



OFFICIAL REPORT
AITHISG OIFIGEIL

Net Zero, Energy and Transport Committee

Tuesday 7 March 2023

Session 6



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Pàrlamaid na h-Alba

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NET ZERO, ENERGY AND TRANSPORT COMMITTEE

8th Meeting 2023, Session 6

CONVENER

*Edward Mountain (Highlands and Islands) (Con)

DEPUTY CONVENER

*Fiona Hyslop (Linlithgow) (SNP)

COMMITTEE MEMBERS

*Jackie Dunbar (Aberdeen Donside) (SNP)

*Liam Kerr (North East Scotland) (Con)

*Monica Lennon (Central Scotland) (Lab)

*Ash Regan (Edinburgh Eastern) (SNP)

*Mark Ruskell (Mid Scotland and Fife) (Green)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Dr Daniela Diz (Heriot-Watt University)

Professor Colin Galbraith (Joint Nature Conservation Committee)

Dr Deborah Long (Scottish Environment LINK)

Dr Ruth Mitchell (James Hutton Institute)

Mercedes Villalba (North East Scotland) (Lab)

CLERK TO THE COMMITTEE

Peter McGrath

LOCATION

The Mary Fairfax Somerville Room (CR2)

Scottish Parliament

Net Zero, Energy and Transport Committee

Tuesday 7 March 2023

[The Convener opened the meeting at 09:30]

Decision on Taking Business in Private

The Convener (Edward Mountain): Good morning and welcome to the eighth meeting in 2023 of the Net Zero, Energy and Transport Committee.

The first item on our agenda is to make a decision on whether to take items 4, 5 and 6 in private. Item 4 is consideration of the evidence that we will hear today on the outcomes of the 15th United Nations biodiversity conference of the parties—COP15—item 5 is consideration of a draft report on the Energy Bill and item 6 is consideration of the committee's work programme. Do members agree to take those items in private?

Members *indicated agreement.*

COP15 Outcomes

09:31

The Convener: Our next item of business is evidence on the outcomes of COP15. I refer members to the committee papers.

At the summit in Montreal, a new global framework was agreed for halting and reversing biodiversity loss across the world. To take stock of COP15 and what its outcomes mean for Scotland, the committee will hear from a panel of Scotland and United Kingdom-based experts in biodiversity policy.

On behalf of the committee, I am pleased to welcome Dr Daniela Diz, who is associate professor of international ocean governance at the Lyell Centre, which is based at Heriot-Watt University and Professor Colin Galbraith, who is the chair of the Joint Nature Conservation Committee. I would have liked to have welcomed Professor Peter Hollingsworth, but he is unable to attend because of a family bereavement. I am sorry for him and I am sorry that we will miss his evidence. We are also joined by Dr Deborah Long, who is the chief officer of Scottish Environment LINK. Joining us remotely we have Dr Ruth Mitchell, who is head of the biodiversity and ecosystems group at the James Hutton Institute.

Thank you all for accepting our invitation. We are delighted to have you here. We have a series of questions for you, the first of which will come from the deputy convener, Fiona Hyslop.

Fiona Hyslop (Linlithgow) (SNP): Good morning, and thank you for joining us today.

In translating the outcomes of COP15 into actions, how will it be ensured that the targets will be delivered at global level, given that previous agreements have failed in that respect? Has there been progress on the global implementation mechanisms for biodiversity? We saw the signing of the high seas treaty at the weekend, so I will come to you first, Dr Diz, given that you are professor of international ocean governance.

Dr Daniela Diz (Heriot-Watt University): I am just back from New York, so I am a little jet-lagged. We had to extend our stay in New York until yesterday because of the overnight negotiations.

Previously, none of the Aichi diversity targets under the Convention on Biological Diversity had been achieved. However, in light of the global biodiversity framework that was adopted at COP15, there has been some strengthening of the implementation and reporting processes. That is different from the Aichi biodiversity targets; it provides an enhanced opportunity for state parties

to implement the global biodiversity framework rather than the previous globally agreed targets. The text of the treaty that was agreed in New York—it has not yet been adopted—will also help with implementing the global biodiversity framework.

The Convention on Biological Diversity applies both within and beyond national jurisdictions. All the targets in the global biodiversity framework are supposed to be implemented by 2030, so I hope that the high seas treaty that was agreed in New York will come into force before then so that it can help in achieving the targets—especially target 3, on marine protected areas, protected areas in general and other effective area-based conservation measures; and target 14, on mainstreaming biodiversity values into policies and so on, which includes environmental impact assessments and strategic environmental assessments.

Fiona Hyslop: Clearly, Scotland's waters extend extensively into the Atlantic. There are obviously nearshore issues but, as you said, there are also international connections through the high seas treaty and so on. What are the implications for Scotland?

Dr Diz: I think that the outcome will be positive, because transboundary harm can be prevented. One implication is that, in relation to activities that take place within national jurisdictions but which could have an effect on areas beyond national jurisdictions, there are strengthened mechanisms for sharing environmental impact assessments to ensure that activities do not pose a threat to areas beyond national jurisdictions. Decision making will still be at the national level—there will be no decision making at the global level—but there are mechanisms for enhancing information sharing and consulting on impact assessments. That applies to other nations that could have an impact on areas beyond their national jurisdictions, including areas of the high seas and activities on the high seas that could pose a threat within national jurisdictions. Marine protected areas on the high seas could protect biodiversity that would benefit Scotland, because ecosystems do not respect jurisdictional boundaries. In that sense, I think that the outcome will be positive.

Fiona Hyslop: Thank you very much for joining us after having been in New York.

Professor Galbraith, is there now a better chance that the COP15 outcomes will be delivered than there was under previous agreements?

Professor Colin Galbraith (Joint Nature Conservation Committee): They have a better chance of being implemented, but implementation will still be a challenge at the global level. Historically, around the world we probably have

not monitored and reported properly, but we now have an opportunity to do so. With regular reporting—every two years, I hope, which goes back to the CBD—and with effective monitoring, more information will be provided and there will be more opportunities to comment in the years ahead.

We can consider the targets. Target 1 is to have 30 per cent of land and sea in protected areas by 2030, which is only seven years away, so we need to take action now, and to be seen to take action now—not just in Scotland, but globally. It is key that we have reporting and monitoring to ensure that data and information can be discussed regularly at the global level.

Delivery will still be a challenge. I go from days when I am optimistic about delivery to days when I am pessimistic about delivery at the global level. We need to keep our eye on the ball in relation to how the United Nations co-ordinates reporting.

I think that I am giving half an answer. Delivery will be a real challenge, and we need to learn from previous mistakes, but the CBD targets represent a fantastic step forward. They are very clear and ambitious in their global wording. In the next year or two, there will be an opportunity to push forward on delivery.

Fiona Hyslop: Dr Long, do you have any comments on global implementation? What do you think about the COP15 outcomes?

Dr Deborah Long (Scottish Environment LINK): I agree with what has been said. The challenge is in pulling people together. This time, we stand a much better chance of making progress because everyone is aware of the scale of the challenge and that we need to work together.

If I can give you a little bit of homework, I definitely recommend that you watch the “Wild Isles” series, which starts on the BBC on Sunday. It is a UK-wide series, but I am sure that most of it will have been filmed in Scotland. The series will give you a real insight into why we need to act now and why the global biodiversity framework is so important.

On translating the framework into what happens in Scotland, there is no doubt but that the framework is ambitious.

The good thing about it is that it is action focused—the targets are very action focused, which is great—but there is clearly a need for speed. As Colin Galbraith suggested, there are, in effect, only seven growing seasons before 2030. For a gardener, a forester or a farmer, seven growing seasons is nothing, so that really underlines the need for speed and action.

We can achieve that by mainstreaming biodiversity so that it achieves the same level of power, if you like, as the climate change plan, for example. We can ensure that it is delivered right across Scotland, rather than it being stuck in one or two divisions.

We also need to bring people on board. That is, I think, where programmes such as “Wild Isles” will help, because they really illustrate why we need to act now.

Fiona Hyslop: Can I bring in Dr Mitchell, who is joining us remotely? Do you have any comments about global implementation?

Dr Ruth Mitchell (James Hutton Institute): Thank you for inviting me. There are some really nice ambitions, but the key will be in their implementation and the action that is taken. Deborah Long has already mentioned the importance of mainstreaming across different departments. That is really important—not just at the global level, but locally in Scotland—in order to make biodiversity a priority across all departments so that it is not seen as something that is only for those who are directly involved in the environment but as something for people who are involved in business, economics and society. Biodiversity needs to be seen as being up there with the climate crisis.

The targets need to be translated into SMART—specific, measurable, achievable, relevant and time bound—targets. We have heard about the importance of ensuring that they are time bound. As has already been mentioned, we need the appropriate funding and monitoring to achieve those targets. Targets need to be translated into things that are actionable, and funding and monitoring are really important.

Fiona Hyslop: It would be helpful if you could advise us on what that might look like with regard to our ongoing scrutiny.

Colin Galbraith might be able to help us with a view on what influence or leadership the Scottish Government—or Scottish institutions, including our scientific community—provided at COP15 or in the run-up to negotiations, which was a key period. What impact did the Edinburgh declaration have, for example?

Professor Galbraith: I chair the UK Joint Nature Conservation Committee, so what I say needs to be evenly spread across the UK, although I might be slightly biased towards Scotland, I have to say.

Prior to CBD, at the UK level, we produced a joint statement from the four national agencies—NatureScot, Natural England, Natural Resources Wales and the Northern Ireland Environment Agency. That statement laid out key issues that

should be addressed at CBD. Following that up with the presence of the Minister for Environment and Land Reform at the conference and with the Edinburgh declaration had a real impact.

The real trick is in using the Scottish expertise in universities and institutes in nature conservation. Historically, a lot of my work has been on translation from the academic and scientific world to practical conservation action. What we saw in the lead up to the Montreal conference was very much the Scottish input to the UK discussion then to a global discussion.

On leadership generally, the reality is that the world looks to Scotland for a lead on nature conservation. Historically, we have considered many issues around species and land-use management, and marine conservation in particular, which we have heard about. In the next year or two, we will have a real opportunity to show what we are doing here in Scotland—we will come to the biodiversity strategy—to the world in a positive way.

That is not to say that it is perfect. At the moment, I do not think that any country is perfect with regard to implementing the outcome from the conference, but by having a strategy document drafted beforehand that will be modified and developed as we properly begin to digest the targets, we are in a really good position to influence that wider debate, going forward. From my perspective, that wider debate is within the wider UK; the JNCC’s remit is then to take that into the global discussions that will happen over the next year or two.

Scotland has been hugely influential, and there is the potential to be just as influential going forward, but we must keep our eye on the ball with regard to what we are trying to deliver.

One example is when we talk about having 30 per cent protected areas. Protecting our land and sea at that sort of scale is a really good target but, behind that, we must still consider whether that is effective. We have still to look at monitoring, species populations and overall habitat health to ensure that we are doing the right things in protected areas. That is about having numerical and ecological targets, looking at what is really happening, then ensuring that things are really getting better.

We have a history of monitoring really well in Scotland and the UK, and there is a real opportunity coming in the next year or two to be more influential than we perhaps have been.

09:45

Fiona Hyslop: I can see Daniela Diz nodding: perhaps you want to comment.

Dr Diz: Sure. A strength of the Edinburgh process has been adoption of the global biodiversity framework in COP decision 15/4 and adoption of COP decision 15/12, which is about subnational Governments having a voice in the process—in implementation, reporting and monitoring of the global biodiversity framework. There was a commitment from the UK, as a party to the convention, to work with Scotland and the other nations to report on implementation.

There are a few timeframes that we should watch for in terms of complying with what was agreed on in Montreal. The national biodiversity strategies and action plans—NBSAPs—that the UK will have to update and review to align with the global biodiversity framework are due by COP16, which is in the fall of 2024. It will be important to ensure that the UK Government works with the Scottish Government to ensure that the Scottish strategy is taken into consideration in the NBSAPs.

In terms of reporting, there are two important dates. The first stocktake-type reporting on the CBD will be 2026, then there will be reporting in 2029. It will be important to ensure that the reporting and review mechanisms in Scotland align with those timeframes.

Fiona Hyslop: I will ask Dr Mitchell about the role of Scottish institutions in the lead-up to COP and afterwards. Can you reflect on the contribution that your institution has made?

Dr Mitchell: The research institutions play an invaluable role in providing the research to underpin our understanding of the biodiversity crisis. Those institutions look not only at the impact on biodiversity of direct drivers including pollution, climate change and land use, but at indirect drivers and societal changes that drive biodiversity loss.

The James Hutton Institute has done a lot of work on peatlands and carbon storage. That is important not only in relation to the climate crisis but in relation to the biodiversity crisis, and the biodiversity that is important in such habitats. We also do a lot of work on many of our other vulnerable habitats in Scotland—for example, our Atlantic rainforests—and consider whether we can restore those habitats.

It is really important that we have that underpinning research so that we understand how and why biodiversity is changing and what we can do to reverse the changes. We also develop techniques to monitor our success in restoration and in implementation of what we put in place. There are a lot of new techniques out there nowadays that we can use to monitor biodiversity.

Fiona Hyslop: Deborah, what is Scotland's place internationally and globally in the biodiversity

crisis, both in the lead-up to and outcomes of COP15?

Dr Long: I will make two quick points. One is that Scotland is showing the way through the Edinburgh declaration. Scotland has lots of opportunities to bring national, local and regional authorities and organisations together to deliver the targets. That is shown very well in the Edinburgh declaration. When we think about it, we see that the subnational, regional, local and city authorities between them manage an awful lot of land and biodiversity, so their contribution, through the Edinburgh declaration, will be a big step forward for the global biodiversity framework.

The second way that Scotland can demonstrate leadership is by testing approaches. A key area is the pattern of land ownership. We need to find ways of building nature networks to reconnect nature, which will have to cross ownership boundaries. There is a great opportunity for Scotland to demonstrate what that looks like. That will not be easy, but because of the way in which Scotland is set up, mechanisms can be put in place to ensure that regional and local land managers and owners, as well as the local communities, come together. Scotland therefore has a good chance to test approaches and to show what can be done.

Fiona Hyslop: That is an interesting point about international leadership. Thank you. I pass back to the convener.

The Convener: I would like to apologise. My good manners deserted me at the start of the session; I should have welcomed Mercedes Villalba, who is joining the committee today. I will give you a chance to ask questions at the end, Mercedes, and I am sorry for not introducing you earlier. That was my mistake.

The next questions are from Liam Kerr.

Liam Kerr (North East Scotland) (Con): Good morning. Dr Mitchell, you talked about implementation of the COP15 outcomes and translating those into SMART targets—that is, targets that are specific, achievable, time bound and so on. You also talked about funding and monitoring. Do the new biodiversity strategy and delivery plan align to the GBF targets and the items that you have spoken about? How translatable are the targets from COP15 into domestic Scottish policy?

Dr Mitchell: The delivery plan will be key. I know that the reason why we had a draft Scottish strategy was so that there was time to translate the outcomes of COP15 into the strategy. However, the delivery plan is really the key, because the strategy still needs further work to make the targets as SMART and specific as we need. I understand that NatureScot has started

translating across the targets from COP15 to the biodiversity strategy, but those links need to be made really clear. There is definitely further work to be done to make the targets more specific, targeted and time bound.

Liam Kerr: My next question is for Deborah Long. We have only seven years, and Dr Mitchell has said that more must be done and that we need to get the plan together. Have we really got time?

Dr Long: Time is definitely short. We should have been doing an awful lot more before now, but we are where we are. There are definitely areas where we can and must pick up the speed. The Scottish biodiversity strategy is a good start. As Dr Mitchell says, the delivery plans will be key. They are to be five-year delivery plans, which means that the first one will nearly take us up to 2030, so it has to hit the ground running. It has to have the SMART targets, but it also needs to bring everyone on board, because the targets cannot be delivered by NatureScot on its own, or by any public agency on its own.

There are mechanisms that we can use to ensure that we bring enough people into the process to achieve the speed and momentum that we need in the next five years. One of those is mainstreaming. It should not be just the environment directorate that is concerned with the issue. For example, national planning framework 4 and the land use strategy should contribute to meeting the targets. One of the biggest things that we could do in Scotland is to tackle the deer management issue in the uplands, as that would address the target on halting biodiversity loss in biodiversity rich areas, which was one of the targets that the clerks pulled out for discussion today. Tackling that would take us a long way towards where we need to be in 2030.

There are lots of other examples, but the key thing is to mainstream this work and take responsibility for it at Cabinet level, so that everyone out there can see that the issue is important and that we want to meet the targets. Let us bring on board as many people as possible, because we all need to be involved in delivering if we are to be successful, which we need to be.

Liam Kerr: The worry seems to be that there could be a degree of complacency.

Colin Galbraith, you said earlier that the world looks to Scotland and that we show the world what we are doing. I found that quite surprising, given that Scotland failed to meet the Aichi targets that were mentioned earlier. I think that we met nine of the 20 targets and the ones that were met were not quite the key ones—that is perhaps just my personal view. On that note, the GBF talks about increasing the ambition on finance for biodiversity,

and target 19 talks about scaling up finance for biodiversity. We have just had a budget. Colin Galbraith, has that target been met?

Professor Galbraith: There are several issues in there. Having worked in international nature conservation for 30-plus years, I am convinced that the world looks to the UK and to Scotland for examples and for leadership. We have something to offer in terms of the historic approach to nature conservation. As Deborah Long said, on the mix of land use and species management, both terrestrial and marine, there is something that we can offer the rest of the world, to say, “Look, this is how we are doing it, what do you think?”

On finance, there is never enough money going into nature conservation. It is as basic as that. Given the new framework from the CBD, we will undoubtedly focus on the 2030 targets—and rightly so—but there are also 2050 targets that are more profound. I will read a little bit:

“The integrity, connectivity and resilience of ecosystems will be maintained, enhanced, or restored ... by 2050”.

That is goal A in the new agreement. That is a huge challenge. We have to do several things, one of which is to look after what we have now. As Deborah Long said, we are only seven years away from 2030, so let us really protect and look after what we have right now because for the next five to seven years, this is what we will have. By 2030, let us put in place the innovative plan that the strategy is beginning to build towards, but also keep an eye on that longer 2050 plan. The Scottish biodiversity strategy looks to 2045, so there is a longer-term view there. However, each phase is important and it is really important that more resource comes into it, progressively.

Are we in the right place now? No, I do not think that any country is following the Montreal agreement on finances. We have to make clear arguments as to why very scarce budget should be deployed in such a way. It is about quality of life, maintaining green space, and looking after our fresh water, our uplands and our marine environment for the good of people and for the good of nature. We are entirely dependent on the ecosystems around us. Getting that message over will hopefully lead to greater resource coming in. However, there is one enormous job to do across the whole of Government in Scotland and in other countries to deliver that.

Liam Kerr: Thank you. I will make this the last question for just now. Daniela Diz, are there any priorities or targets that the committee needs to be particularly aware of and that we need to say are key targets that we need to prioritise? Are there any targets that will be particularly difficult to achieve that the committee needs to focus on?

Dr Diz: On prioritisation, and building on what Colin Galbraith was saying, there is a lot that Scotland has been doing already and in relation to the biodiversity strategy, effort could go into building on what has been achieved. One of the things that is referred to in the strategy, but perhaps not enough, is blue carbon, which is important for the committee in relation to delivering nature-based solutions. Although salt marshes are referred to in several places, as well as peatlands, which are super important as carbon sinks, there are other relevant ecosystems and marine ecosystems. The Scottish Government has done audits, for example in the Orkney islands, that identify several other marine ecosystems that play a very important role in carbon sink and storage, and it is much broader than salt marshes and seagrasses—it goes on to kelp, bryozoans, brittle star ecosystems, and a number of other things. The Government strategy says that it will be identifying ecosystems for restoration and protection but it is important that it also looks through the lens of blue carbon and ensuring nature-based solutions.

10:00

That relates to target 8. However, it is also a cross-cutting issue. It can be integrated into target 3 on marine protected areas and other effective area-based conservation areas—something that is growing in attention, globally. The Food and Agriculture Organization has produced guidelines for the fishery sector, for example, to align with the CBD criteria from 2018 on other effective area-based conservation measures—OECMs. That could also be further explored in more depth, either through the delivery plans or further elaboration in the strategy.

It is also related to target 3, which concerns 30 by 30—the global target to protect 30 per cent of the planet for nature by 2030—because it involves marine protected areas, terrestrial protected areas and OECMs that will help to achieve that.

It also involves target 1, which is on spatial planning. Scotland has done a lot on marine spatial planning, and the qualifiers in target 1 around integrated, equitable and biodiversity-inclusive marine spatial planning are also an area on which Scotland could provide leadership to the world.

It also involves target 2, which is on restoration. The Scottish biodiversity strategy has put a lot of emphasis on ecological restoration. In light of all those different ecosystems, that is an area on which Scotland can provide leadership.

Target 5 is not really mentioned in the strategy, as far as I can see. It relates to fisheries as well as forestry. Fisheries is not explicitly mentioned in

target 5 at the moment, but it is relevant—it talks about bycatch and the protection of vulnerable ecosystems. Those types of term are already included in the strategy, but it does not refer to target 5 and an ecosystem approach to fisheries—for example, the implementation of an ecosystem approach more broadly.

As Deborah Long mentioned, a mainstreaming of biodiversity across all sectors, policies and legislation is key. That is target 14.

It is challenging—all those areas are challenging. Scotland has been providing leadership on those areas, but that could be further enhanced, to show to the world what can be done.

Just one final thing on target 14: in the past, CBD has adopted voluntary guidelines on biodiversity-inclusive environmental impact assessments and biodiversity-inclusive strategic environmental assessments for both terrestrial and marine ecosystems. Taking a look at those guidelines and seeing how that could be integrated into UK and Scottish legislation would be a step forward towards the implementation of target 14 on mainstreaming.

Liam Kerr: I am very grateful. Unless anyone else wants to respond to that question, I will hand back to the convener.

The Convener: Thank you very much, Liam. We go back to Fiona Hyslop for another question.

Fiona Hyslop: Two of the notable targets for the global framework are the 30 by 30 target and the restoration target, which is:

“Have restoration completed or underway on at least 30% of degraded terrestrial, inland waters, and coastal and marine ecosystems”.

What is the scale of the challenge in biodiversity conservation in Scotland? I am the nature champion for Scotland’s extraordinary blanket bogs—obviously, our peatland restoration is absolutely huge—so I am interested to hear your comments on that in particular.

Can you also be a bit more specific about what type of programmes you would expect to see in order for us to meet the 30 by 30 target and the restoration target?

I will go to Dr Ruth Mitchell first, if that is okay, and then to Deborah Long.

Dr Mitchell: The key is the word “effective” in the target, because it is very easy for things to be protected on paper but for that not to have the effect on the ground. A lot of work is going on to work out how we might designate or protect—on paper—the 30 per cent, but the key is going to be in making sure that that is really effective. In many of our protected areas, land is already protected,

but many damaging activities are still going on, both on protected land and in protected sea areas. It is not just about the designation; it is also about implementing that on the ground. That is key.

Fiona Hyslop: Does Deborah Long want to contribute?

Dr Long: We need to consider three elements as part of achieving the 30 by 30 target, which is a big challenge. To achieve it, we will need to expand activities. For example, about 17 per cent of Scotland's land is designated, protected and managed for nature. To increase that to 30 per cent, almost 980,000 hectares of land would need to come under protection for nature. That is a big challenge, but it is not an impossible one. Within that, we can start to look at OECMs, which Daniela Diz mentioned. That can help, but expanding the area is a big challenge.

We need to improve the condition of the protected areas that we have, which are not as good as they could be. We need to minimise external impacts, so that they do not have so much impact on protected areas.

Another aspect is connecting such areas together. Ecological connectivity between protected areas and areas that are outside protected areas, and between habitats that are outside protected areas, will be fundamental in taking us towards ecological resilience. For the future, we need our ecosystems to be resilient so that they maintain the ecosystem services that we all rely on—that concerns not just species and access to nature for our health and our mental wellbeing but flooding, productive soils and pollination. We need to build all those things, and connectivity will be one of the biggest elements of that.

For nature restoration, we need to look at habitats and species. The Scottish biodiversity strategy can do more on species; the strategy's target is not as ambitious as the one that is in the global biodiversity framework, so that needs to be looked at more.

As for how we achieve restoration, one obvious area of work involves the agricultural subsidy. To come back to the finance point, a portion of that money needs to go to conserving biodiversity. LINK calls for us to work towards 70 per cent of that funding going to nature and climate-friendly farming. If we do that, we will also contribute to the 30 by 30 target for farmland, and farmed land makes up about 70 per cent of our landscape across Scotland, which is a big chunk.

We then have woodland. It is welcome that the forestry strategy is up for review. We need to use woodland more for natural regeneration and for connecting our areas of forestry, which includes having more native species and ensuring that

schemes are assessed on a long enough timescale for people to go in for them. If a forester adopts a natural regeneration scheme at the moment, they have only five years to prove that it will work. Five years is not very long for a forester; the period needs to be much longer—something like 15 years—so that people are given more encouragement to go for schemes.

I have two other quick points. On uplands, I have mentioned deer. If we tackle the distribution and number of deer across Scotland, we will bring an awful lot of our uplands back into better condition. Arctic heath, lichen communities on the Cairngorm plateau, montane woodlands and peatlands would all benefit from lower deer densities.

Fiona Hyslop: Liam Kerr asked about public finance. It is understood that private finance will also need to be mobilised to get anywhere near some of the targets. There are question marks about whether such finance has been used appropriately in international carbon offsetting.

What is your view, or Scottish Environment LINK's view, on whether we should use private finance to support restoration? What would be the optimum programme that was equitable and reflected the need to meet the targets? We need balance in the finance system in dealing with private interests, which are investing extensively, as we have seen recently.

Dr Long: To be honest, I do not think that we will tackle the issue without private finance—there will not be enough public and charitable funding to do it, so we need to look at private finance. We need to be careful and learn the lessons of the 1980s, so that we do not end up with a lot of forestry being put on peat, for example.

There must be a very clear balance between the benefits to the local community of private finance going into nature and climate schemes, and the risk management strategies that we need to put in place so that private finance actually benefits biodiversity and carbon.

There are a few mechanisms that we need Government to put in place so that we know that private finance is going into the right kind of action, in the right kind of place—the right tree, right place argument. We should also ask how local communities benefit from schemes. Conserving ecosystems has a global benefit, but how do the local communities benefit from that? Also, how do we distribute the benefits of private finance going into a biodiversity credit market that is not well developed at the moment? We are still doing the thinking on what that market might look like, but there is a big role for Government in ensuring that what comes out at the end of any biodiversity credit market restores nature into the long term. A

scheme might look at just five or 10 years. On a financial timescale, 10 years is pretty good, but on an ecological timescale, it is the blink of an eye, so we need to try to match up those two timescales. I think that Government has a very important role to play in looking at the risk not only in terms of time but in terms of scale of action, given that we want such action to be spread across the landscape, and across local communities, so that everyone benefits from it.

Fiona Hyslop: Convener, if we are okay for time, I would like to bring in the other witness.

The Convener: We are fine for time.

Fiona Hyslop: Daniela, do you want to come in on this point and on what programmes are needed to meet the targets? Do you have any reflections on what you have heard from the other witnesses?

Dr Diz: I completely agree with Deborah Long. We need to be careful. We have learned some lessons elsewhere in the world in relation to communities, especially with mangrove projects. For example, in some African countries, there are carbon credit schemes on which the local communities were not listened to. It is important to have all the accountability in place and checks and balances from Government to make sure that private financing is streamlined in a way that does not undermine local interests and local communities' interests. However, I agree that there is need for private financing.

On the interface between the CBD and the UN Framework Convention on Climate Change, I think that what was achieved in Montreal can really enhance what has been on-going at UNFCCC. A UNFCCC ocean and climate change dialogue is going on at the moment. Although the Intergovernmental Panel on Climate Change has only developed methodologies for assessing carbon sinks and emissions from degraded areas for marine ecosystems—especially in relation to salt marshes, seagrasses and mangroves—there is an opportunity now with the CBD to further develop the other blue carbon ecosystems that we mentioned, in terms of both the scientific methodology for assessing their role in carbon sinks and the biodiversity benefits and ecosystem services.

I think that the GBF has provided the bridge that is needed between the climate regime and the biodiversity regime. There is a lot of opportunity to build on that, but with caution and with the Government playing an important role in terms of regulation and ensuring that the checks and balances are in place so that nature-based solutions—using the definition that was adopted by the UN Environment Assembly last year, I think—can also be achieved in that context. It needs to be ensured that the nature-based

solutions do not harm biodiversity, which was one of the fears with regard to the term “nature-based solutions”. There need to be solutions that increase biodiversity-positive outcomes instead of ones that just use nature but could pose a threat as well. They also need to be for the benefit of local communities and everyone else.

Fiona Hyslop: Do you think that Scotland is underdeveloped in its utilisation of its marine assets—the seas around us—when it comes to that twin-track approach of tackling the crisis of biodiversity loss as well as the climate crisis in relation to the carbon sink aspect?

Dr Diz: I think so, but Scotland is not alone; all the nations in the world have underutilised them. The studies that Scotland has put forward can be built on, and Scotland has a great opportunity to provide leadership to the world in that context.

Fiona Hyslop: Thank you very much.

10:15

The Convener: Mark Ruskell and Jackie Dunbar have supplementary questions on this issue, and then we will move on to Mark's other questions.

Given that Deborah Long mentioned agricultural subsidies, it is only fair that I remind the committee that I am part of a family farming partnership. We are in receipt of agricultural subsidies, and we manage land, including woodland. I have made that declaration to the committee previously, and it is noted in my entry in the register of members' interests, but I just want to point it out so that there is no dubiety.

Mark Ruskell (Mid Scotland and Fife) (Green): Thank you for that reminder, convener.

We have spoken quite a bit about the 30 by 30 target, which is, I suppose, the headline of the framework. That makes me think about the other 70 per cent, though. Deborah Long has spoken about agricultural subsidy reform.

In relation to marine space, is it enough for Governments to designate marine protected areas, put in place management measures and police them, or should we be looking beyond that to wider ecosystem management? For example, should we consider the impact of dredging and trawling on inshore areas? Is there a danger that the 30 by 30 target will, dare I say, focus all the attention on the parks, if you like, and that we will lose the ecological coherence that we need across the management of wider seas?

Dr Diz: Given that there is so much of a push to meet the 30 by 30 target, during the negotiations on the GBF many countries emphasised the issue of what would happen with the rest of the targets.

All the other targets can contribute to the other side of the 30 by 30 target, and they, equally, need to be achieved.

For example, target 1, on spatial planning, relates not only to the 30 per cent that will be protected but to the areas surrounding those areas. Everything—100 per cent—needs to be sustainably managed. We have obligations under the Convention on Biological Diversity and the UN Convention on the Law of the Sea to protect and preserve the marine environment, and those apply to 100 per cent of it. The GBF just tries to streamline things. What are the priority targets and actions that need to be put in place in line with our legally binding obligations under those conventions and elsewhere?

Target 1, on spatial planning, would certainly contribute in that regard. Target 2, on restoration, focuses not just on the 30 per cent that will be protected but on other areas. Target 4, on threatened species and other species that need to be conserved, applies not only to that 30 per cent, and that is also true of the targets relating to fisheries management and forestry. As we have discussed, target 14 is about mainstreaming biodiversity values across all policies and instruments—that needs to cover everything.

There has, of course, been a lot of focus on the 30 by 30 target, but our efforts should go towards all the targets and managing 100 per cent of land and sea sustainably.

Mark Ruskell: Do any of the other witnesses want to add to that before we move on?

Professor Galbraith: I will add something briefly. There is a danger in that regard. The 30 by 30 target is fantastic and a real step forward, but we must look at it in the context of climate change, too. We have the twin emergencies of nature loss and climate change, so how do we meet the 30 by 30 target? What are we actually protecting? How sustainable is what we protect? The 30 by 30 target will probably dominate, and I hope that we look not just at the numbers, in relation to scale, but at effectiveness. However, the other parts of the Montreal agreement are really profound in what they mean for the management of our land and seas.

Is there a danger that the 30 by 30 target dominates? Yes, there is. We can have a wider debate and discussion over the years to come, but let us look at the target in the context of the twin track of nature loss and climate. From a nature conservation point of view, that begs some really profound questions. What are we trying to restore? What level of restoration do we want? How do we prioritise? We need to grapple with those issues.

Mark Ruskell: Yes—those are long-standing issues in relation to conservation.

The Convener: I think that Jackie Dunbar's question is for Deborah Long, so I will bring her in to see whether we can tie the questions together.

Jackie Dunbar (Aberdeen Donside) (SNP): I come to Deborah Long first. You have mentioned deer management a couple of times. Can you go into more detail on that, and explain what you think the issues are and what solutions are needed to address those issues?

Dr Long: I will say something about the marine aspect, too, but I will do deer first.

The "State of Nature" report is produced every three years by a community of environmental non-governmental organisations that also includes public agencies such as NatureScot and Royal Botanic Garden Edinburgh. The report looks at the state of nature across Scotland and at key drivers of change. In the uplands, one of the key drivers of change is deer numbers. The sort of thing that we look at is the fact that the carrying capacity of Scottish upland habitat, which refers to montane woodlands and above, is roughly five deer per kilometre, but some areas of Scotland have 64 deer per kilometre.

If you look at a graph, you will see that deer numbers have gone up massively since the 1990s, and that shows the scale of the problem. That is having an impact not only in upland areas but in lowland areas, with the impact of roe deer. It limits woodland regeneration; natural regeneration of trees is very difficult when there are high numbers of deer at that level. In addition, erosion tends to increase where deer are concentrated, although it is not just deer that cause that. Humans and cattle will erode soils if there are too many of them on a single path; you have only to go up a Munro to see that.

If we can manage the deer population to bring it down to carrying capacity, those habitats will be in a much better condition to be restored and to hold more of the native species that should be living there. If we can tackle the deer population in Scotland and bring it down to a level that is much closer to the carrying capacity of Scottish habitats, that would be a massive win. It is not easy, and I know that what I am saying is very controversial in some areas, but it would be a big win.

Jackie Dunbar: If I remember rightly, the figures that we are seeing mean that the deer themselves are starving. You can correct me if I am wrong, but I think that that is what I found out previously.

Dr Long: There is an animal welfare issue when there are too many deer and the habitat simply cannot support them. Where there are too many deer, it is an environmental issue and an animal welfare issue.

Jackie Dunbar: Would you suggest a cull or moving them on to other grounds if possible?

Dr Long: There are too many deer to keep on moving them around. We lost the natural predators of deer a very long time ago and humans are all that we have to control them, so we need to increase cull levels. The other aspect, as you mentioned, is that there is simply not enough food for them. That means that we are looking at deer control.

There is another advantage. Scotland currently puts a huge amount of funding into fencing. If we could divert some of that funding from fencing to deer management, we would have an active longer-term, larger-scale solution to one of the biggest drivers of change in Scotland's uplands.

Monica Lennon (Central Scotland) (Lab): I have a brief supplementary, convener.

The Convener: It must be a brief one. I am sorry—I am just worried about time.

Monica Lennon: I am sorry to grill you on sustainable deer management, Deborah, but the issue has come up now. You might not want to put a number on it, but what is the extent of culling? I read recently that there are millions of deer in Scotland. When you talk about sustainable deer management, do you have an optimal number in mind?

Dr Long: It depends on the habitat. Some habitats can carry more deer than others, so the situation would need to be assessed for each habitat, I am afraid. Unfortunately, there is no magic number or simple answer.

Mark Ruskell: I will pick up on marine, because I think that Deborah Long wanted to talk about that. First, however, I ask Dr Mitchell whether she has anything to add.

Dr Mitchell: I have nothing to add on the marine area, but I was going to come back on biodiversity credits at some point.

Mark Ruskell: Okay; feel free to come in on that.

Dr Mitchell: I agree that Scotland needs to look further into the issue of biodiversity credits, because there is a danger of multiple different credits and systems being devised, and there is potential for unintended consequences if they are not used correctly and if we do not understand the science behind how those credits are devised. It is important that we understand the fundamental science behind how credits are calculated.

Biodiversity is not simple. With carbon, it is essentially one measure—you can measure carbon—but with biodiversity there is a whole range of different species, and benefiting some species or some habitats might have negative

consequences on other species or habitats. As the potential market for biodiversity credits develops, we need to be aware of unintended consequences.

Dr Long: You asked whether it is enough to focus on the 30 by 30 target. No, it is not enough. In relation to the other 70 per cent, we need to connect habitats together on land and at sea. I point out that, although we have 37 per cent of Scottish seas under marine protected area designation, less than 1 per cent is strictly protected. If you look at an example that is strictly protected—Lamlash Bay is the example that is always given—you will see that the benefits that strictly protecting the area gives to local communities and the fishing community are significant. We need to expand our less than 1 per cent of strict protection up to 10 per cent within the target and make sure that the 37 per cent that we already have as marine protected areas is protected for nature. The benefits of that are much more than just protecting for nature—it benefits local coastal and fishing communities.

Mark Ruskell: I move on to questions around supply chains and consumption. It is good to see that the framework recognises that as an issue. Every time I buy clothing or food that has been imported, or even drive an electric car, the impact of that wider supply chain on the planet and biodiversity is always at the forefront of my mind. Do we have enough clarity at the moment about the impact of supply chains and consumption in Scotland? Is there transparency in corporate or Government reporting in that area?

Professor Galbraith: The answer to that question is no. The JNCC has developed an indicator that looks at global consumption per country. We took that to the meeting in Montreal, and it is being used as one of two indicators by the CBD to calculate a country's national draw on the world. We are very happy to circulate details of that to the committee.

One of the key targets in the framework is to cut global food waste by half. If you think back to that consumption indicator and the potential damage that could be reduced on the environment if we cut food waste by half, it would be a major step forward if we could develop a common indicator that is used around the world to tell countries where they are at. We will certainly progressively take that back to the next CBD COP and the one after in order to look at the methodology to do that, because we need to understand our global footprint much better, whether that is in Scotland, the UK or any other country around the world.

This is a big issue to try and get hold of. How we report it and how we calculate it is very much work in progress for us. I agree with you that we do not understand it well enough, but we need to,

because it has major implications for our impact on the world, and so that we do not just offshore problems but solve them.

Dr Long: The circular economy bill has just closed for consultation, and Scotland has the opportunity to use the mechanisms in the bill to decrease our carbon, ecological and material footprints. We can do that in several ways. One way is to design out waste so that we are not producing waste at the end of the system. Another is to increase recycling and reparability; for example, when we have products coming on to the market, we need to ensure that people can get them mended. We can also put in place the polluter-pays principle so that a product goes back to a manufacturer at the end of its life and is not put into landfill, where it will sit for decades. Building those kind of responses into the circular economy bill would be very powerful.

10:30

Mark Ruskell: Is that best done through a sector-by-sector approach? If we are looking at consumption targets, for example, are there very obvious sectors where the impact on climate and biodiversity is acute and where we need to focus? Do we perhaps have levers in some areas but not in others?

Dr Long: That is a good place to start. It is a very practical place to start, but we must not lose sight of the overall vision, which is to decrease our material, carbon and ecological networks. If we focus too much on a sector-by-sector approach, there is the risk that we will miss that overall goal, but it is a practical place to start.

Dr Diz: I agree with Colin Galbraith and Deborah Long on the challenges, and also on the way forward and where to start, but I will briefly give one example of an area that needs to be thought through further.

Mark Ruskell mentioned renewables and electric cars, but what does that mean for deep sea bed mining, for example? It has been argued that we need to start deep sea bed mining because we need the minerals for electric cars and so on. Further investigation is needed into whether that is true or whether recycling could be an alternative. It is also about what methodologies need to be put in place to ensure that recycling is an option for those materials. We need a broader and more in-depth discussion about the trade-offs.

Dr Mitchell: I agree with Colin Galbraith about the risk of potentially offshoring our biodiversity footprint. I read a statistic the other day that implied that the UK was the fifth worst country for exporting its biodiversity footprint to other countries. While we try and improve things in

Scotland or the UK, we need to make sure that we do not have unintended consequences abroad.

Mark Ruskell: Thanks for that point.

Monica Lennon: It has been great to have so many experts with us today. It has been a fascinating session. I want to ask about the global biodiversity framework. We know that the targets seek to integrate action to tackle the climate and nature crises together. We all understand that those are interlinked. Could we hear some examples of the sort of obligations that those targets create in practice in relation to how countries seek to tackle the climate and nature crises together?

Dr Diz: Those targets are policy instruments and are not legally binding per se, but they were adopted under the framework of the convention, which is an international treaty. One could therefore think that they provide the means for implementation of the convention and the obligations contained in it, which need to be taken very seriously. They are of course political commitments, but it is about implementing the legally binding obligations that countries have under the convention as well as under other conventions such as the UNFCCC, the United Nations Convention on the Law of the Sea, the Convention on the Conservation of Migratory Species of Wild Animals and so on.

The targets are broad and wide in range, which is great. They bring together the means to implement legally binding frameworks in a way that has not been done before. There is a lot of language around ecological connectivity across the GBF that helps to implement the obligations under not only the Convention on Biological Diversity but the Convention on the Conservation of Migratory Species of Wild Animals.

There are also commitments around trade and supply chains and so on that can help achieve obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

That also helps implement the obligations on protection of the marine environment under the law of the sea through the 30 by 30 target and the obligations under the Convention on Biological Diversity on in situ conservation, as well as those on sustainable use under article 10 of the convention. All the other targets that we have referred to are also contributing to the sustainable use of biodiversity, not only the protection of the 30 per cent. A good framework is being put in place for achieving global, legally binding obligations under a number of different conventions, not only the Convention on Biological Diversity.

Professor Galbraith: I am thinking of a couple of practical examples around meeting the 2030 protected area target, both terrestrial and marine. If we expand our peatland area, we will get a double whammy of more and better nature and more and better carbon. That potentially links into an economic argument, too. There is a multiple win here. The 30 by 30 target looks quite stark—it is just a number—but we should consider the potential behind it, whether for peatland or for woodland: it is the same example. If we expanded our native woodlands and our native woodland protected areas allowed natural regeneration, which Deborah Long discussed in relation to deer management, we would have a resilient ecosystem. That is important, because with climate change comes greater disease risk. We have seen that in monocultures around the world. A monoculture woodland or a monoculture anything tends to be quite vulnerable to disease, including to massive disease outbreaks. For woodland, getting back to larger, more connected, better managed protected areas across the UK and across Europe would engender a more resilient system, which would provide benefit locally, too. There could be local woodland management, with ecotourism behind it.

When we begin to translate what may look quite stark and academic on paper into on-the-ground action, there are multiple benefits. I think that, in Scotland, we are pretty good at showing that to the rest of the world. I would argue that we really do lead the world in what we are doing in peatland restoration, for example. We can do a lot more, but it is a matter of turning the agreement into something real that benefits us all. In that sense, I am quite optimistic that we could achieve the target.

Dr Long: The four goals of the global biodiversity framework clearly map out what our obligations will be in implementing them. Increasing the area of natural ecosystems is clearly an obligation to improve the extent and condition of natural ecosystems so that they can function more effectively into the long-term future—say, 100 years from now. That relates back to climate change, obviously.

There is also the obligation of restoring habitats and ecosystems and the species that live there. There is an obligation there to be doing more than we are already doing at the moment.

One area that I think we need to put more energy into is the sharing of the benefits. The third goal is to share the monetary and non-monetary benefits, and we could be doing more on how local communities benefit from action on nature and climate change. Colin Galbraith is right that we need to address both those things together.

The final point is about implementing. How do we implement everything? We obviously need the finance, and we have already talked about that. We also need political will and leadership. We need to understand that the commitment comes from Government and that, together, we are going to act to help promote and save Scotland's amazing wildlife and landscapes. Government cannot do that on its own, however, and it is about enabling and supporting all of civic society to come on the journey, too. It is a big part of our obligation to ensure that we implement the four goals as we go along.

I will say one last thing. The avian flu outbreak has illustrated the impact of what is happening at the moment. It is clearly an emergency, it is clearly getting bigger and it is getting worse. That highlights the need for us to step up on nature restoration, not just at sea but on land. The avian flu is a big wake-up call for us all to muck in on this journey together.

Monica Lennon: That is an important point.

Dr Mitchell: Broadly speaking, it goes back to the point that I made at the beginning, which is that, to address the climate and biodiversity crises, we need to mainstream biodiversity across all sectors. Throughout this session, all the panellists have talked repeatedly about the importance of mainstreaming across sectors. We need to address what we call the indirect drivers—the societal and governmental drivers, and the politics and institutions—so that our policies are joined up and so that biodiversity is addressed in our agriculture and forestry policies.

We have already said that our targets need to be SMART, but I will reiterate that. Yet again, I reiterate the importance of funding. It is important that we have funding to conserve what we have at the moment and to restore habitats and species. We also need to fund the research that we need to do to monitor biodiversity and find out how the direct and indirect drivers are impacting biodiversity.

I will give a couple of specific examples of where climate change and biodiversity link up. Woodland is often chosen as an example of how to meet the climate and biodiversity targets. It can do that but, as others have said, we need to be careful that we have the right tree in the right place, because the wrong tree in the wrong place can have negative impacts on biodiversity and climate. We need to be aware of the other habitats that we have in Scotland that can also benefit climate and biodiversity. Many of our soils in Scotland store a lot of carbon and are very carbon rich. That is not just our peatlands—soils on our heather moorlands are also very carbon rich. We need to be aware of the carbon that is stored in those and of the important biodiversity on some of

those upland moorlands, such as breeding waders.

Those are just a couple of examples of some specific Scottish habitats, although our native woodlands can conserve a lot of biodiversity as well. It is a balance.

Monica Lennon: That is helpful. On your point about having the right tree in the right place, I declare an interest, in that I am the Parliament's species champion for oak.

My next question is on the European Union's nature restoration law. I will stay with you, Dr Mitchell but, if others want to contribute, they should catch my eye. The committee previously heard from stakeholders about the significance of the development of the EU's nature restoration law. To what extent are your institutions monitoring the development of EU law? Are there areas where the EU is showing particular ambition or that are notable in terms of how the EU might translate COP15 outcomes? Where should Scotland seek to keep pace?

Dr Mitchell: The other panellists might be better placed to answer that, but, generally, the EU is showing considerable ambition in the restoration laws, and Scotland would do really well to try to match that ambition—my hope is that it will.

Monica Lennon: Thank you for that succinct answer.

Professor Galbraith: In the JNCC, we try to keep an eye on good law that is developing in any country, and not just in the EU. We genuinely take a global look at that, and we are happy to help with any aspect of that in future.

The restoration issue is really important. I come back to the twin emergencies of climate and nature loss. Restoration will be fundamentally important, but we need to be clear about what we are restoring back to. That may challenge us, in terms of what parts of the countryside should or will look like in future. Collectively and globally, we have not yet really seized the profound change that climate change is bringing. We have seen the beginnings of it, but not the main part. I am not sure that we have yet grappled with the profound nature loss that we are seeing globally and the need for restoration. In a world with limited resources, there are big challenges for restoration and how we prioritise and target. However, we are certainly on the case, and we are keeping an eye on the legislation that you talk about.

10:45

Monica Lennon: You will probably be aware of the on-going European Parliament revision process regarding the directive on protection of the environment through criminal law. Several

committees have recommended that the inclusion of a crime of ecocide in the directive should be part of that revision process. Should Scotland be proactively looking at that area of the law as part of keeping pace? Do you have a view on that?

Professor Galbraith: Years ago, I looked at one or two South American countries that have a rights of wildlife law. I think that I am right in saying that Ecuador has a rights of wildlife law, which is really radical and revolutionary. In that case, the law came about because of the Galapagos islands, which are a unique global resource.

There are examples around the world of legal frameworks being put in place. We should be very clear about the purpose of any such law. Much of what we do in nature conservation is based on the voluntary principles of collaboration and partnership. Those may be very good principles to hang on to as we think about restoration. We are happy to help if we can give any further information about the law in other countries.

The Convener: There are still quite a few questions to go and time is short—it flies when you are having fun. We have some questions from Jackie Dunbar, followed by Mark Ruskell and Mercedes Villalba.

Jackie Dunbar: My question follows on from what Monica Lennon was saying, so I will leave it to you, convener, to decide who would be best to answer it if time is short. Monica mentioned the EU. I would like to find out about international best practice on biodiversity. What does that best practice look like? Did COP15 shine a light on international best practice in governance, or could more be done?

The Convener: We are all struggling to work out who is going to answer. Maybe I can help. We will hear from Daniela Diz and Colin Galbraith, and then we will have to move on to the next question.

Dr Diz: I do not think that COP15 has managed to shed light on that yet, because it is developing. We will see that in the reports that come back. The first reports on the implementation of the GBF are due in 2026, so that is when we will have a better sense of that.

There have been global biodiversity outlook assessments. The most recent one, "Global Biodiversity Outlook 5", looked at the implementation of the Aichi biodiversity targets, which was the previous set of targets and which took a more globally aggregated view. We will have specific national reports on the GBF in 2026. No country does best overall on biodiversity. Some countries do better than others in some instances or in some sectors or habitats, but it is a mixed picture.

Jackie Dunbar: Countries could learn from each other.

Dr Diz: Yes.

Professor Galbraith: It is interesting to consider what best practice looks like. Nature conservation is now about clear targets, real delivery and a clear overview of the context to see where things fit with Government support and potential funding.

Community buy-in is a key part of that. It is important to get local and regional ownership for what is being done, whether we are talking about oak woodlands in Argyll or upland areas in Aberdeenshire.

Some of the areas that I looked at previously are in Africa, in what you would call the developing world. There are some really good examples of community ownership and buy-in and of Government support in Africa. You could argue that we are moving in that direction. There are great examples of community buy-in of nature conservation management in parts of Scotland. It would be really helpful to pull together a list of good examples, which might answer your question better than we have answered it today.

We should not always jump to look abroad. What we are doing across Scotland and the UK is fantastic. We have the RSPB nature of Scotland awards every November, which are the Oscars of nature conservation. The enthusiasm from children in schools around the country and from local communities shows that we are doing an awful lot really well. We could do more, but let us look at home as well as abroad.

The Convener: Mark Ruskell has a question.

Mark Ruskell: My final question, which is broadly for Colin Galbraith, is about the role of the JNCC in providing UK-wide governance in relation to the international agreements that we are signed up to.

Separately, I also want to ask about the JNCC's role in co-operation. The committee is considering a very live example of that with the Energy Bill and the establishment of offshore wind mitigation, in relation to which there are a lot of complexities around devolved and reserved boundaries. Without opening up a huge can of worms, would you briefly address those two points?

Professor Galbraith: The JNCC, which I have chaired for two and a bit years, is a UK body—it is made up of the four countries. NatureScot has two representatives on the committee, and there are representatives from England, Wales and Northern Ireland. There are also five independent members and the independent chair. We are genuinely a body of the four countries of the UK.

Our remit is very much UK, overseas territories and international. I am keen that we take examples from around the UK into the international arena, as well as translating back down from agreements such as CBD for the four countries. It is very much a partnership between the four countries—I am keen to encourage that, and for us to take account of what is happening in the four countries. As well as being top down, I want us to be bottom up, if I can put it that way.

On co-operation, we work extremely closely with the four countries, particularly on marine issues. Our remit is really beyond the 12-mile limit. The countries will manage most of what is inside the 12-mile limit. Our input and expertise are very much beyond that and relate to marine protected areas, renewables and so on.

However, we work in a devolved system, in which countries are increasingly dealing with developers, particularly in offshore areas. The working arrangement right now is really constructive and positive.

There is also an efficiency in terms of the collective scientific expertise that we can deploy, along with colleagues in NatureScot, Natural Resources Wales or wherever.

I am happy to follow up discussions with you about that, if that is helpful.

Mark Ruskell: Have you advised the UK Government in relation to the Energy Bill and offshore wind mitigation?

Professor Galbraith: We are involved in UK Government discussions about that.

Mark Ruskell: If there is anything that you can forward to the committee on that matter, too, that would be very useful.

The Convener: If you are going to do so, I remind you to send it to the clerks so that we can all get sight of it.

Mercedes, you have been sitting very quietly and patiently. I think that you have got some questions.

Mercedes Villalba (North East Scotland) (Lab): Thank you, convener, and thank you to the committee for accommodating my involvement today.

I would like to ask a couple of questions, depending on time. The first relates to a point that Dr Deborah Long made regarding the need to mainstream the targets across different policy areas and sectors. I think that other witnesses have mentioned that, too, so perhaps we could hear from Deborah Long first, and others if there is time.

I would like to know what role you see for land reform in ensuring successful implementation of the COP15 outcomes in Scotland. Would your organisation like to see any specific interventions around that?

Dr Long: That is a big one. On mainstreaming, the only way that we will meet the global biodiversity framework targets and the Scottish biodiversity strategy targets is to mainstream across planning, so that NPF4 takes account of biodiversity as well as meeting net zero. It is not a balance; we need to do both. We cannot do one at the expense of the other. That is one area.

On land reform specifically, there are two elements. It is about ensuring that land management, on behalf of the nation, contributes both to net zero and to meeting the biodiversity targets. That is a really important principle that needs to be part of the land reform discussion.

I also come back to the matter of involving local communities, so that not just the planet but local communities benefit. We see that already through wind farm locations on land. How will we build a process that ensures that local communities benefit from flood management, woodland creation or whatever the nature solution might be?

Those two principles need to be a golden thread through land reform as we go forward.

Mercedes Villalba: Thank you very much. Do any of the other witnesses want to respond?

Professor Galbraith: It is not really for us on the JNCC to comment on land reform, in a sense, but when you look at nature conservation around the world, you will see that the issue of how land is managed becomes really important. That might be slightly separate from ownership. There are good and bad examples from around the world of nature conservation under a whole suite of land ownership scenarios, but for us, it is better to look at the management and monitoring of the effectiveness of that sort of thing.

The Convener: Do you have any other questions, Mercedes?

Mercedes Villalba: My other question goes back to a couple of earlier comments. There was a comment about the role of private financing, and Dr Long also talked about the need for, I think, 980,000 hectares to be protected for nature. How can we ensure that that target on protecting land for nature works in harmony with our nation's other needs, such as food security and economic resilience for rural communities?

Dr Long: That is a big one.

The Convener: You have 30 seconds to answer it. [*Laughter.*]

It is a huge question, so it is only reasonable that you tackle part of it, Dr Long, and then we can go to Colin Galbraith and Ruth Mitchell—and Daniela Diz, too, at a push; I will not exclude you, Daniela.

Dr Long: The short answer is that it comes back to the same principle of right management, right place. It is not about doing one thing with a piece of land; land can have multiple benefits. The question is: where can we find those benefits? Food production is one. After all, it is not just about producing food but about conserving biodiversity and putting carbon into the soil—vegetation or whatever it happens to be. Of course, the question is not just how we maximise the multiple benefits but how we minimise and tackle any negative land management that is contributing to carbon emissions or the decline in biodiversity.

On hazardous subsidies—the target that you highlighted was one that came out—the key point is that it is not only about agriculture; forestry, for example, could be doing much more to build carbon and maintain and restore biodiversity.

Mercedes Villalba: I have just a very brief follow-up to that. So you believe that it is possible, on one piece of land, not only to protect nature but to produce food and perhaps resources such as wood for building materials.

Dr Long: Absolutely. We have agriforestry, agroecology and organic farming—those are just three examples off the top of my head.

Professor Galbraith: I will be very brief. What is interesting is that some really good examples of nature restoration and nature management in Scotland and, indeed, across the UK are actually privately funded. A lot of private money is coming into nature recovery for a multitude of reasons.

On your overall question whether it is possible to get multiple benefits from the same area of land, I absolutely agree with Deborah Long. It is all about how the land is managed and, indeed, the long-term view that is taken of land management, too.

Private finance is important in delivering these targets, and that is good. There are examples of how that is done in Scotland that could be used internationally, and there is also more to do on agriculture and forestry.

The Convener: Ruth, did you want to come in briefly?

Dr Mitchell: I totally agree that you can get multiple benefits from the same piece of land. At the James Hutton Institute, work has been done on, for example, intercropping and sowing different mixtures of species together, which can benefit not just cropping yield but biodiversity.

I also point out that, if we have more diverse land with different habitats, the systems are generally more resilient. It comes back to what Colin Galbraith was saying about the fact that monocultures of things put you more at risk from changes in climate or pests and pathogens. If you have a mixture of species, be that different habitats or different crops in your farming system or woodland, your system will be more resilient as well as deliver more benefits.

The Convener: I bring in Daniela Diz briefly.

Dr Diz: I agree with the previous speakers. Agroecology, which has been mentioned, has been included in one of the targets, as has organic farming. I am not an expert on terrestrial ecosystems, but I know those practices.

On the marine ecosystem, I will give an example from the Northwest Atlantic Fisheries Organization, of which the UK is a member state. In September last year, the Northwest Atlantic Fisheries Organization adopted a threshold for ecosystem-level fisheries—it is a groundbreaking methodology and decision-making tool for implementing the ecosystem approach to fisheries, which can be quite elusive and difficult to implement on the ground at times. That example can provide a lot of insight for other regions, including Scotland. It is a mechanism whereby food security and biodiversity can coexist.

11:00

The Convener: Thank you. Those of you who are observant will have noticed that I have not asked a question yet. I have saved my question for the end, but, interestingly, it leads directly on from the previous question, so it is perfectly placed.

Having spent 40 years of my life doing environmental management, one thing that I have learned is that you cannot be all things to all people—and you cannot be all things to all species. For example, managing capercaillies in Abernethy forest cannot be done without control of pine martens, which are the biggest threat to capercaillies, and we have spent millions of pounds on that.

Similarly, I am taken by Deborah Long's comments about deer. It is about carrying capacity, and the capacity not being the one that damages the environment. Sheep are as big a threat in my mind, as are hares on the high montane places of Scotland, where they will clip the heather and blueberries to such an extent that they cannot grow. Therefore, management is a difficult balance.

On the basis that I do not want to make Scotland—or see Scotland being made—exclusive

for any species, I think that there is room for zoning, where we accept that we can achieve things for different species in different zones and therefore achieve something for all of Scotland nationally. A quick yes-or-no answer would suffice, but I suspect that I might not get that from the witnesses. I will quickly go around the table to ask whether the witnesses believe that zoning could play a part in ensuring species and habitat enhancement across Scotland. Ruth Mitchell, I will start with you.

Dr Mitchell: Yes, I think that zoning could work, if you think of it in terms of a land use strategy. It is important to have a land use strategy that also has an implementation plan.

Dr Long: It is really difficult. If you are talking about protected areas, for example, you could argue that a national park is a zone, even though it has very different land management systems within it. The key issue is something that Ruth Mitchell mentioned earlier. Moving forward, diversity is the key to resilience, and we need our ecosystems to be much, much more resilient than they are at the moment. That resilience will not be achieved through monocultures. Therefore, bringing diversity into every system and every zone—if you want to call it that—is absolutely key to ensuring that we will restore biodiversity, halt climate emissions and have a liveable planet. If you can manage diversity within your zones to maximise connectivity, the answer could be yes to zones, but connectivity and diversity are the key requirements.

Professor Galbraith: It is an interesting concept, and it is not one that I have thought greatly about in the way that you have explained it, convener. We have natural zones across the UK in terms of habitat climate. Looking at the management within each of those is something that happens anyway. It would be very interesting. I am going to duck out a bit and say that I would like to take that concept away and think a bit more about what it would mean.

Diversity is important, and linking to local communities is important—you do not want communities to not be able to experience the full range of Scottish and UK biodiversity in their particular part of the country. It is an interesting concept. We have zones; let us think a little bit more about it—if that is not too academic an answer.

Dr Diz: It is a tool but I agree with Deborah Long that diversity should be mainstreamed. In the marine environment, for example, there is an inherited tendency in marine spatial planning to think that it includes zoning. My experience in Canada was that marine spatial planning could not involve zoning per se because some sectors would not agree to that. However, offshore wind

developments and so on involve an element of zoning. Therefore, I cannot give you a yes-or-no answer. It is a tool, but mainstreaming diversity is important in relation to biodiversity.

The Convener: That is interesting, and I will be interested to hear from Colin Galbraith in due course what his take is. Resilience is really important. To hear that, in southern Scotland, we are now at the stage that we might have reached maximum golden eagle numbers is really exciting. Yes, we need to spread that across the country, but it needs to be done in a way that ensures biodiversity.

Thank you. It has been a really interesting evidence session. I could have spent all morning asking all the questions—I think that we all could. Thank you very much for your contributions.

I now briefly suspend the meeting to allow us to set up for the next agenda item.

11:05

Meeting suspended.

11:11

On resuming—

Public Petitions

Wheelchair Users (Improvements to Bus Travel) (PE1866)

The Convener: Agenda item 3 is consideration of petition PE1866, which was lodged by Daryl Cooper in May 2021. The petition calls on the Scottish Parliament to urge the Scottish Government to introduce legislation to provide for wheelchair users to be able to face frontwards when travelling on a bus.

I refer members to paper 3, which provides background information and outlines possible actions.

At our meeting on 1 November 2022, the committee considered the petition and agreed to keep it open. The committee agreed to write to the Convention of Scottish Local Authorities to ask how local authorities were delivering improvements for wheelchair users on public buses. It also agreed to make representations to the UK Government on its upcoming review of the rules that govern accessibility on public transport.

I turn to committee members for their views. I note, in particular, the options that are set out in paragraph 18 of paper 3, which are to keep the petition open and await the outcome of the review of the Public Service Vehicles Accessibility Regulations 2000, which is expected later this year, before agreeing further action, or to close the petition on the basis that the committee has exhausted all options to progress it and to agree to write to the House of Commons Transport Committee, which is undertaking an inquiry on accessible transport, to inform it of the petition and the concerns that it highlights and ask it to let us know the outcome of its inquiry. What are members' views?

Monica Lennon: The petition raises important issues, and I am sure that we are all grateful to the petitioner for the work that they have done. It would be good if we could do more at this committee, and it is a little bit frustrating that we cannot, but I understand the reasons why. I recognise that the matter will be looked at in the House of Commons, so it is important that we write to the Transport Committee to consolidate the work that has been done here and express the views that we have obtained. I hope that the select committee can keep us informed.

Fiona Hyslop: I agree with that. The issue has been brought to our attention and we have brought it to the attention of other relevant authorities. The point of the petition was legislation, but it is a

reserved matter. If, as it is suggested, the House of Commons Transport Committee will be looking at accessible transport, we should write to draw to its attention the specific issue of front-facing wheelchair users and to ask whether it will come back to us once it has conducted its inquiry. Our job as a committee has probably come to a reasonable conclusion.

The Convener: Looking around at committee members, I think that we are agreed that we should write to the Transport Committee to make it aware of the petition and our concerns in this area and ask it to inform us of the outcome of the inquiry so that we can consider that. The petition has come to a natural conclusion and, therefore, we should close it. Obviously, we should write to the petitioner to ensure that they are aware of what we are doing and why we are doing it. Is the committee agreed?

Members *indicated agreement.*

The Convener: That concludes the public part of our meeting.

11:15

Meeting continued in private until 12:31.

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Published in Edinburgh by the Scottish Parliamentary Corporate Body, the Scottish Parliament, Edinburgh, EH99 1SP

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