited a bee farm—there were no bees there, because they had all been hired out in the fields. It concerns me to read in the papers that much of the bee population is disappearing. Will you comment on that?

Dr Keegan: I will say a little, but given that Matt Shardlow, from Buglife, has been running a campaign since 2009, I would like him to give some of the background information. The Scottish Wildlife Trust became involved in the issue this year. Three important studies published in *Science* and *Nature* suggest that neonicotinoids at sub-lethal doses are harmful, not just to bumblebees but to honey bees. We do not know the effects on other insect pollinators, because no one is doing research on the subject.

On the talk about our all being doomed—if I can say that in English—insect pollination is worth about £43 million to the Scottish economy. Honey bees pollinate only a few Scottish crops; our fruits, such as strawberries, raspberries and apples, require bumblebees and other insect pollinators. It is about more than just honey bees.

We are talking about a devolved issue. Scotland could lead the way and place a moratorium on the use of insecticides. We are coming to the end game for neonicotinoids, but we need to think about what farmers will use. That is the big question. We are not suggesting that farmers should use nothing. The Scottish Government should consider what else we can use in future.

I will let Matt Shardlow speak—sorry, convener, it is not for me to say who speaks. [*Laughter*.]

Matt Shardlow: Maggie Keegan and Paul Walton talked about the importance of ecosystem services and the value of wildlife. Nothing is clearer than the value of pollination of crops and

wild flowers, because it is easy to measure. Pollination is worth £43 million in Scotland, so an important part of the economy is directly down to insects.

The difficulty that we have is that wild insect populations and pollinators are in trouble, in general. Whether we are looking at moths, butterflies, bumblebees or even ground beetles, there are declines in about two thirds of species, with a quarter to a third increasing. Those are UK statistics, I am afraid, but in general the principle is that most populations are declining. EU work on bees and hoverflies has also shown that more than twice as many species are going down as are going up. The trend is therefore very bad and quite rapid in terms of the length of time that relationships between plants and pollinators have been evolving.

There is growing concern about neonicotinoids. It is important to know that neonicotinoids function very differently from other insecticides. They are usually applied to the seeds, which means that the farmer has automatically applied the pesticide to the crop before they planted it or detected a potential problem. Because the insecticide is on the seed, it enters the tissues of the plant and stays there for the entire life of the plant. It also enters the soil. As the plant grows, it produces pollen and nectar, and pollen and nectar feeders feed on it. In doing their wonderful service for us and for wildlife, the pollinators are poisoned by the neonicotinoids. Over the past few years, more and more research has pointed to a much greater risk from neonicotinoids than there was originally thought to be.

Honey bees are of great concern but are quite well covered in the tests—there is a comparatively large amount of research on them. There has been appallingly little research into the impact on other pollinators. A big game changer this summer was when Dave Goulson at the University of Stirling and his team published a paper on bumblebees that showed that the sorts of levels of neonicotinoid pesticides that are found in the flowers of crops are causing an 85 per cent reduction in the number of queens that bumblebee colonies produce. It is difficult to imagine that knocking out so many bumblebee queens will not have a big impact on wildlife.

We have been campaigning for quite a while now to suspend the use of these chemicals until they can be shown to be safe. The EU plant protection products directive is based on the precautionary principle. We think that we have enough evidence now, because more than 30 reports in the past three years have shown that there are greater levels of risk than we had suspected. The evidence has built up, so we believe that it is now time for decision makers to step in and take action before it gets to the point at which we have lost what we value.

That is where we are at the moment. It would be good to see some action from Scotland on the issue. Perhaps you can undertake your own review of the science. You could take a political lead in trying to understand where neonicotinoids are being used with public money, for example by local authorities in municipal plantings, and whether that use can be reduced to give a greater opportunity for pollinators in urban areas and in the countryside in Scotland.

The Convener: Of course, farming involves quite a lot of public money as well. It would be useful if Jonnie Hall responded to that. Maggie Keegan made the point clearly that we are talking here about finding a means to change; it is not an accusatory approach but one that is about building up evidence.

Jonathan Hall: Absolutely. That is exactly what I was about to say. I am grateful to colleagues for setting out in an objective way what is a very sensitive and difficult situation.

Bees are hugely significant for the interests of Scottish agriculture. We will never deny that—in fact, quite the reverse, because we want to see a thriving bee population, with all the benefits that that would bring. We have the value of pollination but, from the food production point of view, there is huge value in applying effective and cost-effective pesticides. They must of course be safe pesticides, but safe boundaries can be defined in different ways. Scottish agriculture and European agriculture must operate to all sorts of stringent requirements. Applying pesticides is not a cheap hobby and farmers do not throw them around for fun—far from it; if they could avoid using pesticides, they would do so, because pesticides are an additional cost for their production systems.

We have a dilemma as an industry regarding the use of pesticides, but I think that we have recognised that and are now taking it on board. Things are clearly happening at a European level regarding pesticides, and they will happen at UK and Scottish levels as a consequence. We as an industry must sit up and take note. Arguably, though, any plea must go beyond just the environmental and agricultural interests to the research interests, because we must start to look at alternative approaches. That means not just alternative pesticides but different forms of crop systems management and so on.

In many senses, agriculture has been here before. We go through periods of production versus environment challenges and, ultimately, there are some trade-offs, some of which become unacceptable, which means that we must think again. I suspect that the current situation is a

classic example of that. However, the industry's awareness, the research that informs it and the advice that it gets must be better and make it ready to take more action.

The convener mentioned public support and public funding for agriculture—I take that as read. Equally, though, in order to deliver safe, wholesome food products, which are the bedrock of Scotland's huge food and drinks industry, and active agricultural management of the vast majority of the Scottish landscape, we must find a compromise whereby efficient, effective and sustainable intensification can take place.

The Convener: A number of people will want to comment on what has been said.

David Jamieson: There is no doubt from what we have heard and what we have all read in the media and elsewhere, including research documents, that the decline of bees and other pollinators is one of the biodiversity issues of our day. I think, though, that it brings opportunities in the sense that it has also captured people's imagination. We talked earlier about engaging people, and bumblebees, honey bees and so on are increasingly charismatic species. I do not know how many bee cafes and bee hotels we have built with schools and other groups in Edinburgh, but they are very popular, and people now recognise the link, which would perhaps not have been the case a few years ago.

11:00

If we are looking to engage people on biodiversity, pollination is an area that we could emphasise. Perhaps we could change some of our policy and thinking. Urban areas probably have an increasing amount of pollinating species. We are doing some research at the moment with the University of Edinburgh and the University of Bristol to determine the best urban habitats for pollinating species.

There are some historical issues. Allotments legislation does not allow people to keep bees on an allotment because they are classed as livestock, and people are not allowed to keep livestock on an allotment—although a few beekeepers have surreptitiously turned a blind eye to that. In Edinburgh, we are trying to overturn that to allow the active keeping of bees in an urban environment.

On green roofs, for example, the urban habitat is increasingly being used for bees and other pollinating species. I know that many things need to happen to turn the situation around, but there is a wee opportunity to use the plight of bees to get across the importance of biodiversity and the interlinkages between species and habitats.

The Convener: Thank you for that. We now come to the wide-open spaces.

Dr Smith: As far as the wide-open spaces are concerned, it is back to the fields. I will pick up on the issues that Jonnie Hall, Matt Shardlow and Maggie Keegan were discussing. They laid out neatly the point of view that we need food, and we need biodiversity and pollinators, too. Jonnie used the phrase "sustainable intensification" in relation to agriculture. There might be a solution, or at least something of a mitigation, in the sense that we can have sustainable intensification of conservation. If there is something that the committee might wish to consider for a future debate—not necessarily on the Scottish biodiversity strategy but perhaps on the SRDP or CAP reform issues—the pollen and seed-rich mix option for margins might be a significant mitigating factor for some of those issues. If we could get one thing incorporated into our future Scottish agricultural environment prescriptions, that would be enormously useful. We have done research that suggests that that increases pollinator abundance to a marked degree.

We must be slightly cautious, however, as we have found that that option might be sucking some of the pollinators—hoverflies and bees—off the hedges, which is a curious twist. When planting close to hedges, there might be reduced pollination rates on the hedge, but enhanced pollination, and perhaps enhanced survival of the pollinators, in the mix. There are potential ways of managing that difference, and it comes down to the idea of farming the middle of the field for food and farming the edge of the field for biodiversity—I use the word.

Angus MacDonald: I am glad that the discussion has moved on to neonicotinoids. The issue has been getting more and more coverage in the farming press in recent weeks and months, and it seems that the pesticides are causing significant damage. I am glad that that is being acknowledged by the agricultural industry.

I have a brief question. Could the panel—perhaps Maggie Keegan or Matt Shardlow—identify which countries in Europe have already introduced a moratorium, or indeed a ban, on neonicotinoids?

Matt Shardlow: Four countries have already put bans in place. None of the bans—except the one in Slovenia, I think—is complete. Slovenia has a pretty complete ban. Italy banned certain products because of fears and damage to the honey bee population several years ago, and that has been implemented and maintained through the legal system there. France has banned a number of products on sunflowers in particular, including one product last year that has been authorised here but automatically banned or

restricted in France. Germany has also put in place certain restrictions on the uses of neonicotinoids. Just last week, the Dutch Parliament voted to ask the European Commission to put in place a full moratorium for all neonicotinoids.

The EC has said that it will respond with a legislative attempt to partially apply the precautionary principle. That is better than not applying it at all, and we look to see how that will work out.

The Dutch Government might move to ban neonicotinoids unilaterally if a ban is not put in place across other countries.

Davy McCracken: The EC is considering the Dutch proposal to introduce an EU-wide consensus on how the issue is dealt with. It will deal with that in Brussels tomorrow, I believe. Currently, as Matt Shardlow says, a range of countries have already put some form of restriction in place. In addition to that, Germany, Austria, the Czech Republic and France are supporting the Dutch delegation's request that there be an EU-wide consensus on how the EU tackles the issue.

The Convener: Jonnie Hall, could you give us a summary of the crops that are affected?

Jonathan Hall: It would certainly impact significantly on major arable interests in Scotland, particularly in terms of cereals, oil-seed rape and potatoes. There are other pollination issues in relation to soft fruits, which are important in some parts of Scotland.

Our position is that, although we recognise the challenges and the issues, jumping straight into an outright ban on such products carries a cost, and we need to consider the impact of that across Scottish agriculture plc and, indeed, the wider interests of Scotland. Therefore, we need to find some way forward that satisfies the interests of biodiversity and food production. That is not going to be easy, but we should not jump to any knee-jerk conclusions or take any knee-jerk actions.

Jim Hume: I have a farming interest, but it is up in the hills, so I do not have much use for arable sprays and so on. To ask the daft-laddie question, how long have neonicotinoids been used in Scotland for agriculture? What was used before that? In other words, is there an alternative?

Dr Keegan: They were introduced around 1994. Records from the 1980s show that oil-seed rape yield did not go up after that point, so whatever was used before produced the same yield. Neonicotinoids are not a silver bullet. Obviously, the farmers need to use something, but what they are using now has not increased the yield, compared with what was being used before.

Do you want me to go further?

The Convener: I think that Davy McCracken wants to add something.

Davy McCracken: This is not my area of expertise, but I am taking advice from some colleagues.

The SRUC accepts that increasing evidence is emerging about the adverse impacts of neonicotinoids, but our current position is that, until there is more evidence, there is no compelling evidence that there is a major issue, as long as they are used appropriately. However, we recognise that things are moving swiftly in terms of additional evidence at a UK and an EU level.

Currently, these chemicals are used in Scotland to target pest species that would be much more difficult to target in other ways because they get into the crops so quickly and start damaging the crops so quickly that you would need a strong monitoring policy to stop them doing damage.

The previous treatment that was available, lindane, was banned for quite correct environmental reasons. Some of the pests that we are using the current suite of insecticides to deal with arose subsequent to lindane being banned.

I appreciate that the debate that we have had has been specifically about insecticides, but I would not want anybody to go away from the meeting thinking that, if we had a moratorium on the use of neonicotinoids tomorrow, that would solve all the honey bee and wider pollinator problems because—to return to the start of our discussion this morning—there is a host of additional land use and land management issues that also contribute to the fact that pollinators do not have sufficient resources to maintain their populations and life cycles.

The Convener: That is an important point.

Matt Shardlow: We should also consider the countries where different neonicotinoids have been banned. France and Italy have been monitoring productivity and yield rates and have seen declines in neither. They have managed to find other ways of achieving the desired effect, such as changing cropping patterns and using different chemicals to get around not having neonicotinoids to use when they have had to use something.

Dr Keegan: Right at the beginning, I should have thanked the committee for considering this matter.

I am heartened by the farmers' attitude. Obviously, we need to find solutions and I urge the Scottish Government to do that.

The Scottish Government has a new chief scientific adviser, Professor Louise Heathwaite, who advises on rural and environment matters. I

strongly recommend that she speak to the scientists who have carried out much of the research about which we have been talking: Professor Goulson and Dr Connolly. One of them is at the University of Stirling and the other is at the University of Dundee. They have a host of knowledge on the matter.

I hope that, in the future, we will have a better, more sustainable system of cropping that is good for the farmers and good for our wildlife.

The Convener: Our committee will take the issue seriously and take it forward. This discussion is, of course, only an introduction to the subject. We will follow it through in as balanced a fashion as possible.

We move on to another topic of discussion with Claudia Beamish.

Claudia Beamish: At some point in the proceedings, I would like to seek the views of the witnesses on marine ecosystems—dare I say marine biodiversity?—and, in particular, on the different interests that sometimes compete with, and sometimes work in harmony with, marine biodiversity. I do not know whether this is an appropriate time to do that or whether we should discuss other land use issues in relation to biodiversity.

The Convener: It is entirely appropriate. We have until 11.30, because we need to do other business as well. We can discuss Claudia Beamish's question just now and have room for 10 minutes at the end on other land issues.

Dr Walton: In the north-east Atlantic over the past couple of decades, there has been a 70 per cent reduction in the biomass of zooplankton. They are the little, often microscopic, animals that graze on phytoplankton, the plants that are the primary producers in the marine environment. Zooplankton are the absolute linchpin in marine food chains.

Some organisms breed according to the cues of temperature change and some breed according to the cues of the way that day length changes. The sea surface temperature has increased by about 1°C and there is growing scientific evidence that that has knocked the timing of the food chain.

Marine biodiversity is under immense pressures from incredibly intractable threats. There is no doubt about that. Conservationists tend to respond to such news either by wringing their hands, gnashing their teeth and saying, "We're doomed," or by trying to do something to improve the conditions for the wildlife and the biodiversity using the methods that we have at our disposal.

The RSPB's experience shows that the latter approach really can work. It is a bit like having a clapped-out car. You are not entirely sure what the problem is but, if you put a new battery in it and tweak some other bits in it, you can often get a bit more life out of the thing. In our opinion—and there is very good evidence to back it up—this is a climate change-driven effect and will, at best, be a very long-term thing.

11:15

However, we can get certain conservation mechanisms working in the marine environment now. To do that, we have the marine protected areas agenda, which I am sure the committee has discussed on a number of occasions. That system is required under European law in the same way that sites of special scientific interest are required to be designated on land. However, the RSPB and other Scottish Environment LINK members feel that the system is incomplete; for example, it does not adequately cover certain mobile species such as seabirds. Seabirds are the top predators in the marine environment—they are at the end of the food chain—but the effects are beginning to filter through even to them, with long periods of breeding failure in our internationally important seabird colonies. Scotland has a very high proportion of Europe's seabirds but—make no mistake—they are in a bad way. Their breeding performance has been low not just for a year or two, which long-lived birds can cope with, but for long periods and, as a seabird biologist, I find it heartbreaking to visit some of the colonies in Shetland that I worked on in the early 1990s and witness the losses that they have experienced. It is incredibly striking and very moving. We need to sort out protected areas in the marine environment and deal with the seabird situation.

The response that we have received is that seabirds will be dealt with under the European special protection areas designation but at the moment there is not a single site to protect seabird foraging areas. The RSPB is very heavily involved with tracking seabirds to identify their foraging hot spots and we look forward to feeding that information into the SPA system. However, we are also beginning to see a pattern that suggests that we will need not only to protect the big hot spots but designate as marine protected areas the places where the food supply for top marine predators can be encouraged, protected and managed in order to cope with the varying conditions in different years. After all, the animals will visit different areas in different years.

We really need to start looking at protecting our best areas. Given that this is such a serious issue for the marine environment, we are slightly concerned that we are not getting there yet. For example, although the Firth of Forth is one of the most important and best known sandeel areas in the world, it seems to have been missed. We have

ground-breaking marine legislation; we look forward to the introduction of what we think is an overdue national marine plan to achieve coherent and co-ordinated sustainable development in the marine environment; and we are very keen that every effort be made to designate a properly ecologically coherent series of marine protected areas and European marine special protected areas.

The Convener: I do not think that we are going to have time to explore those issues but we acknowledge your eloquent arguments and will most certainly take them on board as things come round in the committee's crowded programme. Claudia Beamish and the rest of the committee understand that that is part of biodiversity, and we will take the issue seriously. I thank her for the question.

In the short time that we have left, I want to come back to my initial question about the achievements that we could look back on in 2020. From your organisations' point of view, what will we have to do first of all to kickstart an approach that will take us to something worth celebrating in 2020?

Graeme Dey: Don't all rush. [*Laughter*.]

The Convener: Right, then—I will start with Alison Hester. We have heard a lot about research, but people might not realise the variety of research that is being carried out.

Professor Hester: That is probably quite a good introduction to my point. No one has yet mentioned peatlands, so I will use them to highlight some excellent examples of how the best possible research knowledge has been integrated and brought together, primarily with Scottish Government funding, to produce a decision support tool that identifies the carbon benefits of restoring any particular area of peatland versus the potential costs in other areas. The tool that has been developed is now in the good hands of SNH. The next step will be to make the tool fully geographic information system—GIS—friendly, so that anyone with a GIS on their computer can use it. At the moment, the tool involves the use of a mixture of computer and paper.

I would urge that kind of approach to biodiversity action. It integrates the best possible scientific knowledge and a clear identification of the uncertainties, and then action in the context of the wider costs and benefits, such as has happened in that peatland restoration, which is an excellent example of using the science to best effect, including considering the uncertainty, which is critical.

The Convener: As species champion for the rusty bog-moss, I completely agree with you. All those fluffy birds and animals that other members chose need to sit on something, so it is important that we protect peatlands. The committee as a whole has taken that on board from its visits, but thank you for that focus.

Davy McCracken: Further to that, I know that the committee appreciates that we have in Scotland a wide range of biodiversity, which we are keen to preserve. However, the reality going forward is that there are a large number of issues that we need to try to tackle and, if we are to make real progress by 2020, we are likely to do so by trying to do a smaller suite of some things rather than trying to do everything.

In answer to your question, I suggest that we need to define clearly what our priorities are to ensure that we target action at some habitats—peatlands is a good example—where we know there will be some additional benefits for other species. We need to know clearly what we want to target, have clear, achievable targets leading up to 2020 and ensure that we use all the mechanisms available—from my point of view, those include the common agriculture policy and the SRDP—to target appropriate actions in the right place at the right scale. Just as important, during the period between now and 2020, we need to ensure that we monitor the effectiveness of those actions so that, if necessary, we can change things as we go forward rather than wait until 2020 before realising either that we have not achieved our targets or do not have the information that would tell us whether we have achieved them.

The Convener: I can allow you no more than a minute each, folks.

David Jamieson: Going back to my original point, I would like the Government to ask local authorities and other agencies what they are doing to meet their biodiversity duty. Anyone can put a list together, so I would like those bodies to be challenged. I would also like good practice to be recognised and shared so that, in finding out about the strengths and weaknesses out there, the Government can support all the organisations and individuals involved, including local authorities and local biodiversity partnerships. That would help people to get on to a really positive track with the biodiversity duty.

One further plea is that we should recognise and better support, by whatever means, our local biological records centres. Information is increasingly at the heart of what we need to make decisions, but the biological records centres have been quite badly treated over the past decade.

Andrew Midgeley: The context, I guess, is that the 2020 challenge for biodiversity is huge, in relation to what we could effectively spend money on. However, we have to accept that public budgets are getting smaller, and we expect that

the SRDP will probably be smaller next time round, too. We are seeing public spending cuts across the board, and that has implications for what we can deliver. That picks up on the need for prioritisation.

The key issue that I want to flag up is the need for alternative mechanisms. We need to continue to explore and develop mechanisms that enable us to capture value in different ways. At the moment, perhaps the closest such initiative is the peatland carbon code, which admittedly deals with a different agenda but will have biodiversity benefits. Finding ways of enabling others to deliver without necessarily having to depend on public budgets will be critical.

The Convener: The forestry code might be used in much the same way, I guess.

Jonathan Hall: Being very simple and blunt about it, I think that my one-word answer would be "bracken". Rather than say much more about that, I will let you think about that for yourselves.

I will make a comment that I hope is slightly more constructive, on a clear opportunity that we have—Andrew Midgeley almost touched on it. A lot of public funding is coming through agriculture, particularly in pillars 1 and 2 of the CAP—as I said, both pillars are in a significant reform process—and what those two elements deliver should be more joined up in the mechanisms that they use and in relation to compliance issues.

I will give a simple suggestion as an example. Ecological focus areas are part of the European Commission's proposals for greening under pillar 1 of the CAP, all in the name of biodiversity—that is the label. They are absolutely fine and we can absorb them into Scottish agriculture—and do that pretty well—if we can ensure that all land that is currently ineligible for receipt of the single farm payment is eligible to deliver some environmental benefit under EFAs.

Areas of gorse and so on are being determined to be ineligible for support payments because they do not support agricultural production, but they have an environmental and biodiversity value, which we should recognise. That should be extended to farm woodlands, wet flushes and some of the seed-rich margins that Adam Smith hankers after. We should turn them into eligible areas and integrate them into the mainstream of public support for agriculture.

The Convener: Each speaker has half a minute now.

Professor Thompson: The great progress that we have made is the conversation that we are having, in comparison with where we were when the strategy came out. Alison Hester touched on peatlands. The International Union for Conservation of Nature peatland programme was a huge success, because it brought together the researchers, the land managers and the NGOs and we had the conversation.

I suggest that we desperately need to develop that approach over the next seven years to 2020. We need to be ambitious, realistic and inspirational. Of the different sectors, the one sector that we need to get more involved in what we are doing is the business sector. Businesses do well out of brand Scotland and it would be great if they could put a bit more back into nature, to try to help us. It would be great if that happened and we reflected on that by 2020.

Deborah Long: The decline in pollinators reflects the decline in plant diversity—I thank Graeme Dey for highlighting our recent report on plant diversity. Tackling that decline comes down to wider land management, which we have discussed a lot this morning. Ultimately, we are talking about resources.

To be perfectly blunt, we need to put resources into biodiversity and biodiversity conservation. The Scottish rural development programme is one option for that. Resources need to be put towards buying the public good of maintaining ecosystem services, of which biodiversity is the life-blood, if I can put it like that.

Ideally, we need to put more money into the SRDP, and we need to ensure that that money goes to the places where it is needed—it must go to the right areas for the right thing. That is one way in which we can start to tackle the decline in plant diversity and in pollinators and all the impacts of that throughout our environment.

Nigel Don: I will return to a point that I made in Parliament a couple of weeks ago. I want to see whether I am wrong. It seems that there are so many species that we will never be able to do enough research—there is absolutely no way that we can know enough about the 90,000 species that live in this country. Surely biodiversity depends on habitat diversity, so we need to look after habitats and increase their variety, even if we will never know what is achieved.

The Convener: Each speaker has a quarter of a minute now.

Dr Walton: We need clearly defined biological actions and outcomes, which must be monitored and reported against. We need to respond to trends. We also need a clear and explicit definition of roles and responsibilities across the Government and public bodies. For NDPBs, that means being explicit in the grant aid letter. For bits of the Government such as the Scottish Government's rural payments and inspections directorate, that means having people in the relevant delivery group of the biodiversity

structures who are senior enough to make the decisions and embed biodiversity at the front of minds across Government departments, which will provide the lead that business, industry and the rest of society will follow.

11:30

I want to say something about the notion that biodiversity is somehow a modern thing, and that we are being groundbreaking here. The cultural significance of sea eagles to the people of Orkney 5,000 years ago is clear from the tomb of the eagles in South Ronaldsay. At the end of the 18th century, Robert Burns apologised to a mouse that

"Man's dominion
Has broken Nature's social union".

The cultural significance of biodiversity in this country is not marginal; it is not just a detail or an afterthought. We are up to our necks in the cultural importance of biodiversity. If we do not get the biodiversity strategy right, we will not be doing the country any sort of service.

The Convener: Again, that was eloquent.

Matt Shardlow: I am tempted to raise the spectre of the spider crawling across the cave. We need to come at the biodiversity strategy again and again and get it right—we have to ensure that it works and that we save our biodiversity. We have heard so much today about how important it is. It is important to agriculture, to fisheries and to people. It strikes me that the strategy has lots of support in principle, with people wanting it to succeed.

I will reiterate the points that have been made. The strategy needs clear actions and clarity on who will be doing what, with monitoring of the actions and outcomes. On where we will get to with the species, they must be the bottom line of how well the strategy is doing and what it is achieving. We must have clear advances on habitats, ensuring that local authorities and other decision makers have the strategy a little bit higher up their list of priorities, so that it gets done.

Dr Keegan: I cannot compete with Burns, but you will not be surprised to hear me emphasise national ecological networks, as mentioned in the Scottish biodiversity strategy. We need to allow species to move around across our fragmented landscape. Our species need genetic exchange, otherwise they can die out.

The Convener: Green corridors and much more.

Dr Keegan: Exactly.

The Convener: Finally, we have Adam Smith on large green areas.

Dr Smith: I will simply rely on my name to bring a Scottish focus—there's one for you.

I offer three reflections. First, on evidence-led conservation, we must ensure that what we are going to do on the ground is backed by some of the research and monitoring that justify it. Secondly, we need to intensify our conservation. Scotland is a small, busy, crowded piece of ground already. If we are going to deliver the biodiversity goods, we will have to choose in a short time—2020 is not far away—to conserve and manage. Finally, we are going to have to be adaptive and flexible. Adaptive management will have to become part of all our repertoires, so that we feed back what we have learned in short order and change what we do for the better.

The Convener: Thank you all for giving us an extremely stimulating discussion. This is the beginning of our review of the biodiversity strategy, and I have no doubt that we will be meeting many of you in due course to follow up the points that have been made. Each member of the committee will probably pick half a dozen and follow them up—we do not have time just now. Thank you very much for your participation.

The Parliament takes the subject seriously. In the biodiversity debate that we held, all the parties in the Parliament showed their interest and their concern, and I believe that this is the start of trying to firm up ways to achieve the ends that we have talked about today. Thank you very much for being here, and I wish you a safe journey.

We will move on to discuss the Aquaculture and Fisheries (Scotland) Bill in private.

11:34

Meeting continued in private until 12:20.

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