



OFFICIAL REPORT
AITHISG OIFIGEIL

Rural Economy and Connectivity Committee

Wednesday 18 April 2018

Session 5



The Scottish Parliament
Pàrlamaid na h-Alba

Wednesday 18 April 2018

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RURAL ECONOMY AND CONNECTIVITY COMMITTEE
11th Meeting 2018, Session 5

CONVENER

*Edward Mountain (Highlands and Islands) (Con)

DEPUTY CONVENER

*Gail Ross (Caithness, Sutherland and Ross) (SNP)

COMMITTEE MEMBERS

*Peter Chapman (North East Scotland) (Con)

*John Finnie (Highlands and Islands) (Green)

*Jamie Greene (West Scotland) (Con)

*Richard Lyle (Uddingston and Bellshill) (SNP)

*Fulton MacGregor (Coatbridge and Chryston) (SNP)

*John Mason (Glasgow Shettleston) (SNP)

*Mike Rumbles (North East Scotland) (LD)

*Colin Smyth (South Scotland) (Lab)

*Stewart Stevenson (Banffshire and Buchan Coast) (SNP)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Alex Adrian (Crown Estate)

Anne Anderson (Scottish Environment Protection Agency)

Donald Cameron (Highlands and Islands) (Con)

Mark Harvey (Highland Council)

Cathy Tilbrook (Scottish Natural Heritage)

CLERK TO THE COMMITTEE

Steve Farrell

LOCATION

The Mary Fairfax Somerville Room (CR2)

Scottish Parliament

Rural Economy and Connectivity Committee

Wednesday 18 April 2018

[The Convener opened the meeting at 10:00]

Salmon Farming

The Convener (Edward Mountain): Good morning and welcome to the 11th meeting in 2018 of the Rural Economy and Connectivity Committee. I ask people to ensure that their mobile phones are in silent mode.

I welcome Donald Cameron MSP, who is here as a reporter on the salmon farming inquiry for the Environment, Climate Change and Land Reform Committee.

The first item on our agenda is salmon farming in Scotland, which may be contrary to what some people are expecting, as the meeting was scheduled to be about crofting reform. However, the Cabinet Secretary for the Rural Economy and Connectivity has been called away to represent the Government and is therefore unable to attend the committee, so the discussion on crofting reform has been rescheduled for 2 May.

I invite members to declare any interests that they have in relation to salmon farming. I declared my interest at the beginning of the inquiry, but I refer members to my entry in the register of members' interests, as I also have an interest in a wild salmon fishery.

Donald Cameron (Highlands and Islands) (Con): I refer members to my entry in the register of members' interests and to the committee meeting of 4 March, when I declared that I have interests in fish farming and in a wild fishery.

The Convener: This is our third evidence session in the committee's inquiry into salmon farming. Today, we will take evidence from the regulatory bodies. I welcome Anne Anderson, who is the chief officer for the compliance and beyond portfolio in the Scottish Environment Protection Agency. Is that right?

Anne Anderson (Scottish Environment Protection Agency): Yes: "compliance and beyond" refers to the regulatory side of SEPA's business.

The Convener: Thank you. I also welcome Mark Harvey, who is the team leader for development and infrastructure services at Highland Council; Alex Adrian, who is the aquaculture operations manager at Crown Estate

Scotland; and Cathy Tilbrook, who is the unit manager of coastal and marine ecosystems and use at Scottish Natural Heritage.

I am sure that you have all given evidence to the committee before. Please do not touch any of the buttons in front of you—if you catch my eye and I bring you in, your microphone will be switched on. If you want to come in on a particular question, please ensure that you catch my eye—if everyone looks away at the same time, I will catch someone's eye, but invariably there is someone who wants to come in. Once you start talking, please glance at me occasionally, because if you are expanding beyond the remit of the question into the area of another question, I may ask you to hold back.

The first question is from our deputy convener, Gail Ross.

Gail Ross (Caithness, Sutherland and Ross) (SNP): Good morning, panel. You will know that our sister committee—the Environment, Climate Change and Land Reform Committee—has produced a comprehensive report about the environmental concerns that various people have about fish farms. In the Rural Economy and Connectivity Committee, we have taken evidence on the benefits of fish farming to the rural economy. In evidence to the committee on 7 March, Steve Westbrook said:

"not only is salmon farming an important employer in terms of the total, but the types of jobs have been very suitable for the people in rural areas who might not have had other opportunities—particularly with the number of farming and fishing jobs going down in many areas." — *[Official Report, Rural Economy and Connectivity Committee, 7 March 2018; c 15.]*

How important is the aquaculture industry to the rural economy in the Highlands and in other local authority areas, and what benefits does it bring?

Mark Harvey (Highland Council): I was at Highland Council's planning committee yesterday, at which we approved two fish farm applications. Both are in an area of Skye that is regarded as fragile, and the social and economic benefits were definitely a weighty material consideration for committee members. What was said at that committee was that what is important is not so much the number of jobs per farm, which is relatively low, but the fact that such farms are located in isolated rural areas—in this case, a designated fragile area—where employment and population retention are important. In those circumstances, fish farming represents a relatively unique employment opportunity, because it is arriving in areas that are not, due to operational factors, supporting employment growth in other ways.

John Finnie (Highlands and Islands) (Green): To what extent does the understandable wish for

employment in fragile areas intrude on planning considerations disproportionately or inappropriately?

Mark Harvey: That is a good question. As a planner, I hope that that wish does not intrude disproportionately or inappropriately, but John Finnie is right to say that it is part of the mix. Part of the job of the council planning committee and planning officers is to weigh up all the material considerations, of which that is one, and to place them against the other considerations that are pertinent to a particular application. With aquaculture applications, there is quite a mix. Yesterday, we were looking at landscape that is close to a national scenic area, and at wild fish interactions, because a freshwater pearl mussel issue was relevant to the site. All those things are weighed up, so my answer to the question is that I hope that there is no intrusion; that should not be happening in any consideration. All the factors should be weighed up appropriately. That is how the planning system works.

John Finnie: I need to let you know, convener, that it may well be—I am not sure—that I am an objector to that particular application, so I think that it is appropriate that I say that. I have no further questions.

The Convener: Does Scottish Natural Heritage want to comment on the interaction between the environment and employment? That interaction seems to be something that SNH might have to balance.

Cathy Tilbrook (Scottish Natural Heritage): That is part of the balancing duty that we take into account when we provide our advice to local authorities on aquaculture applications. We acknowledge the socioeconomic importance of aquaculture as an industry, particularly in the fragile communities that have been discussed, but our core purpose is to consider the impacts on biodiversity and landscape. We provide that advice and take into consideration socioeconomic factors, but the main player in weighing up those factors is the local authority.

Peter Chapman (North East Scotland) (Con): How often, if ever, has SNH objected to a planned increase or a new fish farm? Has that ever happened, in your experience?

Cathy Tilbrook: Yes—we have objected to a number of planning applications, either for new farms or for increases or changes, based on what we considered to be the natural heritage impacts of those developments. We go through a careful process to come to such decisions and we do not take them lightly.

Gail Ross: My question is probably for Mark Harvey. I took advantage of the lovely weather and visited a fish farm up west last week. The

people at the fish farm and members of the local community around Lochcarron, Shieldaig and Torridon told me that there are plenty of jobs but not so many houses. Is that a planning consideration that you would take into account in a fish farm application, or is that completely separate? If it is separate, how can we marry the two?

Mark Harvey: That is a separate consideration, although it is relevant to all applications that we deal with. If a development will create employment, we want to make sure about other factors, because we should be bringing jobs, housing and other services together. That rather falls into the other side of planning—the development and strategic planning side, in which, one would hope, the local plan makes provision for enough housing to support a reasonable number of jobs.

From the planning point of view, it is probably fair to say that in aquaculture at the moment the emphasis is heavily on development management. Aquaculture is very much focused on planning applications; they are individually assessed and so on. We lack an overall framework—something that would indicate that an area is or is not particularly suitable for aquaculture—that would enable the planning system to match more closely future housing demand with future job creation. At the moment, it all happens application by application, which is not how the development planning system should operate. It is difficult to plan ahead on that basis.

Gail Ross: I followed the Highland Council meeting a couple of days ago. Were any issues from the ECCLR Committee's report on salmon farming considered in respect of the planning applications that were discussed, and would any such issues be considered in future applications for new fish farms?

Mark Harvey: Yes. The report was highly relevant to the issues that the council was dealing with. It certainly hit the target in identifying things that we are, it is fair to say, struggling with a little when it comes to applications—in particular, issues related to lack of background information on environmental issues, the key issue being wild fish. The report covers the ground, but perhaps it did not come up with the answers that would enable us to overcome those problems.

The Convener: Does Cathy Tilbrook want to comment on that? It seems to tie into SNH. A fair summary would be to say that the ECCLR Committee report was forthright. Has SNH been mindful of the report when considering fish farm applications?

Cathy Tilbrook: The report picks up on a lot of things that we have already raised in the advice

that we provide on fish farm applications. The report is a good summary of the key issues with which we are currently grappling. Mark Harvey is right to say that we have not yet got the answers to all those issues, particularly in relation to wild salmonids and acoustic deterrent devices. We found the report to be a very helpful summary of issues that we would like to be bottomed out with good solutions.

Gail Ross: I want to go back and tie up the economy side. How important is aquaculture not only to the Highlands and to rural economies, but to the economy of Scotland as a whole?

Mark Harvey: I cannot answer that question directly, but we are aware that salmon is an important export. There is also the issue of salmon being an iconic Scottish product that sits alongside other iconic Scottish products. That came up yesterday, when someone said to me that Scotland needs to make sure that its salmon is considered to be the best salmon that is available worldwide. It is a premium product. In those circumstances, it would become an important part of Scotland's export economy.

10:15

Mike Rumbles (North East Scotland) (LD): I want to focus on regulations and the regulatory regime. We are all well aware of what the Environment, Climate Change and Land Reform Committee said about the matter in its report, which stated:

"The Committee is not convinced SEPA (or any other agency) is effectively monitoring the environmental impact of salmon fisheries. The Committee is also not convinced that the regulations, protocols and options for enforcement and prosecution for the sector are appropriate, and being appropriately deployed."

That is quite a strong criticism to which I would like the panel to respond. To balance that, what elements of the regulatory system work well?

Anne Anderson: In terms of the environmental regime that SEPA is responsible for, we undertake a process of application assessment and identification and clearly link into the planning process, as a statutory consultee. The process is based on scientific evidence, as are all environmental decisions, wherever possible. However, there are gaps in the evidence, which I think the report identified.

On the regulatory controls, fish farm regulations and applications come under the controlled activities regime: there is a direct link to the water framework directive, which controls discharges into the water environment. Our sampling and monitoring exercises provide evidence of environmental harm, and we use models predictively. That is a common approach that is

taken in most of the environmental arena globally in assessing applications for any media. The marine environment is not unique in using models and in identifying and using monitoring and regulatory controls to best explain the truth of the model and to track, predict and respond.

SEPA commenced a review of aquaculture in February last year as part of our changing approach as an environmental regulator, having accepted that there are changing planetary aspects in terms of the environment and climate change. That is partly about the wider suite of reviews of controls of the conditions for individual licences, and of access to and availability of monitoring, including new monitoring techniques and models. We are coming to the end of that process and are due to report on it by the end of June, so we will imminently conclude that year's worth of reviews of aquaculture.

Our regulatory regime allows wide scope; it is about interpretation and use of conditions in order to improve and innovate in adoption of legislation and the manner in which we use it. It is also to encourage operators, marine or otherwise, to innovate and to keep up with the best available technologies, using the two processes of control of conditions and baseline legislation.

That might not have answered Mr Rumbles' question.

Mike Rumbles: You are speaking on behalf of SEPA, but you did not really tell me what you think is working well and whether the whole system is working well. Are you working in isolation? I would also like to hear the other panel members' views on whether there should be one regulatory body to oversee matters rather than the four agencies that are represented here, for instance. What is working well, and is the ECCLR Committee's criticism fair or unfair?

The Convener: I will ask Anne Anderson to come back in, but in order to get answers to Mike Rumbles's question, I will ask each member of the panel to say whether they have monitored developments and whether they have concerns about them. We will start with Anne Anderson.

Anne Anderson: I think that there are elements that work well but, as with all regulation, we always want to improve. That was the purpose of the review exercise, and increasing monitoring and using every available bit of monitoring data is a key part of that. In the work that is done not just by colleagues sitting here but other regulators—in this case, Marine Scotland—there is always room for improvement in joining up that data and having access to all of it.

The Environment, Climate Change and Land Reform Committee definitely recognised the ability of the regulatory partners to work more

collaboratively towards joining up some of the gaps. A number of joint research projects are already under way and have been for a number of years. Significantly, new examples of working in partnership with industry and academics are a key component of that, as is the commissioning of additional research. We are pulling together the Government funding and targeting it on research work that will fill those gaps in knowledge.

It is really important that we get that evidence. I made reference to SEPA being an evidence-led regulator. We need to be, so that we are able to demonstrate harm. Part of that is to increase the level of evidence, which means increasing the volume of monitoring that is undertaken by operators and by all the partners that have that component as part of their remit. It is really significant that we join up that evidence and that we then have the ability to access and use it and to regulate according to what it tells us. That is part of the suite of things.

There have been questions about our depositional zone regulation consultation and its conclusion. The DZR process is about encouraging movement into areas of the marine environment that have not been accessible previously due to the limitations of older models. Making use of new technology and models to continually refresh is something that we have to do as a component of regulation—there is always room to do that.

We are working from quite a solid base in terms of that approach. Our new model, which was introduced by Marine Scotland, supports—but is only one aspect of—the use of modelling. Mark Harvey's reference to the ability to assess the total impact relates to cumulative impact modelling and the use of hydrodynamic models. Those are now available and we have been piloting and testing them over the past year to ensure that, as part of that innovation and as an environmental organisation, our regulatory changes can be delivered and are evidence based, backed up and used in court.

Packages of work are under way to deliver a stronger suite of regulations, and that is very much about joining up the regulatory partners.

Cathy Tilbrook: I have a response to Mike Rumbles's question about what works well at the moment. There has been a much greater focus in recent years on pre-application discussion. That has been very helpful for us and we have embraced it. We now try to put a lot of our resource into that pre-app discussion with industry partners.

The key with the pre-app discussion is to identify, at the very early stage, what the constraints might be on the sites—we hope that

developers will consider more than one site—so we can steer developers away from sites where we think there are likely to be the most environmental problems.

That ties in with what Mark Harvey said about how, ideally, we would like to see better strategic planning from the outset. If we identify where the most suitable locations are, we do not have to say that a site is really bad at the individual application stage, because we have already gone through that process.

Useful work is being done. Marine Scotland has been doing good work on heat mapping, and once it is out there and in the public domain, I think that it will be helpful. Some form of better strategic planning that helps steer developers to good sites will really help.

The pre-app phase has been good, and we think that it will lead to a decrease in the number of applications coming into the system that we have big problems with and have to raise an objection to.

On issues that we feel are still problematic, Mike Rumbles mentioned monitoring. SNH does not have a role in post-consent monitoring, but there are issues with it.

The ECCLR Committee report referred to the evidence of damage, particularly within marine protected areas or to priority marine features. Our role in relation to MPAs is on site condition monitoring—monitoring the condition of the features within protected areas. We do that on quite a long cycle, because of the resourcing costs: marine monitoring is very expensive and we do not have a lot of resource to monitor those sites regularly. We deliberately select stations for the survey points for monitoring that are away from things such as fish farms, because otherwise the results would not be representative of the site as a whole. It is very unlikely that our routine site condition monitoring on that lengthy cycle will pick up issues relating to change and damage to features from a fish farm.

There is something there about better use of the routine monitoring that other partners, such as SEPA, are carrying out and linking that to a better understanding of the impacts on sensitive features, such as maerl beds, which were mentioned in the Environment, Climate Change and Land Reform Committee's report. That would give us a better understanding of the long-term impacts, likely recovery rates and how much we can say about damage to a wider area from the direct footprint of fish cages. There is probably quite a lot there that we need to come back to.

The Convener: A few questions are lining up, but I will go along the panel for comments first.

Alex Adrian (Crown Estate): Mike Rumbles asked what is wrong with the regulatory framework and the answer is that it does not really recognise the circumstances in which fish farming is being undertaken. As is the case for other marine businesses, most fish farming issues arise from interactions with the natural heritage and with other users. At the moment, there is too much of a development focus, rather than a management focus, in the scrutiny that is applied. There needs to be more focus on management, and part of that, as Anne Anderson says, is increased and improved monitoring.

The other aspect is to look at the framework in which monitoring operates. The good thing about the regulatory framework is that we recognise the issues; however, we do not necessarily have the right tools to address them properly. Previously, we have had an increasing focus on things such as adaptive management. I take into account what Cathy Tilbrook said about pre-application conversations, which are an important part of the process, but as far as we can see, there is no real means of on-going accountability throughout the term of a business for undertakings that are made at the pre-application stage. The point of such undertakings is that the circumstances are likely to change. The marine environment is very dynamic, with long-term and short-term seasonal changes. The undertakings and the means by which they might be achieved will vary over time and the question is how one can review them and maintain scrutiny and accountability to ensure that they are being properly carried out, according to what was discussed at the pre-application stage.

We have the right bits and pieces, but they have not been put together in the right order. We need an overarching framework that governs the relationship between the agencies, as well as one that acknowledges the uncertainties and unpredictability of the environment that we have and focuses on management, rather than development.

Mark Harvey: I do not disagree with anything that has been said. However, from a planner's point of view, we have the overarching framework, which is the planning system; we just do not use it very well.

Multiple regulation has been mentioned, but that is not unusual: if you build a house, you will need planning permission and building standards approval and you might need other licences and approvals, too—any one of those could prevent you from building the house, but none stands in the way of the others. Multiple regulation is not necessarily a problem. If you create one huge regulator, there will always be the danger that, if its front-left leg cannot move forward for one reason, the whole body does not move forward.

For example, at the moment, we could grant planning permission for a fish farm, even though further down the line there might well be a controlled activities regulations licence issue. That issue could probably be resolved, but if it were not resolved, the development could be prevented from going ahead.

Some elements of regulation work very well. Let us not forget that most fish farm applications come in as environmental impact assessment developments and are associated with an environmental statement, which is a fairly high level of environmental control that most applications do not have to go through. It is not as though fish farming is not regulated.

10:30

We can deal comfortably with issues of landscape in the planning system. We are also comfortable with using consultee responses, and we are happy to get them. Where we are weak is that, 30 or 40 years into the fish farming industry, we still seem to lack information about some fundamental aspects of the industry's interaction with the natural environment. Sea lice and wild fish are the classic example. I came into this job two years ago and I admit that I am a critic of the current situation. We probably all are, because all our organisations are looking at ways of improving it. The Environment, Climate Change and Land Reform Committee's report picked up on that culture and the movement that is going on.

At the moment, we find ourselves issuing planning permissions with an environmental management plan attached to them—that happened at the planning committee yesterday. Fundamentally, that is about allowing the authority a role in monitoring sea lice numbers within the farm and coupling that with a requirement on the operator to carry out some monitoring of wild fish and possibly of the knock-on effects on freshwater pearls and so on. I think that that is a positive move, but I recognise that it is a very piecemeal approach to what is more of a general environmental problem. I regard it as both a strength and a weakness. We are addressing the issue, but I do not think that we are addressing it terribly well—it could be done better.

Mike Rumbles: I was rather amused by Alex Adrian's response: we are playing all the right notes, but not necessarily in the right order, to use the Eric Morecambe analogy.

On a serious note, however, I have a question for Mark Harvey. As I understand it, Highland Council has to deal with applications as they come in. Is it not the case that lot of the criticism is based on the concern that, with a whole industry out there, there should be an overarching plan or

approach to fish farming development across the Highlands, rather than taking individual applications and saying yes or no to them, as you have to do now?

Mark Harvey: Yes.

Mike Rumbles: Okay—that is fine by me.

The Convener: A concise answer—yes is perfect.

Gail Ross: I have two specific questions; the first is for Anne Anderson. You talked about the depositional zone regulation model that you are preparing to change, but the ECCLR Committee has said that it is concerned that the development of the new model has not been peer reviewed. The committee is not clear how the model takes into account impacts beyond deposition on the sea bed and it has written to SEPA seeking further information. Has that information been provided yet?

Anne Anderson: Yes. We responded on 28 March and answered the various questions. In the wider context of marine fish farming, the DZR proposal is actually for a very small part. It relates to organic loading.

I referred to the use of the new AutoDEPOMOD model, which is the facility that has been assessed and run by Marine Scotland. Our in-house modelling team has been part of that review and assessment process. The truthing of models links to real monitoring: grab-sampling, analysis in a laboratory and then testing back in. Marine Scotland's hydrodynamic model does not and did not feature in the depositional zone regulation, but it is a tool that is available and it will be part of the future assessment process. In answer to the concerns that were raised, we have been testing and identifying what its capabilities are.

I made reference to the continuing need, as regulators, to innovate and to keep up with technology, as we require our businesses to do. Hydrodynamic modelling gives an additional layer that helps to inform us. The more information we have, the better the decisions that we can make. Hydrodynamic modelling allows us to determine cumulative impact.

In the case of locations, we assess the total impact of 10 sites—wherever they happen to be in Scottish coastal waters—with one farm management zone, and then model and monitor hot spots that can be predicted and truthed. Enhanced monitoring, additional controls and building more information are key aspects in making progress, as is having new analytical methodology and the ability to use DNA assessment and technology for organic loading. We have done trials and are now two years into a project that will allow us to have 10 samples for

the same cost as one, which instantly changes our ability not just to get more information on what is happening in the vicinity of marine cage fish farms but to predict where tides and shifting sands will move organic load.

The Convener: Anne, if I am jiggling my pen like that, it is probably—

Anne Anderson: It means that I am supposed to stop. I will make sure that I do so, convener.

The Convener: Okay—if you could watch the pen, please.

Gail Ross: I have a very quick second question for Cathy Tilbrook. MPAs have been set up around the coast for a number of reasons. Should there be more regulation and monitoring of fish farms that are in MPAs?

Cathy Tilbrook: We would like to see a better linkage back to understanding. We need a link-up in the post-consent monitoring that SEPA and others are doing so that we can better understand those impacts. At the moment, we are quite good at liaising with the regulators, local authorities and SEPA about whether it is appropriate to site a fish farm in an MPA, depending on the sensitivity of its features. In some cases, if an MPA's features are not sensitive to the pressures that fish farming causes, there may be no problem in having a fish farm there. On other occasions, we would suggest micro-siting a farm to avoid such features.

However—and particularly with the new modelling that Anne Anderson has talked about—we probably need to become better at checking that we are correct in the assumptions that we make about where deposition from a farm is ending up. For example, are we right in suggesting that, by having a farm located in a particular area, we have avoided impacts on the maerl bed? For long-term impacts, especially for slow-growing features like maerl, do we know enough about whether we can detect changes and impacts that might relate to pressures from a fish farm?

There are issues there, but we do not have a blanket position of thinking that there should never be fish farming in protected areas. It is not as simple as that.

Peter Chapman: My question is specifically for Anne Anderson, as it concerns SEPA. Earlier, you spoke about regulatory changes. Please correct me if I am wrong, but I believe that, in its fish farm manual of 2005, SEPA acknowledged that it had a role in protecting salmon and sea trout from the impact of sea lice. More recently, however, it has denied having any such responsibility. Why has there been such a fundamental change in SEPA's position on sea lice?

Anne Anderson: The introduction of the water framework directive led to a change. I refer to the

controlled activities regulations, which is the suite of regulations that we use. The previous legislation came under the Control of Pollution Act 1974, or COPA.

Our agreements and arrangements on trying to ensure who does what and who takes the lead in certain areas led to a shift in 2005. Mark Harvey referred to his two-year introduction to aquaculture; I am a year and a bit into it, so identifying the 2005 process and previous decisions that were made 10 or 13 years ago is difficult.

We have interpreted the activity that is referred to in the controlled activities regulations as being discharge into the marine environment, which relates to the organic load and any chemicals and medicines. On the activity of a fish farm and how it then interacts with the wider environment, we have a role in assessing biodiversity. However, there is a working arrangements document dating from 2010 that sets out the lead responsibilities and interactions for the regulators in Scotland on assessment and participation. Marine Scotland has the lead on wild fish assessment in marine waters, and, under the water framework directive, we have responsibility for the freshwater assessment, so that is where we draw the line. I see the pen moving, so I will stop.

The Convener: You did not have to be quite that blunt. [*Laughter.*]

Before we move on, I would like to ask Anne Anderson and Cathy Tilbrook a quick yes or no question. Has the regulatory framework that is in place protected or enhanced the environment in which salmon farms operate?

Cathy Tilbrook: I do not think that I can answer that with yes or no. I could not say that it has enhanced the environment. In a sense, it has not degraded it, because we have safeguards in place, but there are some issues that we have touched on that still need to be improved. I am sorry; that was nowhere near a yes or no answer.

The Convener: Anne Anderson will prove you wrong by saying yes or no.

Anne Anderson: I think that Cathy Tilbrook is quite right. There is no answer as simple as yes or no to that particular question, I am afraid.

John Mason (Glasgow Shettleston) (SNP): We have talked about the present regulatory environment, and all the witnesses have said that there are strengths as well as some issues that we may want to work on. I would like to think about what happens if the industry develops and we have twice as many salmon farms, or at least a fairly sizeable increase. What would be the impact of that, on top of what you have already described?

As I understand it, the Crown Estate would get twice as much income, so you could double up your staff, but what would happen to SNH if the number of fish farms doubled? Would you get extra income? I am guessing that you would not. You have already said that your inspection resources are a bit thin at times, so would it mean that you could in effect put in only half the effort per farm if there were twice as many farms?

It has been suggested that SEPA does not make many unexpected visits to farms, so if there were more farms would you make proportionately fewer visits, or do you have a way of handling that? What is your reaction to the idea that the whole thing could double?

The Convener: I will go to Alex Adrian first, because the suggestion is that he is the one beneficiary. After that, we will hear from Cathy Tilbrook, Mark Harvey and Anne Anderson.

Alex Adrian: The first thing that I would say is that we are managers rather than owners, so the increased funds from a doubling of the industry, or anything approaching that, would go to the Scottish consolidated fund rather than to ourselves.

John Mason: Would that be net of any expenses you have?

Alex Adrian: Yes, it would be net of expenses.

You have to ask on what basis we would have that doubling or that increase—would we simply have more of the same, or can we achieve that through a different means? That feeds into the questions that were raised earlier about the regulatory framework and how we monitor it. Our view is that we may need to take a closer look at what marine industries have historically done to regulate themselves or to exert some kind of control, and that brings us back to the focus on management plans and on transparent accountability that allows for undertakings to be seen to be met, but can also offer the agility and flexibility to move with the changing circumstances that you get in the marine environment.

The fundamental part of a management plan is review. If you look at the regime that we have now, you will see that permissions are granted in perpetuity in the case of planning, and although SEPA's permissions are renewable, they have been by and large in perpetuity over the past 25 years. We need to have some kind of review that can address the fact that circumstances change, so that we can check that the farmers out there recognise, acknowledge and can adapt to particular changes.

We can certainly achieve an increase, although I do not know whether it will double, but it has to be with a greater degree of accountability.

Alongside that accountability, there must be flexibility for the farmers themselves to undertake the necessary changes to ensure that they remain sustainable. In short, there will be more money for Crown Estate Scotland, and that will in turn be passed on to the Scottish public purse.

More important is the question whether we can expect the industry to maintain that economic and environmental performance alongside the increase. We need to look at what we do, with a central pillar focused on reviewable management plans, which is how other marine industries work.

10:45

We need to incorporate that to give everybody—not necessarily just stakeholders—the assurance and accountability that things are being done properly because, if the industry goes to the trouble of doing things properly and is seen to be accountable, it confers assurance on itself and produces confidence that can underpin investment.

Cathy Tilbrook: SNH supports the sustainable development of the aquaculture industry in Scotland, but we are concerned about growth targets being set that are not in accordance with environmental capacity. We spoke earlier about getting a better handle on locations, with the scope for expansion and new farms that could be developed without the environmental risks that we have talked about. We need that understanding before we can set meaningful targets that can be delivered without risk to the Scottish environment.

John Mason: Are you saying that nobody knows what capacity there is for fish farms?

Cathy Tilbrook: We are a long way from knowing that capacity. As Alex Adrian said, the other point is that innovation to overcome some of those issues might give much more scope for expansion. The issue is to identify the capacity under the current arrangements and practice.

John Mason: Whose role would that be?

Cathy Tilbrook: The role is for a combination of all of us at this meeting—for Government and industry. The industry is already innovating a lot, but we need to tackle the issues, such as sea lice and others that have been identified, and find solutions, which could free up other locations about which we are concerned. If we have safeguards in place, those locations might be fine for expansion or for new farms. Containment would resolve most of the issues that concern us. There are investigations in other parts of the world, and we would like to see more trials and more forms of innovation looked into, which might free up potential for much more growth. At the moment, it is difficult to look at growth targets

without understanding the environmental issues that would be involved in firing ahead with that level of growth.

John Mason: Would resources be an issue for SNH, if there was a lot more work to do?

Cathy Tilbrook: Dealing with the applications would need resources. We do not link our monitoring specifically to consent and fish farm development, so we would not necessarily be expected to do more monitoring. However, we would need to factor in the time to comment on applications.

Mark Harvey: More applications would bring more planning fees, but they are not ring fenced in the planning service, which is a big issue and concern for us—local government is quite hungry for resources at the moment. Another concern is that our environmental management plan conditions set us up to expand our monitoring, which will be more work.

John Mason: Is it right to say that you do not get any more resources for that work? You get a lump sum for the planning application, but there is no more income for on-going costs.

Mark Harvey: That is correct. Monitoring is always an issue for planning authorities, and enforcement is an obvious example. I reiterate Cathy Tilbrook's point that the industry has set a challenge for itself and everybody else by saying that it would like to double capacity. Nobody knows the capacity of Scottish waters to absorb that level of fish farming. The situation is strange, and I have never received a proper answer about it. Scotland has three coasts—west, north and east—and the north and east coasts have a moratorium on fish farming.

There are not many moratoriums in the planning system, because that is not really what the planning system is about. There have been moratoriums on fracking and the construction of new nuclear power stations, but I do not know of many others. We have never really received an explanation of why that moratorium continues to exist in Scottish planning policy. It means that everything is focused on the west coast.

John Mason: Should that decision be reviewed at some point?

Mark Harvey: Yes. It should be reviewed by the Government before it is reviewed by industry. The planning system would give industry the opportunity to challenge the policy position if it wanted to, perhaps through an application. We are uncomfortable that that basic work has not been done.

The need for a more strategic plan has come up a couple of times. I was quite struck by the Norwegian model, which consists of a traffic-light

approach, with green, amber and red. Interestingly enough, green means go and that further permissions are suitable; amber means further permissions are probably not suitable; and red means not just stop but draw back and reduce the biomass in the area. That model strikes me as relevant to the Scottish experience, because I suspect that there are parts of the west coast of Scotland where we have too great a loading of fish farms already—we have red areas, as it were. We need to move that biomass to areas that we might categorise as green.

There is a huge amount of work to be done. As I said, two years into this job, my feeling is that we are about 30 years too late. We have an awful lot of catching up to do. Industry has been around for a long time and, in 2018, we should probably have these answers already. We are nowhere near getting those answers and a lot of work will be needed to get there.

The Convener: I am conscious of the time. We are on question 5 and there are probably another 20 questions to go. I have badly managed the time, so I ask everyone to keep their answers as concise as possible.

Anne Anderson: I will try to speed things up.

In our letter of 28 March to the ECCLR Committee, we answered their questions 5 and 6 about the determination of unannounced visits. I think that John Mason asked about the impacts on resource and visits—that is what I scribbled down. We provide a more detailed answer to that in question 5 of our letter.

It is important to say that we are dealing with live species and there are disinfection and disease protocols. People are not always present at facilities, and there are also health and safety aspects to consider, so we take a multiple approach on physical inspection. However, regulatory control is more than just physically turning up at a facility. Oversight and regulatory conditions in licences to enable there to be a different way of assessing and ensuring compliance feature in our environmental suite. Increasingly, we are looking to use that aspect as we change and innovate as a regulator for the industry.

If you look at question 5 for visits—

John Mason: I do not think that I know what question 5 is.

Anne Anderson: I am sorry. It is in our 28 March 2018 letter to the Environment, Climate Change and Land Reform Committee, which it has published. There are specific responses to that question in the letter.

On resource, unlike Scottish Natural Heritage and local authorities, SEPA charges for

applications in order to recover our costs. We are trying increasingly to be more effective in recovering our costs so that our grant in aid is not utilised in any way in that regard. We also charge for inspection and regulatory effort. We have a published charging scheme that relates to the entirety of our actions. We can, and do, charge for monitoring. Our ability to up our resource is linked directly to any increase in any sector. We can charge for more applications, more visits and more monitoring to recover costs.

The Regulatory Reform (Scotland) Act 2014 introduced our new enforcement measures, two of which allow us to recover costs when we undertake enforcement action, and we are now commencing the use of those tools.

We therefore have the ability to increase resource to manage any industry growth, because industry will pay for our ability to regulate and monitor it. In relation to enhanced monitoring, I am reasonably confident of our ability to get a response and to charge back on that basis.

John Finnie: I have a brief question for Mr Harvey. I am interested in your comments on the moratorium—in particular, the references to the Norwegian system. You alluded to areas off the west coast that could be red zones. Would you like to give us a determination on what areas on the west coast would fit into a red zone under the Norwegian system?

Mark Harvey: I would not, because we have not done that work. We have suppositions about concentrations, and it would help the industry if we could identify areas. It is rather more about the importance of identifying the green zones where we think that development should take place and the support that could be provided for that. For a green zone, there is nothing to stop an environmental impact assessment being carried out on the wider—

John Finnie: I am sorry to interrupt you, but I suspect that that might intrude on other questions. I am specifically interested in the red zone and the analogy with the system in Norway. You said that you are aware of concentrations of fish farms. Can you say where they are, please? Surely that is just a matter of fact rather than opinion.

Mark Harvey: I do not think that I can say that. There are west coast areas in which there are a large number of fish farms. Obviously, they would be a focus of attention but, of course, they do not necessarily—

John Finnie: Just for the record, where are those areas?

Mark Harvey: There is a concentration of fish farms in the south of Skye, for example. Actually, they were the subject of a recent refusal on the

ground of landscape impact. Perhaps that area would be worth looking at further to see what environmental capacity it has, notwithstanding the landscape issue. There are also west coast areas that have, for a variety of reasons, not received a large number of fish farm applications. I suspect that they are mostly operational reasons, but there might also be reasons to do with leases. Information on that would also be useful.

The Convener: Cathy Tilbrook wants to come in briefly. We will then need to move to the next question.

Cathy Tilbrook: I will be very brief.

On the point that Mark Harvey made about the moratorium, I understand that there has been a moratorium because of the importance of some salmon rivers on the east and north coasts. It would be worth our while to look at that again. If there was good innovation that would restrict the problems relating to escapes and sea lice, there would be no reason not to open up that area again, but it would be quite risky to open up a new area, where we know there are sensitivities about wild fish, without safeguards being in place.

Richard Lyle (Uddingston and Bellshill) (SNP): Good morning and welcome.

We have quite a number of fish farms, and the business is growing. We want to double it, but we have a problem about capture and beneficial use of waste. The ECCLR Committee, which I am a member of, has said:

"The Committee understands the volume of waste (and untreated waste) discharged from fish farms into the marine environment is half the volume of human (treated) effluent of Scotland."

If any other industry was dumping sewage in the sea on that scale, there would be a national outcry. One aspect of SEPA's forthcoming sector plan, which Anne Anderson spoke about, is about increasing capture and beneficial use of waste. How will that be done? What action will be taken and what action can be taken on established sites? How can we resolve that? You have five minutes.

Anne Anderson: I will be as quick as possible.

Richard Lyle's opening point about human waste and fish waste is important. The situation is like apples and oranges in respect of how we control them. A combination of dilution and dispersion, breakdown by animals and bacteria in the environment, and fish farms being in exposed dynamic locations is used. There are various controls. I will not be able to give you the details in five minutes, but I can provide a written response.

11:00

In terms of the ability to move and to change, Cathy Tilbrook referenced—perhaps everyone has—technical innovation and solutions. Across the globe, there are approaches to capturing solids—the organic load. We assess on the basis of the environmental capacity to sustain, which is absolutely crucial. It is about protecting the environment and biodiversity by ensuring that fish production is matched to environmental capacity, where farms operate.

There may well be technologies to capture the organic load that allow locations that are currently not so suitable to be used. There are trials being done around the world, and learning and testing are still being done on containment technology. Conclusions will be drawn based on the total environmental impact. All such questions require evidence before we push, instruct and take action, because taking action to resolve one particular environmental impact might have unintended consequences. It is about testing technologies.

There are upcoming trials: we are discussing and exploring such technologies' use in Scottish coastal waters. That is key: trials can get to a certain point, but we need to see them here and find out what difference they make, especially in locations that we are more concerned about.

The Convener: Cathy—do you want to comment on that?

Cathy Tilbrook: I think that Anne Anderson has covered the key points that were asked about.

Richard Lyle: On protection of wild fish, SEPA has said:

"We are in the process of exploring with other regulators, in particular Marine Scotland, how we can contribute. This includes reviewing how the different policy and regulatory frameworks, including our own wide regulatory powers, can be used to better effect."

What aspects of wild fish and farmed fish interactions do panel members address in the consenting and regulatory regime? Are any aspects not being addressed adequately? How will the proposed changes improve consideration of wild fish and farmed fish interactions? Lastly, how will the changes to current practice be made?

Mark Harvey: We are now using the environmental management plan conditions, which basically means that we are involved and we are aware of the sea lice numbers within a farm. That is one set of data. Recent announcements suggest that that data is likely to become public during the course of this year, so it is information that we would have had anyway.

There is also a requirement for fish farm operators to carry out relevant wild fish monitoring while also monitoring particular fish farms. That

monitoring requirement enables us to look for correlations between sea lice numbers on the farm and issues with wild fish health.

At the moment, we feel that that is the best that we can achieve. The report mentions use of the precautionary principle. Within the planning system, that means that we refuse an application when we do not have enough evidence. Before we refuse an application within a development management context, we have to decide that there are no suitable conditions that could mitigate the issue in question.

We have concluded, as have the planning and environmental appeals division and its reporters, that the additional requirement to monitor wild fish would meet the requirements: we would not have to refuse an application, but would need to ensure that monitoring was being carried out.

That is where we are with wild fish monitoring. However, the problem is that it is very piecemeal because of the nature of planning applications. I would prefer development of a much more complete database on wild fish numbers, interactions, activity and movements for the whole west coast. That would, of course, help to support, and would be an integral part of, the overall planning system.

I hope that that answers Mr Lyle's questions.

Richard Lyle: I would love to hear an answer from everybody on whether wild fish and salmon farming can coexist. The present situation seems to be like the one in America a number of years ago, when cow guys and sheep farmers had a war. Can wild fish and salmon farming coexist?

Mark Harvey: My job is to try to ensure that they can coexist. We balance development against environmental pressures. Historically, in the natural environment on the west coast there were between 500,000 and 1 million wild fish, and we now have 65 million farmed fish in the water. The interaction is complicated by the number of farmed fish, which is likely to increase. There is inevitably an effect from that interaction: our job is to work out how we can minimise the effect of one on the other. Increased sea lice numbers are an issue.

The Convener: Before I bring in Alex Adrian, I ask you all to remember to take sea trout into account, as well.

Alex Adrian: Wild fish and salmon farming can coexist, but that depends on management focus and effort. There is probably a lack, in that regard; the debate about the interaction lacks focus. The first aspect to look at is the effect that salmon farmers can be held accountable for, which is the significant increase in the lice burden on wild fish in the locality, which would not happen if the farm

was not there. However, the argument drifts off into aspects of survival, population status in rivers, correlations and so on, and it becomes very polarised. The focus needs to be brought back to monitoring of the lice burdens on wild fish, because that is the other side of the interaction.

A focus on just the numbers of lice on farmed fish is meaningless, as has been said in evidence to the ECCLR Committee. With regard to the available recommendations, the Aquaculture Stewardship Council recommends 0.1 adult female lice per farmed fish, Marine Harvest's manual advocates 0.2 and a project in Hardangerfjord in Norway several years ago advocated 0.3. Our legislation advocates 0.5 at the moment. The figures are all over the shop. We have to look at what is happening on that side and on the other—the wild fish lice burden. Integral to that must be questions about what we are going to do about that, how the information feeds back into farm management, and the trend analysis.

However, we must recognise that there is probably not a solution and that that will be an on-going management issue. There is huge complexity around the farm population, the wild fish population, the ecological dynamics of the parasite and all the environmental fluctuations around that. What is required is close monitoring and effective management, but those are absent at the moment or have been left to corporate business decisions. The situation needs to be brought into the regulatory framework, and addressed through the management planning that I spoke about earlier.

The Convener: Cathy—do you want to respond? We are pressed for time, so I would appreciate short answers.

Cathy Tilbrook: I agree with everything that Alex Adrian has said. We have come at the issue from the perspective of needing to give habitats directive advice in relation to Natura sites, including special areas of conservation that contain either wild salmonids or freshwater pearl mussels that are dependent on wild salmonids. In the absence of a key regulator for the interests of wild fish, and before the issue of environmental management plans came up through the local authorities, we came to a similar solution from the point of view of safeguarding SACs. That solution involved a technical group being set up to oversee monitoring, including the sweep-net monitoring of sea lice burdens on wild fish, which is the crux of the matter; finding problems on farms in areas where elevation in numbers of sea lice on wild fish was identified; and having management plans that allow changes to how farms are managed in order to reduce the sea lice burden.

It has taken us some time to establish all that, but the SAC technical group that will oversee that

discussion has now been convened by Marine Scotland, and work is being done to scope the monitoring that will be needed to give us the wider picture, certainly in terms of juvenile salmonid populations. We need to up the ante with regard to the sweep-net monitoring; we need to work out how that will be managed and who will pay for it. The industry is already stepping forward, in some cases, to consider how to take that forward. Tying all that together is a complicated process.

There are also issues around considering what areas we need to look at, because it is not necessarily easy to relate the sea lice burden on wild fish to individual farms. We need farms to think collectively on an area basis—perhaps at sea-loch level—about how they can reduce the burden of sea lice on the wild fish in their area.

We are making progress, but we still have quite a long way to go to make sure that everything is regulatorily enforceable as well.

The Convener: Was that a rehash of the tripartite agreement?

Cathy Tilbrook: It has moved on from that, but that is being borne in mind.

Anne Anderson: I agree with Alex Adrian and I am aware of the work that Cathy Tilbrook has talked about.

I can say a quick “Yes” to Richard Lyle’s question about whether wild fish and salmon farming can coexist, but I also state that there must be a range of appropriate practices to manage the sea lice burden, and that those practices must include not only chemical solutions but preventative and practical management and the other technologies that have been talked about. That approach must be followed by the industry consistently at the earliest opportunity—in relation to which Alex Adrian’s reference to the points at which treatment is instructed is important, as is his point about ensuring that that is delivered across every site in the same fashion. I mean treatment not only at one pen, but across multiple sites, as the first response in managing a situation in a wider area. Practical monitoring and management are essential, but coexistence is possible and should be the case.

John Finnie: I will ask a brief question, as much of what I wanted to ask about has been touched on already.

Reference has been made to the cumulative effect of various things, of which I will list three: the Marine Scotland science fish health inspectorate’s revised policy on the control of sea lice, which is due for review in July; the voluntary commitment that has been given by producers in relation to sea lice count; and SEPA’s plan for developing the sector. Are those elements sufficient to effectively

regulate the industry? If not, what issues will remain a challenge? I appreciate that much of that has been touched on, but I do not think that any reference has been made to the voluntary changes that the producers have announced.

The Convener: Who would like to lead off on that? It strikes me that the first question requires a yes or no answer and that the second question requires a shortlist of elements, but perhaps I am being too hopeful.

Anne Anderson: On the remit for which I am responsible—the sector plan approach, the work that is under way and our ability to regulate and control that work—the short answer to your first question is yes, because we have done the truthing and evidence on those pilot situations.

The issue of the cumulative effect and ability to expand the approach across the entirety of the marine coastal waters represents a resource challenge, because that is a costly process—again, I refer to our ability to charge.

I suggest that it would be far better for all regulators, industry and academics to work collaboratively to get things done quicker. Planning authorities and other regulators could then use that material to identify whether somewhere was a go zone or a no zone in respect of fish farming.

What was the second part of the question?

11:15

John Finnie: It was about SEPA’s sector plan and the producers’ voluntary undertaking on sea lice.

Anne Anderson: The producers have voluntarily agreed to release the detailed information, which will happen. Both the salmon and trout industries will provide that information, which will ensure that those two pieces marry up, because they collect information slightly differently.

John Finnie: What if they do not provide that information?

Anne Anderson: There is a certain amount of information that is provided. The key point is to have it made publicly available and consistent so that it can be compared. That is under way.

John Finnie: That is the point that I was trying to make. What if a producer says, “I’m not going to publish that”?

Anne Anderson: We do not ask for sea lice information, because we do not monitor fish health. It is for the fish health inspectorate to apply controls and decide how that should be regulated. One way in which a regulator can ensure a

change in behaviours is to put it into regulation, whether that is done through a licensing regime or on a statutory basis.

The Convener: Does anyone else want to add to that briefly?

Cathy Tilbrook: The fish health inspectorate thresholds are set on the basis of the health of the farmed fish. We still need to make that link. Local authorities have picked up the mantle because there was no other regulator with a clear mandate on that issue. However, there is still a gap in relation to who is setting the level for wild fish and how we manage that in the system.

Stewart Stevenson (Banffshire and Buchan Coast) (SNP): I will try to close off the issue of the interaction between wild fish and farmed fish. Before we get into the detail, I have a question that does not require just a yes or no answer, but might need an answer of, "Your question is hopelessly oversimplified." Does the panel agree that correlation is not indicative of causation? In other words, if there is a correlation between two things happening in two domains, that could mean an interaction between those things or it could be a further, shared external factor; correlation does not tell us that there is an interaction that is a causation. Is that correct?

I see people nodding, convener, so I will move on.

The Convener: Did you all nod?

Stewart Stevenson: All the panel members nodded. That is quite an important point.

The Convener: Cathy Tilbrook did not nod.

Cathy Tilbrook: I nodded. However, although we would not say that because we had identified an issue we would automatically link it to a specific cause, much of the advice that we give is given on the basis of taking into account proportion and risk in relation to our obligations. Therefore, we do not have to have absolute proof that something is linked in order to ensure that management measures are in place to avoid harm and to take that risk into account.

Stewart Stevenson: That is helpful. I am not trying to suggest that there is not an interaction; my point is about the language that is used in dealing with all that.

One of the difficulties with the whole issue is all the different players—for example, we have just had the first reference from the panel to the regulator that is responsible for fish health. It seems that three sets of people would have an interest in the interaction: the farm, and the customers of farms, that wants to sell with a good environmental message; wild fish interests, obviously; and local communities and communities

more widely. Is it clear to each of those groups how they can find out about interactions between wild fish and farmed fish? I suspect that it is not at all clear, especially as we have heard from the panel that there are gaps in the knowledge anyway. For those particular stakeholders, would it be clear where they need to go to get definitive answers to their questions?

Anne Anderson: No, it is not clear. There are too many different layers, and because there is an information gap when it comes to evidence on wild fish interaction not every question is even capable of being answered.

Mark Harvey: This is slightly off where the question was going, but I would add that we recognise that it is in everyone's interest that sea lice are kept to a minimum. There is no body involved in this debate that does not care about the sea lice burden. It is a big issue for the producer, the consumer, the retailer, the planning authority, the consultees and the environmental protection bodies.

It is important to recognise that everyone who is working in any way in the industry is spending a fortune on new methods of controlling sea lice. The degree of success in controlling sea lice is what causes a measure of risk in terms of wild fish interactions. We are quite comfortable that everyone is working together in the same way; the degree of success that is being achieved is what lends the edge to the regulatory need, because at the moment it is not always very successful and that is causing environmental issues.

Alex Adrian: I want to add to the comments on whether people know what is happening. It is important that people know what efforts are being made, because we are dealing with uncertainties and unpredictabilities. The fact that there is not a good outcome does not mean that there has not been a sincere and determined attempt to achieve one, and that must be recognised. That is not to say that industries should or should not be let off the hook.

To return to the very first question, the challenge for the regulatory regime is to enable those efforts to be properly directed not only to achieve the outcomes but to have adequate accountability in reporting for the people who are interested.

Stewart Stevenson: I want to pick up precisely on what you said. Everybody acting in good heart to address the problem is not, in and of itself, the point—the point is the outcome. In other words, sincere efforts being made to address the problem are not enough to influence how we regulate and manage the industry. You are nodding, Mr Adrian.

Alex Adrian: Yes, I agree.

Stewart Stevenson: That covers everything that I wanted to cover.

The Convener: You may comment if you keep it short, Anne.

Anne Anderson: I just wanted to say that that is one aspect. Stewart Stevenson opened by asking about correlation and causation, which is important. Without a doubt, that is one pressure in the picture, but I have made reference to a changing climate and other pressures related to other industries. It is important that we look at the totality of potential pressures on the situation with wild fish, be they salmon or trout. There must be clarity on the range of aspects and each of them must be handled, tracked and addressed, because no one of them is definitive; the combination of pressures is really important. Thank you for indulging me, convener.

Jamie Greene (West Scotland) (Con): I am acutely aware that we are only halfway through our line of questions, so I will try to consolidate the theme of where I would like to go next, which concerns oversight of the industry. By that, I mean growth plans for the industry—the speed and the locations of growth.

Briefly and individually, who do the panel members think currently provides oversight of the industry's expansion? Secondly, who do you think should be in charge of oversight of that expansion?

The Convener: I will give everyone a chance to answer, but I ask you to keep your answers as brief as possible.

Alex Adrian: It is tricky to answer the question, because of the fragmented nature of the regulatory framework with which we are working at the moment. It could be argued that Mark Harvey and his colleagues in local authorities have the lead role in determining what can happen and where.

There needs to be better dialogue between regulators, Government and the industry itself. At the moment there is a little bit too much of an us-and-them relationship between regulators and the industry, who I think need to be brought closer together to address the uncertainties and the questions that we want answered. To be frank, a lot of that can come only from the industry, if we are talking about the industry's ambitions on innovation and investment opportunities.

I do not think that a single party can take the lead; there needs to be a collaborative conversation, and the industry needs to be a central part of that. We would expect Government and local authorities to be closely involved, but ultimately it is about the stakeholders. I do not quite know yet whether the chosen approach

should be through a legal authority or dialogue between a number of parties. The only thing that we need to do is to ensure that the industry is part of the conversation, so that things are not left simply to the regulatory authorities, because we need input from the industry side.

The Convener: I encourage everyone to give concise answers.

Mark Harvey: The appropriate system is the planning system, which is already in place. We need to use its spatial aspects to a greater extent to identify suitable areas. I disagree slightly with Alex Adrian, but only because, as I said, it is late in the day and the process should have begun a long time ago. Local authorities might need to step forward and provide regulatory clarity at this stage. We obviously need to talk to the industry and so forth, but we do not want to get into a five-year discussion period during which nothing is done.

Anne Anderson: I refer to previous answers about the cumulative effects. Each part of the regulatory landscape is looking at the impact in the wider context. Marine Scotland is doing heat mapping on lice, to get ever closer to the red-amber-green approach to sea lice monitoring that is taken in Norway, and an aspect of that is the layering of the total picture. That definitely relates to Mark Harvey's comment about spatial planning and the ability to identify viable places in which to farm fish effectively, efficiently and sustainably, taking account of other commercial users, recreational users and the need to protect habitats and the environment. It is about not just managing all that site by site, but considering the totality. The industry must be considered in a holistic context, so it is about informing the spatial planning approach in that regard.

Cathy Tilbrook: I will be very brief. I agree that it is down to planning. I think that Mark Harvey was referring to terrestrial planning, which is mostly how we deal with aquaculture at the moment, and I want to mention marine planning, which is the mechanism through which other uses of the marine environment are managed. We need to get better at integrating how we deal with aquaculture through the marine planning system, as it evolves. We have the national marine plan and we are developing our regional marine plans; we need to ensure that aquaculture is part of the dialogue as people work out how the regional marine plans will set out spatial areas for different uses.

Jamie Greene: Thank you all for those answers, but I am struck—and worried—by the concept that planning is somehow at the centre of all this. Planning is a reactive duty; it is about reacting to applications from the commercial sector—the private sector. The question that I was asking, which no one really answered, was about

who should have oversight of the future direction of the industry. Who should have oversight of the growth strategy, the industry's locations and the speed and rate of growth?

11:30

My second question is about the Norwegian model. Norway has taken a far more top-down approach in its 2006 Aquaculture Act, which introduces a licensing scheme. I think that others will have questions on the benefits of that approach and how it could work in Scotland, but should the Government in Scotland take a more top-down approach to legislation or strategy? Should a single Government agency lead the charge, as opposed to the current set-up in which it is difficult to pin down agreement on which agency should have oversight of the industry? I am struggling to see who is leading the charge on strategy.

The Convener: I will bring in Mark Harvey. On the basis that he will probably argue on behalf of the local position, I ask that Alex Adrian counters that with the national position.

Mark Harvey: I want to clarify something. The committee should not forget that there are two aspects to the Scottish planning system. One is the bit that I work with, which is—as was rightly said—the reactive applications part. However, Mr Greene's comments will have upset a lot of my colleagues back in Inverness who work on the development planning side. That is the strategic spatial part of planning, which many would argue is the heart of the planning system in Scotland. We are making the argument that that aspect could take on a stronger role and provide co-ordination local authority by local authority.

National legislation and policy feeds into that process. You said that more could be done at a national level. It helps when policies that are kicked off at the national level are policies that a local authority can follow at its own level. However, the development planning side needs to be brought forward more.

Alex Adrian: We need to be careful about the focus on spatial elements. Business in the marine environment is based on co-existence. The impacts, effects and interests of various businesses usually extend way beyond their development footprint. If you started to get too focused on spatial elements, you would rapidly run out of space. Marine planning will probably be more a function of managing co-existence and interactions than it will ever be about spatial apportionment.

On the issue of long-term planning for industries as dynamic as aquaculture and salmon farming, the rate of innovative change can often make

plans redundant very quickly. The industry's technological development proceeds at a far greater pace than the reviews of plans and agencies and suchlike. You could look back 20 or 30 years as the industry has developed and ask where the sites were then, why they were there, where are they now and why. Would we have foreseen those developments 10 or 20 years ago? How long should the plan be that we want to put in place? An element of evolutionary change is always associated with marine businesses, partly because of the environment, the extent of the interests and the impacts that you are talking about and the rapid development rate of the businesses. That is something to be wary of.

Jamie Greene: I will make a final observation. It is worth noting that the Norwegian Atlantic salmon farming industry grew by 150 per cent over the same period as we grew it 20-odd per cent, so there is disparity. Notwithstanding the rate of technological change to which you referred, there is a fundamental flaw in how the market has developed in Scotland. The committee is looking at how we can avoid the pitfalls, so that we can facilitate adequate growth.

Peter Chapman: I want to look at what we can learn from other countries, and Norway must be the focus of much of that. We must recognise that its industry is eight times the size of ours, making it huge in comparison; it is also growing rapidly—in the past 10 years, its production has increased by 1 million tonnes to 2.25 million tonnes. Despite that, Norway seems to regulate the industry better than we do. We are told that no fish farms are located near wild fish migratory routes and that escaped fish from farms must be caught, and we have heard from Mark Harvey about the traffic-light system. What can we learn from others' experiences, particularly those in Norway and the Faroe Islands, so that we can more effectively regulate the industry in Scotland?

The Convener: We will start with Anne Anderson on that. If others want to come in, I ask you to limit your answers to a couple of points each, and if there are any points that we have missed, we will pick them up at the end.

Anne Anderson: At the risk of repeating myself, the review that SEPA has been undertaking has included all fish farming globally. We have ensured that we are informed not just by other regulators, whichever hemisphere they happen to be in, but on all aspects of fish farming. We have been closely watching what happens in Norway, Canada, Chile, the Faroe Islands and Iceland. We have been looking close to home at European countries and specific species, but we have also looked at fish farming practices in the global context. We have been exchanging information, including through study and field trips,

to better inform our future regulatory controls in the area.

There are location and temperature-specific aspects, and dialogue on what is usable and transferable and the best fit has been continuing for a number of years. The approach is certainly not new for us but, over the past year, we have carried out an intensive global assessment to ensure that Scotland is keeping pace, pushing ahead or, better still, leading on regulatory and environmental protection controls.

Peter Chapman: Having said all that, what specifically have you learned or what will you do differently in the near future because of the work that you have outlined?

Anne Anderson: It would be wrong of me to comment on that, as I am waiting for final policy decisions and legal checks and balances. That process is imminent. As I said, we will publish at the end of June, so I am literally days away from getting formal confirmation of some of those points. Thereafter, we will announce the regulatory framework. It has been a year-long work and we are right at the end of the process—the committee's inquiry commenced midway through that.

One of the key things is to consider what lessons we can learn on what has worked and has led to better environmental outcomes, and whether those measures are directly transferable to and usable in Scotland. We have referred to the use of technologies elsewhere and testing them in Scottish waters. We are considering how we enable and encourage that. That is very much the process that we are undertaking.

Mark Harvey: I reiterate that the big lesson that seems to come from the international examples that I have seen is about providing the industry with a clearer map of where it should concentrate its activities. That would be hugely helpful for the industry and the regulator. We perhaps have an advantage in the application part of the planning system. If the industry wants to challenge that map, it could make an application in an area where we have indicated that we are not so comfortable with activities and then make its case. That could still happen. Generally, it would be a huge benefit to have done some of the environmental mapping that identifies the areas where industry activities are acceptable and those where they are not. Cathy Tilbrook mentioned the SAC areas on the west coast. The north-east coast has wonderful rivers where we do not want any impact and, on the west coast, we have SAC rivers, which we think should also be protected.

The Convener: For clarity, I just make the observation that there are SAC rivers on the east coast as well as on the west coast. In fact, a lot of

the rivers on the east coast are SACs because of species in the rivers or firths such as seals and pearl mussels.

Alex Adrian: Very briefly, on what we can learn, we should have bespoke legislation rather than the somewhat hodgepodge approach that we have at the moment. We need effective review and a management focus, which can accommodate changes and issues as they arise. We have to remember that planning can address only the activity and not the manner in which the activity is undertaken, but it is usually the management of the activity that makes it harmful or less harmful in environmental terms. We cannot always plan on the basis of what the activity is; we need to be able to review the way in which the activity has been undertaken. That is key and it is emphasised far more in the Norwegian system than it is here.

Cathy Tilbrook: One of the things that happen in Norway that we are interested in is the way in which good sites are identified at a regional level, which is the spatial planning aspect that we were talking about before. In Norway, they look for good sites and offer them up for leasing to companies, which compete with each other for the choice of suitable sites. That is something that we could look at here. It would need a change to the way we currently operate, but it might be beneficial.

On innovation, they do a lot in Norway with eco or green licensing. In our organisation, we have heard about some of the things that they are doing in Norway and are now thinking about bringing to some of their Scottish sites. For example, they use closed containment on offshore barge-type structures, which mean that they are still farming at sea but it is completely contained. Another aspect is community benefits, whereby communities get funding back from the leasing arrangements. Again, that would be interesting to look at in Scotland.

Peter Chapman: Could you focus in a wee bit on how the Norwegians control sea lice numbers, as they seem to be more successful at doing that? Their target levels are a lot lower than ours, and they seem to be able to achieve them. Do you have a comment on how they do that differently?

Cathy Tilbrook: I am not close to those arrangements, but I wonder whether it is having a stricter target that drives the innovation and the practice. You would probably be better to ask someone from Marine Scotland that question.

Colin Smyth (South Scotland) (Lab): What funding do your organisations provide for research and innovation projects relating to salmon farming, including assessments of wild fish stocks?

The Convener: I ask you to make those comments generic and not to go through each

individual modelling process that has been funded; otherwise we will be short of time.

Cathy Tilbrook: For example, we have been a partner-director on the Scottish aquaculture research forum for many years. Over the past five years, we have contributed around £140,000 to projects that look into different aspects of the sustainable development of the industry. Unfortunately, that group is coming to an end, so we are looking into how we channel that collaborative research in future.

We are about to contribute to the work that I mentioned earlier on juvenile salmonid monitoring, along with SEPA and Marine Scotland. We do quite a lot and I can provide more detail if you would like examples of the work that we are doing.

The Convener: That would be helpful.

Alex Adrian: We contribute funding for research across the scope of the aquaculture sectors. Like SNH, we participate in the Scottish aquaculture research forum, and we contribute to and fund individual projects. We like to co-fund and collaborate with industry or other agencies, and the scope for that can be anything from community benefit through to wild fish interactions and technical aspects. The key thing for us is enabling opportunities that will have a commercial legacy and, with further funding, can be taken up by other agencies or the industry itself.

Mark Harvey: Other than officer time that is taken in monitoring and so forth, we do not fund research.

Anne Anderson: We have a very limited amount of money to fund research, but we have intellectual property rights and laboratory analysis, so it tends to be in-kind support. As Cathy Tilbrook said, we would be happy to provide you with details of the various projects, some of which I have made reference to, that are under way in collaboration with industry, other regulators and academic institutions.

Colin Smyth: You mentioned collaboration with the industry. Should fish farm operators in Scotland contribute more to research? If so, how would that work in practical terms?

Anne Anderson: There is quite a high level of contribution to research. The Scottish Aquaculture Innovation Centre, which I believe will give evidence to the committee next week, has a high component of industry funding to identify. The most successful projects include a combination of regulator, business and academic factors to give a stronger and more evidence-based outcome, which is very important. The Norwegian model has some interesting built-in expectations on innovation that directly require drive. That is led by

Government, so other processes are used globally that we do not use in Scotland.

11:45

Colin Smyth: I want to touch on that. In the Norwegian model operators make a contribution to an aquaculture research fund. Do you think that there is sufficient investment in research in Scotland at the moment?

Anne Anderson: I am not in a position to be able to say yes or no to that. There is a range of investment, and it is a question of ensuring that it is joined up and highly visible and, importantly, that what money is then being used is not being duplicated. I would not want to—nor could I—give a yes or no response to that.

Cathy Tilbrook: I would probably answer no to the question of whether there is enough money. The ECCLR Committee report very helpfully highlighted a huge long list of evidence gaps, most of which we would recognise as being high priorities. I just do not think that, among ourselves here, we have anything like the amount of resource that would be needed to prioritise those and to start to tackle them. There is an issue with funding to answer the key research gaps to which we keep coming back and on which it would be great to make some progress.

Colin Smyth: Should that extra funding come from the industry?

Cathy Tilbrook: The industry is already putting money into research, as Anne Anderson said, but it might be useful to think about how we make best use of the funding that is there and which key evidence gaps we need to focus on now.

The Convener: Would Alex Adrian or Mark Harvey like to add to that, or are you happy to leave it at that?

Mark Harvey: I will quickly give a quote. We had a response from the Scottish Government on recent planning applications that highlights where we are with research. It made this clear statement:

“salmon aquaculture can result in elevated numbers of sea lice in open water, and hence in some circumstances is likely to have an adverse effect on populations of wild salmonids. However, the magnitude of any impact from sea lice arising from farms in relation to the overall mortality levels of sea trout or salmon populations is not known.”

It strikes me that that indicates that there is a serious dearth of data this far on into the history of Scotland's salmon industry. Addressing that would involve a fairly fundamental piece of research that obviously has not yet occurred. It is not possible for Government officials to assist a planning authority by providing any information on what is an important material consideration for us. Therefore I suggest that funding—possibly from

industry and Government in combination—is needed to bridge that gap, which is quite a glaring one, given that it is now 2018.

Alex Adrian: I would like to add to what Mark Harvey has said. There are some very substantial sums floating around, because a lot of research is being undertaken by companies that service the industry as well. If we were to add up the totality of what is being spent, I suspect that it would be fairly significant.

However, I agree that research is possibly directed more towards the technical side rather than the management side. On matters such as the interaction between wild fish and farms, to which we keep coming back, I am not convinced that there is a solution as such that research will address, but we could certainly look to put greater funding into piloting novel management practices, innovative relationships and collaborations, for example. Improving the relationship between the industry and its stakeholders through interactive pilots and so on has been a gap area that could do with a bit more resource.

The Convener: Thank you. That is probably a good place to leave that subject and move to the next set of questions, which is from Fulton MacGregor.

Fulton MacGregor (Coatbridge and Chryston) (SNP): My questions are about the funding of regulation. I will start by asking panellists whether, in their opinions, fish farm operators' payments for licences cover the costs that their organisations accrue in regulating the sector.

The Convener: Would Mark Harvey like to answer? It sounds like the answer could be yes or no. *[Laughter.]*

Mark Harvey: You will get me shot. The maximum fee for a fish farm planning application approaches £20,000, which sounds a considerable amount. The money probably covers the initial cost of determining the application—it is one of the few planning situations in which that happens. I cannot answer the earlier point about whether it covers on-going monitoring, because I am not sure what level of monitoring would be required. No other fee can be drawn on, so the £20,000 would have to cover monitoring by planning authorities. The answer is reasonably positive but with, perhaps, a negative tail end.

Anne Anderson: SEPA is able to charge, and we have a published charging scheme. The intent is to balance the effort that we expend on an industry. The greater the volume of applications, the higher the fee component will be. That includes each individual process right down to inspection, and we can recover the cost of some of our enforcement actions, which is the new

ability under two powers in our new suite of enforcement tools. Therefore, we have cost recovery. The industry pays for enforcement and monitoring, because we are able to charge for those activities.

Fulton MacGregor: Why are there currently no SEPA-monitored farms? Does that affect compliance?

Anne Anderson: I am sorry, I did not—

Fulton MacGregor: Why are no farms monitored specifically by SEPA?

Anne Anderson: Our risk assessment process targets our monitoring effort. Companies undertake and report on their own monitoring, regardless of the regime in which they operate. Our regulatory control includes advice on when they will undertake particular studies, so that we are able to regulate the monitoring exercise to capture data. The laboratory analysis and the validation of results comes under accredited schemes. The process is a combination of operator modelling, and oversight, audit and compliance, with enforcement-led monitoring by SEPA as the regulator.

The Convener: Would Alex Adrian like to answer with regard to the fees that are raised for Crown Estate licences?

Alex Adrian: Our organisation is not a regulator; it acts in a landowning capacity and grants rights once all the necessary consents have been secured. We do not charge an application fee for a lease, but we charge a rent, which is derived from an independent sector-level review every five years. The rent is currently £27.50 per harvested gutted weighed tonne for a fish farm on the mainland, with a 10 per cent discount if fish are farmed in the outer isles. The annual charge covers our costs, but that is not the purpose; the revenue is returned to the Scottish consolidated fund.

Fulton MacGregor: How could Scottish regulators work together more effectively? Is it appropriate to consider a system of auctioning licences, such as that in Norway? That is my final question.

The Convener: Who would like to answer? Mark Harvey looked the other way, which must mean that he wants to answer. *[Laughter.]*

Mark Harvey: I really cannot say much on the licences. The first question was about how regulators—

Fulton MacGregor: It was about how regulators could work together more effectively.

Mark Harvey: One point that arises from the remarks by Alex Adrian, Anne Anderson and Cathy Tilbrook is that monitoring, which we have

all talked about, is an area to look at for improvement. Alex Adrian said that it could be an important part of future regulation. We are probably quite weak on the co-ordination of monitoring of individual farms, as they tend to draw our interest for particular attention at particular times. There is a need for each of us to look at what the other bodies are doing in relation to individual farms to make sure that our approaches are absolutely co-ordinated, although it is quite early days on that front.

Anne Anderson: There needs to be collaboration with regard to the sharing of information and data sets. When we undertake our wider surveys—last year, for example, there was a focus on fish farming in Shetland—those reports are published and their conclusions are made available. Information on individual sites is submitted to us, and we publish the results of those assessments. The sharing and linking together of such pieces of information is actively being progressed at the moment. It is a case of making sure that everybody has access to them to help to inform their regulatory actions.

Cathy Tilbrook mentioned some of the joint study work that is being done. This year, a study of electrofishing in Scotland is being led by Marine Scotland. It is a tripartite project, in the delivery of which SNH and SEPA are actively involved. Every bit of data should be available to each regulator, and the public and the industry should have access to it, too.

The Convener: Cathy, do you want to say anything? I am not sure that Anne Anderson or Mark Harvey covered the auctioning of licences, which Fulton MacGregor asked about. I might come back to them on that.

Cathy Tilbrook: As I mentioned, we heard about a similar system in Norway. A lot more thinking would have to be done about how such a system might operate in Scotland. The basis for it would be having a clearer picture of where the suitable locations were and having a joint discussion, at a very early stage—before the lease areas are identified—involving the industry, all the regulators and communities. I can see that there would be benefits from such a system, but thought would have to be given to how it would tie in with the ability to regulate.

Recently, there have been lots of pieces of work on the regulatory regime. We had the independent consents review, which looked at how that process could be streamlined. It was hard to find major changes to the way in which we do things. In Norway, a similar number of bodies contribute, but there is a main front-facing body to which applications go, and the consultation takes place behind the door, as it were. I do not think that the

way in which the Norwegian system works is that different.

As I mentioned earlier—this relates back to monitoring—it would be good to consider how we collaborate in relation to the area management of fish farms. That would involve thinking about what the monitoring was telling us about all the fish farms in an area—we could do that at sea-loch scale, for example—and what that meant for the management of the individual farms in the area. We might need to think about how, as a group of regulators and advisers, we can do that better.

The Convener: I will allow each of you to comment briefly on the auctioning of licences.

Alex Adrian: I have a quick comment on the regulatory side. Norway has an overarching piece of legislation—the Aquaculture Act 2005. Although a multi-agency approach is taken, the relationship between the agencies is governed by the terms of that act. That is what is missing here. Cathy Tilbrook mentioned the independent review of consents, which was undertaken in 2016. It refers to the Norwegian arrangement as a proposed solution.

As far as the auctioning of licences is concerned, it depends on the value that is attached to leases and licences. In our case, we look to have the rent that we charge on a lease reflect the business that is undertaken on the ground. If leases or licences were to be auctioned off, would the value of the business that was to be undertaken still be reflected or would a separate asset market be created that would be subject to supply and demand? At the moment, there is a huge demand for new sites in Scotland. Would that mean that there would be a property price-style explosion in the prices that were offered, which would not necessarily reflect the value of the business?

What is important is that the value of the business is reflected and that the process is free and fair for all those who might wish to be involved in it. If the prices were to go up, the bigger companies would be in the game, while others would be excluded. We are dealing with a consolidated industry that is composed largely, but not exclusively, of large multinational companies. We must be careful that, by adopting such a measure, the regulators do not automatically start a process of consolidation. It is up to the industry to do that for itself. We must make sure that we are fair in reflecting the value of what is offered in the price that is charged.

The Convener: Would Mark Harvey or Anne Anderson like to make a brief comment? You do not have to.

Mark Harvey: I merely want to say that such an auction system would have to be supported by

certainty for the industry. People have to know what they are bidding for. In fish farming, people would need to know that they were bidding for a site that would end up producing fish. We are not there yet, by some degree.

Anne Anderson: I have nothing to add. I agree with what my colleagues have said.

The Convener: That brings us to the end of our questions. I thank the members of the panel for giving us such detailed answers. If you want to feed into the inquiry, there is still an opportunity to submit written evidence—I think that the deadline is 28 April, although there is some flexibility on that. I encourage you to do that.

Meeting closed at 12:01.

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