



The Scottish Parliament  
Pàrlamaid na h-Alba

## Official Report

# RURAL AFFAIRS, CLIMATE CHANGE AND ENVIRONMENT COMMITTEE

Wednesday 5 December 2012

Session 4

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**Wednesday 5 December 2012**

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**RURAL AFFAIRS, CLIMATE CHANGE AND ENVIRONMENT COMMITTEE**  
**28<sup>th</sup> Meeting 2012, Session 4**

**CONVENER**

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

**DEPUTY CONVENER**

\*Graeme Dey (Angus South) (SNP)

**COMMITTEE MEMBERS**

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

\*attended

**THE FOLLOWING ALSO PARTICIPATED:**

Alex Adrian (Crown Estate)  
Steve Bracken (Marine Harvest)  
Councillor George Farlow (Highland Council)  
Alex Kinninmonth (Scottish Wildlife Trust)  
Guy Linley-Adams (Salmon and Trout Association)  
Professor Randolph Richards (University of Stirling)  
Douglas Sinclair (Scottish Environment Protection Agency)  
Professor Phil Thomas (Scottish Salmon Producers Organisation)  
Professor Chris Todd (University of St Andrews)  
Alan Wells (Association of Salmon Fishery Boards)  
Ken Whelan (Atlantic Salmon Trust)

**CLERK TO THE COMMITTEE**

Lynn Tullis

**LOCATION**

Committee Room 1



## Scottish Parliament

### Rural Affairs, Climate Change and Environment Committee

*Wednesday 5 December 2012*

[The Convener *opened the meeting at 10:01*]

### Subordinate Legislation

#### Rural Development Contracts (Rural Priorities) (Scotland) Amendment Regulations 2012 (SSI 2012/307)

**The Convener (Rob Gibson):** Good morning, everybody, and welcome to the 28th meeting in 2012 of the Rural Affairs, Climate Change and Environment Committee. Members and the public should turn off all mobile phones and BlackBerrys, as leaving them in flight mode or on silent affects the broadcasting system.

Agenda item 1 is subordinate legislation. The committee is invited to consider a negative instrument, as listed on the agenda, on rural development contracts. Members should note that no motion to annul has been received in relation to the instrument. I refer members to the clerk's paper. Is the committee agreed that it does not wish to make any recommendation in relation to the instrument?

**Members** *indicated agreement.*

## Aquaculture and Fisheries (Scotland) Bill: Stage 1

10:02

**The Convener:** Agenda item 2 is consideration of the Aquaculture and Fisheries (Scotland) Bill. This is our second evidence session on the bill. Today, we will have a round-table discussion on matters relating specifically to aquaculture in parts 1 and 5 of the bill.

I welcome everybody and ask our witnesses to introduce themselves—just to say who they are, not to make a speech. We will have plenty of questions for you in due course and we want to make this meeting flow as well as we can. If the discussion is to flow, it will be through you indicating to me when you wish to speak and not speaking over other people. We look forward to your participation and a positive meeting this morning. It is important for us, as laypeople, to understand the intricacies of the bill.

We will start the introductions with Alan Wells.

**Alan Wells (Association of Salmon Fishery Boards):** I am from the Association of Salmon Fishery Boards.

**Steve Bracken (Marine Harvest):** I am the business support manager with Marine Harvest and the chair of the improved containment working group.

**Professor Chris Todd (University of St Andrews):** I am from the University of St Andrews.

**Professor Phil Thomas (Scottish Salmon Producers Organisation):** I am the independent chairman of the Scottish Salmon Producers Organisation. I am not, as it says on the agenda, the chief executive. I might have aspirations to be the chief executive but that is another matter.

**Professor Randolph Richards (University of Stirling):** I am from the institute of aquaculture at the University of Stirling and the chair of the healthier fish working group of the ministerial working group.

**Alex Adrian (Crown Estate):** I manage aquaculture business for the Crown Estate.

**Councillor George Farlow (Highland Council):** Good morning. Madainn mhath. I am vice-chair of Highland Council's planning, environment and development committee.

**Douglas Sinclair (Scottish Environment Protection Agency):** I am a fish farming specialist with the Scottish Environment Protection Agency.

**Ken Whelan (Atlantic Salmon Trust):** I am research director with the Atlantic Salmon Trust.

**Guy Linley-Adams (Salmon and Trout Association):** I am solicitor for the Salmon and Trout Association's aquaculture campaign.

**Alex Kinninmonth (Scottish Wildlife Trust):** I am policy officer with the Scottish Wildlife Trust.

**The Convener:** Thank you. My colleagues with the purple nameplates are the committee members.

I will start off with a general question to help us get some sight of the bill. As a member of the committee that scrutinised the Aquaculture and Fisheries (Scotland) Act 2007, I recall the debate at the time, although perhaps not in intricate detail. Has that legislation worked in tackling sea lice and fish farm escapes? If not, why not?

**Professor Thomas:** The 2007 act is pretty comprehensive in that it gives Marine Scotland in particular total access to all farm records for every farm in Scotland and very substantial powers to demand that farms correct any activity that the fish health inspectors feel needs to be corrected. Ultimately, it can give fish health inspectors the powers to take over and run farms. In that regard, it is a pretty extensive piece of legislation.

**Alan Wells:** Phil Thomas is right to say that the 2007 act allows the Scottish ministers to require the execution of such works or the taking of other steps for the purpose of the prevention, control or reduction of parasites. However, we have been informed by the fish health inspectorate, which is responsible for that activity, that the powers are limited to dealing with problems with farmed fish—in other words, the fish in the cages—and do not extend to the health and welfare of wild fish.

We do not believe that the 2007 act specifically precludes action to be taken with regard to the health of wild fish but, if it does, it would be useful for the 2007 act to be amended to allow that action to happen. In short, the provisions in the 2007 act are specifically about the health and welfare of the fish in the cages but we are equally concerned about the health and welfare of wild fish—the fish outside the cages.

**Guy Linley-Adams:** My point is the same as Allan Wells's. The law as currently interpreted by the fish health inspectorate contains a lacuna in that if the inspectorate finds a severe lice problem on a farm it can order a lice treatment only for the farmed fish, not for the wild fish. It is an issue of welfare rather than the wider environment.

**Councillor Farlow:** We have been wondering why medicine and biomass production are not related. After all, on a terrestrial farm we would not let livestock health suffer because of a lack of

medicine, and I do not see why the same should not be the case in a sea loch.

**Douglas Sinclair:** In response to George Farlow's comment, I point out that the issue was certainly discussed in the consultation on aligning biomass with what we might call treatable biomass. At the minute, we authorise the amounts of medicine that our model suggests are appropriate for the environment and license the level of biomass that is appropriate at a given fish farm, but the two numbers are not necessarily aligned at each farm. We would say that it is up to the fish farmer to ensure that he holds a level of stock on his farm that can be treated responsibly using the available medicines. In our view, it is a husbandry issue.

**Alan Wells:** Picking up on that, I note in its submission that the SSPO feels that it was a missed opportunity not to give the Scottish ministers the power

"to allow them to instruct SEPA to vary CAR licences".

That almost inevitably would mean an increase in the fee for a licence for treatment under the Water Environment (Controlled Activities) (Scotland) Regulations 2011, but it would not necessarily take into account the environmental effects of the medicine.

Councillor Farlow's point is correct from that point of view. Rather than allow unconsented treatment with the associated issues, it would be far better to ensure that the permitted biomass and sea lice treatments are linked. Basically, farmers should not be permitted to hold more fish than they can effectively treat at any given time.

**Professor Thomas:** I want to pick up on the point that Alan Wells made initially and that Guy Linley-Adams followed up. The perception that the fish health inspectorate cannot take action in relation to wild fish is wrong. The code that the inspectorate uses to inspect has adopted the elements of the industry code that set treatment limits and give guidance on when treatment is given, for example, in the spring, autumn and so on. The fish health inspectorate can follow that code, as that is the code that it uses to inspect. Therefore, that perception is wrong.

One tricky issue that is often lost in the debate is that there seems to be an assumption that sea lice come from fish farms. Sea lice are already there. For many fish farmers, the most problematic issue is when a run of mature wild fish come in, as they bring in sea lice—there is a sea lice strike on farms. In that situation, there can be rapid increases in sea lice numbers. The point about the CAR licence is that, when such situations occur and there is a critical incident, it would be helpful to be able to vary the CAR licence so that the fish farmer can deal with the specific incident promptly.

**The Convener:** I will bring in Nigel Don, and we can home in on sea lice.

**Nigel Don (Angus North and Mearns) (SNP):** I have been intrigued by what I have learned in the past few weeks in trying to work out what on earth is going on out there. Given that there are a lot of very capable people round the table, I wonder whether you can help me to understand the science a little more. I will ask several questions. I know that that is the wrong way to ask questions, but I do so deliberately in the hope that it will open up the debate rather than just have one question answered.

Wild smolts come down a river, sit in a sea loch and then eventually go to sea. Let us assume that the sea loch has a fish farm in it. We have to accept that, if there is a fish farm, there must potentially be at least some reservoir of lice and that, if there was no fish farm, there would potentially be at least a smaller reservoir. I can understand that that might have an effect on smolts going to sea—they might pick up lice before they do so—and we know that that has something to do with mortality. I can understand all that, I think.

I have no understanding, however, of how the lice that are potentially on the fish that are inside the nets get on to smolts that are outside the nets, or whether a further net that is some distance beyond that would effectively stop lice from moving between the wild and farmed populations. The other thing that I have no understanding of is how long the smolts might be in the sea loch in their passage from river to sea and how long the fish might be in the sea loch once they come back from the sea and before they move up the river to spawn, which Phil Thomas has just mentioned.

There is a lot of scientific stuff on which I plead complete ignorance, and I do not think that any of it is covered in the papers. I ask the witnesses to work their way through the model to give us an idea of how lice move round in the environment and how we can control them. We know that people have different vested interests in the environment. Your answers might enable us to work out how we can protect all the vested interests, which I am sure is what we really want to do.

**Professor Richards:** The life cycle of the lice is fairly complex and involves a number of stages. It starts with an egg stage. The eggs hatch out into free-swimming stages in the sea. There is then a further moult and then, eventually, they get on to fish. The cycle then goes through a number of moults on the fish, until an adult stage is reached. Generally, the females then produce eggs, which continue the cycle. That takes several weeks to progress.

We discussed the issues in the healthier fish working group, and the whole concept behind when treatment should occur is really to protect the wild fish and to avoid the infectious cycle continuing. It is not so much to do with a problem with the welfare of farmed fish. At the same time, we must be aware that, the more frequently treatment is undertaken, the more likely it is that resistance to products will develop, so the two things must be balanced. Smolts going out to sea are more likely to be subject to infection from lice in the free-living stages in the sea and then to go through the cycle.

10:15

The advantage of the monitoring that goes on in fish farms is that we can monitor the different stages developing through the fish's life cycle and we can see the lice going from stage to stage, so we know in advance when adult stages are likely to develop. That means that people are warned of when a treatment will be likely. With advance warning, treatment can be put in place. The levels that we have chosen take account of smolt migration to reduce the impact as much as we can.

**Ken Whelan:** The challenge is interesting. I will work my way down through the points for members—it is useful to do that. Professor Richards is right about the smolts moving out.

It is important to separate sea trout from salmon, because they behave differently. Salmon are trying to get to the big corridor—the highway that will bring them north—as quickly as possible. Salmon therefore tend to move through the bays much more quickly than sea trout. For a lot of sea trout, the bays are their homes so, in the round, sea trout are much more likely to pick up large numbers of lice than salmon are, because sea trout are in the location.

I am not aware of any way to contain physically the tiny free-swimming stages that Professor Richards mentioned. Interesting research in Scotland in the past few years has shown clearly that, once such lice get out into the environment, they can end up in the interface between the freshwater and salt water moving around in the bays. At that stage, they are looking for a host—an animal on which they can settle—and they do not separate out between fish that are in cages and wild fish that are in the bays.

We do not have a lot of information about how long fish stay in sea lochs—that is certainly a gap that we need to fill—but the small amount of research that has been done suggests that salmon tend to move out much more quickly than sea trout.

Another important thing in a lot of the published literature is consideration of the very early stages of lice, rather than the bigger lice that we see photographs of. Generally, the biggest problem that can occur is a large release of juvenile lice synchronously with a smolt run. If what is known in technical terms as an epizootic occurs—when a bloom of very tiny lice appears in the bay—that can pose a major risk to any salmonid that is in the bay.

When there is an epizootic in the bay, intense infestations of lice occur. To a layperson, the lice causing the problem would not even appear as lice—they are like dust on the fins, back fins and tails of fish. The period when the smolts go to sea—between March and May in any given year—must be kept clear of epizootics. That is the critical period in which management must take place.

**The Convener:** Several people want to come in. I will call Alan Wells, Steve Bracken and then Professor Todd.

**Alan Wells:** A lot of what I wanted to say has been covered. I emphasise the difference between sea trout and salmon—

**The Convener:** It helps if we do not repeat things.

**Alan Wells:** Absolutely.

I will pick up on Phil Thomas's comment that sea lice come from wild fish. Originally, that was the case for sure—sea lice are a natural parasite and it is clear that the original infestations came from wild fish—but we are in no position to say where an individual louse came from and, because of the complexities that we have talked about, we certainly cannot track a juvenile louse from any given host to a subsequent infection. Scientifically, we cannot say where an individual sea louse came from or whether it came from a farm or a wild fish. The chances are that it is a bit of both.

**Steve Bracken:** I have just two points. To pick up on what Alan Wells said, it is important to stress that, when smolts go to sea, they have no lice on them and are completely lice free, so they acquire lice in the marine environment.

The second point picks up on what Ken Whelan was saying. The idea of a secondary net going around a fish farm to trap lice or keep lice out would not work, given the size of mesh that would be required. If we tried that, we would reduce the oxygen flow to the fish, which could kill them.

**Professor Todd:** I reiterate that the larvae are less than a millimetre in size. They are so small that it is physically impossible to contain them. Therefore, one of the consequences is that gravid females among farmed fish will by definition be releasing larvae to the wider environment. In a

fjord or a sea loch, that gives a farmer a potential problem of reinfestation of the stock and it must also impact on any adjacent wild stocks.

Those impacts go beyond the local environment. By the time that the juvenile lice that an emigrating smolt picks up become reproductive, the smolt will be in the Norwegian sea and will be interacting with fish from the east coast of Scotland, Norway and Russia. There will be cross-infection. The genetic analyses that we ran some years ago showed that, genetically, the population of *Lepeophtheirus* in the north Atlantic is a single population because not only are the larvae transported but the fish also move large distances.

There are two other important points. *Lepeophtheirus* is extremely unusual among parasites in that it shows 100 per cent prevalence on wild fish. The vast majority of parasite infection levels seldom get anywhere near 100 per cent because, by chance alone, some host will not be infected. That means either that the animal is extraordinarily effective at finding the fish or—more likely—that the behaviour of the fish is such that they will always be in the right place to encounter the parasite. You should not underestimate the efficacy of the parasite in maintaining that host-parasite relationship.

**Professor Thomas:** This is just a point of detail, but it is an important one. What has been said is correct. The area in which we would get problems is where sea lice on farmed fish are shedding the juvenile elements that become free swimming. However, the whole of the treatment strategy that the industry has adopted since the early 1990s has been geared towards counting sea lice on farmed fish and treating them before that shedding stage—treating adults to prevent the shedding.

The difficulty is that, when wild runs of salmon come in from the sea with heavy infestations of lice, the transfer of lice from the wild salmon to the farmed salmon tends to be a mixture of lice of different stages, including lice that are quite close to mature as well as lice that are at the free-swimming stage.

**Nigel Don:** Up to now, I understood that lice did not transfer except when they were in their first stages, when they are so small that they get out and about—the idea of a bloom was mentioned. However, Phil Thomas is suggesting that mature fish coming back from the sea bring lice at different stages and that lice at later stages in their development might transfer at that point. That is not what I thought that everybody else had told me. I thought that a mature louse would not transfer. Was I wrong?

**Professor Thomas:** Without getting too complicated, there are two different types of sea

lice, one of which often comes in not on salmonids but on other fish species. It can transfer in a range of ways. However, you are right in thinking that the predominant route of transfer is through the free-swimming stage.

**The Convener:** We must move on to specific issues to do with sea lice and the situation in the industry. We will do that after we hear from Alex Adrian.

**Alex Adrian:** Thank you, convener. It is important to remember in the discussions that we do not get caught up in thinking that there are absolutes here, because these are biological interactions that are subject to a high degree of variability because of commercial husbandry and management practices, the prevalence of wild fish and their stock status, environmental variables and seasonal cycles. There is no silver bullet solution. I stress that we are talking about biological interactions that need to be monitored and managed.

The first question was on how the bill differs from the 2007 act. The bill advocates the engagement that will lead to the management of the biological interactions. From both the wild fisheries side and the farmed fish side, there are variables and events on a seasonal basis that will either increase or decrease the severity and prevalence of particular infestations. It needs to be borne in mind that that is an on-going management issue. In my view, there is no point at which, in the absence of a vaccine or something like that, we can say that we have sorted it out. In the current climate, it is a case of on-going communication and management at a level that is pertinent to the prevailing local conditions. It is not necessarily about a national solution but about working at a local level at which the practical manifestation of both farmed and wild fish status can be most easily dealt with.

**The Convener:** Nigel Don has a further, specific question.

**Nigel Don:** I have a question about the publication of data on sea lice, on which we have heard different views. Would the publication of that data at individual farm level pose a problem for the industry? Will it not be published eventually anyway?

**The Convener:** Who would like to answer that?

**Professor Thomas:** I am happy to.

**The Convener:** I just point out that you said at the beginning that there is total access to records under the 2007 act.

**Professor Thomas:** That is absolutely right.

**The Convener:** If that is the case, then in the light of Nigel Don's question when will all those figures be published?

**Professor Thomas:** Let me describe the context. The fish farming industry, like agriculture and all other parts of the food chain, works under a normal regime of statutory regulation—that is common across the piece. That statutory regulation works in all sections of the industry on the basis of having legally set rules and regulations and an inspectorate system that operates alongside. That is the system under which aquaculture operates at the moment.

As it happens, the aquaculture industry has gone further—that is partly for its own reasons; it is not entirely altruistic. For the past two years, we have been publishing area-based sea lice counts. Frankly, the ideal would be a monitoring system that is based on free-swimming sea lice in loch waters everywhere, because that would provide information both for the farmed fish industry and the wild fish sector.

What we have agreed to do at this stage, taking further account of the wild fish considerations, is to move on from the area basis on which we have been publishing. Currently, we use six areas across Scotland, which we decided was the most appropriate approach after analysis from a sea lice epidemiology standpoint—albeit that it was done for our own interests. In the future, however, we will move to a situation in which we will have 26 to 28 areas, so there will be a much finer disaggregation.

The convener asked why we do not simply publish the data for every farm. In my view, that would not contribute much because the issue is the sea lice in an area. There is also the fact that there is almost a moral situation, if I can put it that way, as far as the farmer is concerned. Where a farmer experiences a strike of sea lice coming in from the wild, it seems unreasonable, certainly from my standpoint, to tell the farmer that he has to put the figures into the public domain.

I am sure that Alex Fergusson, for example, would react in exactly the same way if I told him that he has to put on a website every single tick infection that he has on his farm. It is not normal business practice in any part of the food chain.

10:30

**The Convener:** I think you have been named, Mr Fergusson.

**Alex Fergusson (Galloway and West Dumfries) (Con):** I thought I recognised it, convener.

I take the point, Professor Thomas. I no longer farm but when I did, and if I farmed now, I would

have to record every treatment that I undertook against ticks in a logbook that would be made available to the Department for Environment, Food and Rural Affairs on inspection. However, that is publicly available and, as I understand it, every other sector that collects site-specific emissions data has to report it to a regulatory body, which publishes that data. Can you convince me why salmon farmers should be any different?

**Professor Thomas:** I disagree on the detail of that. Let me put it this way: can you point me to any area at all in which individual disease, lice or tick occurrence on farms is published?

**The Convener:** There is a forest of hands.

**Alex Fergusson:** I am happy to leave it to others, convener.

**The Convener:** Douglas Sinclair had his hand up first.

**Douglas Sinclair:** Phil Thomas's point is correct, in that we are talking about ectoparasites—parasites on the outside of animals, be they cattle or sheep. The difference is that the ectoparasites on the outside of salmon pose a significant risk to other people's interests. If Alex Fergusson has his cattle in the byre in winter and they have ticks, ringworm or whatever else, unless it is something really bad, such as foot and mouth, the risk to other people's interests in the environment is negligible. Lousy fish in cages in sea lochs in Scottish waters are a direct risk to other people's interests. There is a disconnect between sea louse infestations and louse infestations on terrestrial animals.

I reiterate Alex Fergusson's point. It is one of the few areas in the Scottish environment in which someone can be doing something that can significantly impact on someone else's interests and there is no public access to what is going on. We regulate various areas. For example, if someone lives downwind of smoking chimneys on a factory and they want to find out what is in the smoke, they can find out from us—from the published record. Fish farming in Scotland is the one omission. For all sorts of reasons, it ought to be sorted out and the information ought to be published.

**The Convener:** A number of people want to come in on this issue.

**Ken Whelan:** I will talk about the experience in Ireland. Many of the farms that I can talk about would have sister farms here in Scotland. The situation in Ireland is that we have had public access to lice information for quite a number of years. In another life I was responsible for the monitoring in Ireland. My team used to monitor 14 times a year. The material was collected and analysed and within two weeks the farms were

made aware of what the monitoring had shown. Within a month, the information was made available publicly.

There are huge advantages in that system. Phil Thomas talked about a lice strike. Whatever the source of a lice strike, if the information is published the full support of the state can go to the areas where the problems are, rather than being spread out widely throughout the fish farming community. There are huge advantages in that the areas where the problems are can be identified and solutions can be found.

My experience of the Irish programme is that it has worked very well in both the context of the farming sector and the context of the wild sector. I would recommend that sort of approach to you.

**Jim Hume (South Scotland) (LD):** I declare an existing farming interest.

I refer to something that Professor Thomas said. We already have diseases that have to be notified, including foot and mouth, sheep scab, brucellosis and tuberculosis. How serious are sea lice? Are they extremely damaging to wild fish and therefore should they be notifiable? We have plenty of examples of notifiable diseases that do significant damage to land-based industries.

**The Convener:** I am sure that people will want to respond to that.

**Guy Linley-Adams:** I want to talk about the scale of the lice problem in the context of the number of fish on a fish farm. An average fish farm will have about 300,000 fish—the farmers will correct me if I am wrong—and it takes a very low number of egg-producing lice on those fish to produce a very large number of juvenile lice that are outside the cage and in the wider sea environment. Those lice would not be there from the wild fish. It is a question of scale.

On a point of clarification, the 2007 act requires the industry and fish farms to keep records, which are available for inspection, but the records or copies of them are not held by the fish health inspectorate, so they are outside the scope of the Environmental Information (Scotland) Regulations 2004. The public does not have access to records unless the Scottish Government or its agencies hold them.

As Douglas Sinclair knows, I use the 2004 regulations fairly regularly against SEPA. I can get access to information about the amount of organic detritus from fish farms and information about sea lice chemical treatment residues in the sediments that surround fish farms. The fish health inspectorate and Marine Scotland science put on the website records of the number of fish that have escaped from fish farms.

The only piece of information that I cannot get is how many ovigerous lice are on the fish in the fish farm concerned, which is a surrogate for the number of juvenile lice that will come out of the fish farm and enter the wider environment. That is the gap that needs to be plugged.

**Claudia Beamish (South Scotland) (Lab):** I seek clarification on the reasons for confidentiality in relation to fish farms. Ken Whelan talked about what happens in Ireland and the committee has had evidence about the situation in Norway, where I understand that the approach to disclosure is more bold. At this stage, as a layperson who has been on two visits and has read the evidence, I think that the need for confidentiality needs to be balanced with the need to take account of public perception.

I am concerned about the issue. The Atlantic Salmon Trust said in its written submission:

“the Bill does nothing to take forward the concept of disclosure.”

I thought that the need for accountability was a reason for introducing the bill. I am keen to hear what the producers think about confidentiality and related issues.

**Professor Thomas:** May I first pick up on some of the other points that have been made? First, there are notifiable diseases in fish farming, just as there are in farming. Secondly, Douglas Sinclair suggested that fish farming is different from terrestrial farming. That is not the case. Ticks on one farm will affect ticks on the farm next door, as I suspect the committee is aware. More important, perhaps, parasites on farm animals will affect humans, because humans come into contact with the animals. That does not happen in fish farming. It is simply not true that fish farming is peculiar and different from other industries.

On systems elsewhere, the Norwegians have exactly the same arrangement as we have in Scotland. The Norwegian industry publishes sea lice data on an area basis. The only difference is that in Norway the data is collected by the industry and published through a public agency website—there is no other difference in the approach that is taken. In Norway, individual farmers share sea lice data within groups, as happens in Scotland as part of the area management agreements, so there is a direct parallel in that regard.

I will pick up on what Ken Whelan said. The system is different in Ireland. Counts on farms are much less frequent than in Scotland, and I think that I am right in saying that the results are published retrospectively at the end of the year. The route that we have taken in Scotland is to publish quarterly data. We will continue to do that, and there will be much greater disaggregation of the data, so it will cover much smaller areas than it

has done in the past. That is not being done for fish farming; it is being done specifically in relation to the wild fish interests.

**Ken Whelan:** On a point of clarification, in Ireland the data are published publicly every month, and they are available within two weeks. They are not published on a yearly basis.

**The Convener:** You have made that point. Thank you.

**Alex Adrian:** I want to make a point about context. The argument about making data available is being made on the basis that there are adjacent interests that may be affected by lice on fish farms, but it is the context of just how those adjacent interests are affected and the significance of that effect that is material here. I would suggest that the publication of lice data is material to those whose interests are affected and the level at which the lice are being managed. For example, in an area management system, it is entirely acceptable that a particular farm's lice counts would be made available to the interests that may be affected within the management area.

If we are looking at the performance of the management area as a whole, it may well be that the lice figures that relate to the farms collectively in the area are more relevant because they will give an idea of how, collectively, that area is managing the significance of the effects of the lice. I would be interested to know why someone who is entirely unaware of the particular local context and significance feels that they should be privy to individual farm lice data.

I will give an example. Let us imagine a scenario in which a farm manages to keep its lice levels just below an agreed threshold and one in which a farm manages to keep its lice levels almost to zero but breaches the threshold on one or two occasions. In my view, no one really knows which scenario is worse and which has a greater effect on the local interests. Although in one case there has been a breach and in the other there has not, there is not necessarily a direct relationship between that and the impacts that emanate from the farms. I come back to the point that lice data is relevant only when the context is appreciated. Outside that, I think that it is necessary to ask why it should be made available.

**The Convener:** George Farlow wanted to get in earlier.

**Councillor Farlow:** I just wanted to say that Highland Council receives figures from Marine Scotland science. Even when the numbers of sea lice are within the bounds of the code of good practice, there can still be a significant impact on the environment. From a local authority point of view, the impact on the environment is a planning

issue that we would like to talk about as soon as we can.

**Alex Kinninmonth:** We can fully accept the argument that sea lice are naturally occurring, but we are interested in the industry's management response to that. It is important that we get a proper and objective view of sea lice levels on a farm level. The proposal that has been put forward by the industry certainly needs to be discussed further by stakeholders before we can accept that it takes forward the openness and transparency agenda, which we understood was one of the underpinning elements of the Government's consultation on the bill and the package of measures alongside it.

The evidence that the committee has received and the responses to the consultation on the bill would seem to suggest that the weight of opinion is that access to farm-level data in a raw or disaggregated form is the preferred option. That is certainly the view of the Scottish Wildlife Trust through Scottish Environment LINK, and it has been endorsed by individual organisations, the wild fisheries interests, SEPA, the Association of Salmon Fishery Boards and many councils in the aquaculture zone, including Highland Council. I could go on.

The aggregation of data can mask issues at local level. From the perspective of our members, it fuels speculation that there is something to hide in all of this. That needs to be remembered.

10:45

**The Convener:** There will be a chance for other people to come in. We must keep moving along, although there are perhaps some specific questions that follow on from those remarks.

**Alex Fergusson:** There are some other things that I would like to ask about, but I will move on because I appreciate the time pressure. Biomass was mentioned earlier—I think by Councillor Farlow. I ask Douglas Sinclair to expand on what powers are available to SEPA currently to deal with the biomass caused on fish farms. How often have those powers been used? How and when might further powers be created to reduce biomass due to sea lice infestation?

**Douglas Sinclair:** We currently issue a licence for fish farms under the controlled activities regulations, and it contains a range of limiting conditions designed to keep the discharges from the fish farm within the capacity of the environment. We use a variety of models to set those limits, aiming to ensure that the environment outwith the immediate vicinity of the fish farm is protected.

As I say, we use a range of models. Certain models are used to set the limit for the biomass on the farm—the amount of fish that can be kept on the farm—and different models are used to set the limit for the amount of chemicals that can be used to treat the fish. That can give rise to a situation in which, for example, the farmer can hold 1,000 tonnes of fish on the farm but may have access only to a sufficient quantity of medicines to treat 800 tonnes. In the consultation on the bill, there was a suggestion that there will be powers whereby we may be instructed to reduce the biomass consent in such circumstances to 800 tonnes—the amount of biomass that can be treated with the medicines that are available. We are open to that, but the provision does not appear in the bill because ministers probably already have that capability under their power to direct us to reduce biomass.

Generally, we have never taken the step to reduce biomass for reasons of sea lice management, because we expect that farmers ought to keep farms at a level of stock that they can treat with the medicines that are available to them—that would be good husbandry. We felt that straying into the realms of dealing with biomass in relation to lice would be straying into fish health matters, which are not business for SEPA to attend to. We do reduce biomass for other reasons. For example, where the impact of a fish farm on the sea bed is unacceptable, we may reduce biomass at those farms—perhaps five to 10 farms a year would fall into that category. However, we do not generally reduce biomass for reasons of sea lice management.

**Alex Fergusson:** Claudia Beamish described herself as a layperson and I very much fit into that category on this issue. Is there currently a power to revoke fish farm licences? If there is not, should there be? If so, under what circumstances should it be exercised?

**Douglas Sinclair:** SEPA has powers to revoke any CAR licence. The usual reason for that would be that the environmental impacts are beyond the sustainable limits that we have imposed. In the context of fish farming, if the sea bed was badly damaged and there was evidence of nutrient enrichment in the sea loch that was causing algal blooms, we might consider revoking a fish farm licence. It is not something that we do often, if at all. We would normally seek to reduce the level of impact or to reduce the level of production on the farm to a sustainable level. Most fish farms can be operated sustainably at a certain level; it is a question of finding the right level. Normally, the computer models that we use are reasonably accurate, but the environment is a living entity and is very variable. Sometimes, the models do not fit the environment and we find ourselves needing to

reduce the biomass on a fish farm. That happens on a small number of occasions each year.

**Steve Bracken:** It is important to stress that no farmer wants to have lice on their fish and farmers will do everything that they can to control the numbers that they have because, ultimately, fish can die from lice and we do not want that. Their health can also be impaired generally, and we do not want that either. Therefore, control is paramount.

We take reductions in consents very seriously. It is a bit like a supermarket being told that it is going to lose its delicatessen, meat counter and vegetable counter and being left to get on with running its business. We do not want any reduction in consent because that would mean fewer tonnes of fish being produced by the farm. It is, therefore, critical that we manage the farm in a way that keeps its tonnage matching the consent, looking at the environment at the same time to ensure that there is no detriment.

**The Convener:** Has Alex Fergusson finished his questions?

**Alex Fergusson:** Can I make one brief observation?

**The Convener:** Yes.

**Alex Fergusson:** An analogy was made between agriculture and aquaculture, and we talked about the differences earlier. There is a big difference in that, if a diseased animal escapes from a farm, it can be rounded up with the neighbouring animals and any other animals with which it has come into contact, and appropriate action can be taken. I do not think that that is the case with escapees from fish farms. That is a significant difference when we are discussing this type of fishery.

**The Convener:** I ask Claudia Beamish to be brief.

**Claudia Beamish:** I am not sure that I have had an answer that I can understand about the confidentiality issue. I am going to press people on this as I really would like to hear from the SSPO and others who are present the reasons for the need for confidentiality, in view of the points that I made earlier.

**Professor Thomas:** I can only respond as I responded before. The suggestion is that the data is confidential, but it is not. All data on all farms is available to the fish health inspectors at all times. Indeed, it is an offence to prevent a fish health inspector in any way from getting access to the data. That is exactly the same as the position in any other industry.

On the degree of publication of information on things such as practices on fish farms, we have

published the code of good practice reports every year. The industry is in no way doing anything or indeed wishing for anything that does not apply to any other industry. It is in exactly the same situation. It is difficult to see why there should be an exception for fish farming.

In response to Alex Fergusson's point about escapes, I note that there is an assumption that fish with diseases are escaping. It is difficult to support that assumption in any sense at all. If fish at fish farms are diseased, they will be treated on those farms. The levels of escapes are not as low as we would like, but they are already incredibly low. They have come down over the years, and that pattern will continue—there will be fewer escapes. I do not see the basis for the concern about the risk posed by escaped fish. The numbers simply do not support that.

**The Convener:** I ask people to make brief remarks, as we have a lot of questions. We do not want to shorten the winter, so we would like to get through them this morning.

**Alan Wells:** The discussion and the representations that came through the consultation and have come to the committee are about the publication of data. The SSPO said that it does not want to publish farm-level data for reasons of commercial confidentiality. I do not think that that point has been answered. I believe that it is important to publish local-level information because it will allow the industry to demonstrate its management response. When there is a problem, no matter whether it has come from wild fish or from cross-infection between farms in an area, the industry will then be able to demonstrate at the local, individual level how it has responded and taken action on that basis.

If we look at the SSPO website and the data on the north mainland, which is one of the six areas, we see that across that entire area, for the whole of the month of June, sea lice levels were 458 per cent above the treatment threshold level. We could look at that in a few different ways. We could decide that all farms in the area are 458 per cent above the level, but I do not believe that that is the case. I believe that two or three farms had serious problems with sea lice. It is entirely within the public interest for people to know where those problems are and that they are being dealt with.

**The Convener:** We have already heard the arguments about having measurements in 26 areas, so we have heard that piece of evidence.

Steve Bracken and Professor Richards have comments on this point.

**Steve Bracken:** Our sea lice numbers are published on our Marine Harvest website, which we have done since 2009. The figures are not confidential.

**Randolph Richards:** There is strict veterinary control of what goes on in all farm sites. The healthier fish working group was asked to come up with a mortality level that required notification to Marine Scotland, which it did. Marine Scotland can therefore investigate independently the cause of an increase in mortality to see whether anything serious is happening—whatever the cause—or whether a new problem is developing. That is clearly set out in the workings of the group and is followed by the industry.

**The Convener:** We will move on to the overall approach to regulation in fish farms. Graeme Dey has a question on that.

**Graeme Dey (Angus South) (SNP):** Good morning. I am interested in the general picture. Is fish farming in Scotland subject to a more or less stringent regulatory regime than fish farming in other countries? What are the effects of regulation on the competitiveness of the industry?

**Professor Thomas:** First, I must explain why fish farming in Scotland is different. Scotland's ability to fish farm is disadvantaged because we have relatively small sites. For example, our sites cannot be as big as sites are allowed to be in Norway and our cost base tends to be higher because of the scale of the sites. That is offset, frankly, by the industry having done, over quite a number of years, a good job at placing Scottish farmed salmon as the premium product in the world market. In effect, we balance off higher costs against the better price that we get for salmon worldwide.

If you want to make comparisons on regulations around the world, it is probably best to look at the major competitors, which are Norway, Chile and North America, including Canada. The regulations in Norway are different, and many people would argue that they are much easier to operate. For example, Norway has a much more progressive licensing regime for new medicines. That is difficult for us because, sometimes, the Norwegian industry will get access to a new medicine a number of years before it would appear in Scotland. That is partly due to the regulatory system—the regulations are not entirely Scottish; some regulations come from the European Union—which does make it that bit more difficult.

In Chile, the regulations are—I need to be careful how I say this—much less restrictive than they are in Scotland. It will always be one of the lowest-cost producers in the world. In any market where Scotland competes with Chile, we would only ever compete for the 1 or 2 per cent in the premium part of the market because we cannot produce competitive commodity salmon.

Regulation in North America varies from region to region. Overall, on things such as medicine, we

are quite reasonably well placed. It has a shorter list of medicines to use than we have; some of its operations, such as new developments, are rather more flexible than ours; and it does rather well because there is a national plan in Canada that is focused on developing fish market farming. The Canadian Government is being very supportive in particular regions in covering the costs of new farms and providing investment grants to people coming in.

Ireland is the only other country that I should mention, and the situation there is interesting. The industry has stagnated for a number of years—Ken Whelan can probably comment on that rather better than I can. The Irish Government is investing to develop Government farms, which would free up the development of the industry.

I will make a final point, after which I will be quiet. You might ask why there is all this activity and investment in aquaculture. The reason for that is simple: if you look at food security, you will see that, by 2030, we will not balance world food supplies without further development of aquaculture because there will be a protein gap that simply cannot be filled.

11:00

**Councillor Farlow:** The Highland Council is very supportive of the Scottish Government's plan to expand fish production by 50 per cent—indeed, it is in our council programme—but we recognise that such a move will at times give rise to environmental difficulties. The council produces supplementary guidance on wind farms to encourage developers to know the framework within which we are working, and has a wish or an aspiration to produce similar supplementary guidance for the aquaculture industry to encourage—how shall I put it?—efficient and effective movement towards the granting of planning approval to the industry where appropriate to increase the speed of that expansion. If the industry came to the council for pre-application advice and responses, it would be a very useful move and the members—if not the officers—would be keen for that to happen.

**Douglas Sinclair:** I guess that, as one of the regulators, I should respond.

I do not disagree that much with Phil Thomas. When I look at what is happening in developed countries such as Canada, Norway and Scotland—I will leave Chile to one side for the moment—I think that the situation is a bit of a curate's egg. All are probably good in parts. In Scotland we do—or have to do—certain things that cause the industry problems. For example, Phil Thomas mentioned the situation with access to medicines, which is more complex in Scotland

as a member of the EU than it is in a country such as Norway that has signed up only to parts of EU treaties.

Overall, when you take into account complexity, costs and the number of regulations, not much separates the developed countries. A comparative cost study of Canada, Scotland and Norway that was carried out a few years ago put us in the middle in terms of cost per tonne production. We—and I do not just mean SEPA—do quite a good job with regulation in Scotland. It is necessarily restrictive in parts—that is the nature of regulation—but it contributes to the premium value that Phil Thomas's members enjoy. People who buy the salmon believe that they are buying something from a good, clean and well looked-after environment.

**Alex Kinninmonth:** My comments are less about regulations than about responding to Professor Thomas and Councillor Farlow's points.

On Professor Thomas's comments about premium quality, one might argue that Scotland is not the best place in the world for salmon farming, given various aspects such as costs and size that have already been mentioned. We should support the industry on the basis of the environment's carrying capacity, but the growth figures that Councillor Farlow has quoted and which, as far as I am aware, are supported by the Scottish Government do not take that into account. I really think that that needs to be taken on board. Growth can take place as long as it is not detrimental to other environment users such as shellfish cultivators or tourism operators; after all, they are all quite important.

As for the point about food security, no one should be under the illusion that Scottish salmon is going to feed 7 billion mouths. It is just not a great argument. However, we can be a world leader in sustainable production, act as a knowledge base for sustainable practices and sell Scotland's environment as a brand that stands for fantastic produce from a healthy and clean environment. Healthy seas and coasts and wild salmon in our rivers are hugely important to the people of Scotland, and we need to retain all that if we are to go forward with the industry.

**The Convener:** As you will understand, we will ask many different people the same questions in due course. We need to move on, but you may be able to come back in.

**Graeme Dey:** What proportion of the fish farming industry is signed up to the code of good practice and what do inspection regimes show about the levels of compliance?

**Professor Thomas:** The answer is that 98 per cent of producers are signed up. The reason is that 98 per cent of producers are in the SSPO and

it is not possible for a producer to be an SSPO member unless they are signed up to the code of good practice. It is almost a quasi-statutory situation.

The compliance levels are in the high 90s. As in every food industry in the United Kingdom and elsewhere, non-compliance mainly happens when there is a change in regulation, particularly if it involves a change in record keeping. It normally takes the industry about 12 months to implement such a change fully and catch up.

If there is a change in regulation that requires a different approach to record keeping, there will be an increase in non-compliance—it will still be small—in relation to that component. That disappears within 12 months as people catch up and get their records systems in place.

**Graeme Dey:** Are there any other views on that?

**Professor Richards:** The industry is severely audited by a vast number of different organisations, in particular the supermarkets, which insist on a higher standard than is required by legislation. It is probably more regulated than any other production industry.

**Professor Thomas:** Steve Bracken can probably comment on that.

**Steve Bracken:** At the end of November, we examined the number of audits that we have had in Marine Harvest this year. We have had 270 audits this year and have more to come. Those relate to 14 different schemes and organisations, and are in addition to the code of good practice, of course.

**Graeme Dey:** Would it have been possible to introduce the measures that are in the bill through a statutory code of practice or for the industry code to be amended to reflect such measures? What approach would have been best?

**Guy Linley-Adams:** If your question is partly about providing farm-specific sea lice data, that can easily be dealt with by amending the Fish Farming Businesses (Record Keeping) (Scotland) Order 2008, which was drawn up under the 2007 act. Primary legislation is not needed.

**Professor Thomas:** The difficulty with statutory codes is that they ossify. The advantage of having an industry code is that it can be revised quickly to take account of best practice and new developments.

I take exception to the point that was made earlier about Scotland seeking to have a world-class sustainable industry. It is not that Scotland is seeking to have it, because it already has one. The industry standard has been driven up over the years by the code of good practice. That is why

the code needs to be led by the industry, albeit that the Scottish Government selects from the code the elements that it needs to build into its regulatory inspection regime.

**The Convener:** We will move on to questions from Claudia Beamish on fish farm management.

**Claudia Beamish:** I have a quick supplementary question on the point that has just been made. In the context of our discussions so far, will Councillor Farlow expand on the comment in Highland Council's written submission that

"It is, however, disappointing that a number of the proposals set out in the consultation have not been carried forward into the Bill"?

**The Convener:** That is not a small point.

**Councillor Farlow:** One of the issues that we had concerns fish farm management.

**Claudia Beamish:** I will come on to that, so we will leave that point until we come to questions on it.

**Councillor Farlow:** As I mentioned before, sea loch environments are of huge concern to Highland Council residents. As Alex Kinninmonth has pointed out, there is a huge difficulty with expanding the industry in pristine lochs at the rate that the Scottish Government has suggested. We want to see how that is managed. For example, given the number of unused Crown Estate licences, the Highland Council believes that there is plenty of scope to advance the industry within any guidance that might be issued. We just wonder where we will be with that if—I am not criticising anyone in particular—companies take a dog-in-the-manger attitude to prevent expansion of the industry. In the interests of promoting jobs and economic growth in remote and rural areas, we would like to see changes in that regard.

**The Convener:** That takes us back to the discussions at the time of the 2007 act on the degree to which sites are owned but not used. I raised questions about that at the time, but it sounds like not much has changed. Perhaps we can come back to that in the wrap-up, but some of those issues might be encompassed in our next set of questions on fish farm management, which Claudia Beamish will ask.

**Claudia Beamish:** I hope that the panellists will find it helpful if I ask a whole range of questions, as my colleague Nigel Don did, so that we can open up this area of discussion.

Can anyone clarify the difference between fish farm management agreements and fish farm management statements? What proportion of fish farms are not part of such agreements, and what problems might that pose? What do the panellists think about the requirements in the code of good

practice on the preparation of agreements and statements that the bill will require all fish farms to follow? Who should be involved—from our perspective as a committee, it is very important that we try to understand this—in the production of area management agreements and statements? How are the areas covered by agreements delineated?

I hope that those questions open up the subject in a way that is useful to the panellists.

**The Convener:** Who wants to kick off? Alex Adrian's organisation has been responsible for issuing many fish farm licences.

**Alex Adrian:** Let me respond first to the question about management agreements. As I indicated, we think that such agreements are a key feature of the bill. Local management is a key element in managing the interactions both between farms and between farms and adjacent interests such as wild fisheries. In effect, the legislation is about trying to manage relationships, because good management agreements are based on good relationships. It is very hard to legislate for relationships, but what the legislation can do is advocate for the need for people to engage. That is the starting point.

Let me make two points. First, there has to be a degree of pragmatism on the part of both farms and wild fisheries as to where and how they sit in a way that correctly addresses biological connectivity. Where lines are drawn not simply for commercial or other reasons, they need to reflect proper biological connectivity and where they are discrete from other areas. That is an important point.

Secondly, as regards what should be included, the bill sets out the broad-scale framework, but I would leave it to those who constitute the members of a management agreement to decide exactly how things are managed. There is no point in prescribing nationally how to manage local circumstances. The point of local management agreements is that their application is down to the participants in those agreements.

11:15

It is fair to have some guidance on expectations around the reporting of performance in relation to how locally set treatment thresholds, following or other schemes have been addressed. How agreements manifest themselves will be particular to certain areas, of course, but, from a framework point of view, it is fair to expect those issues to be addressed.

Once the farm management agreements between different farm areas are in place and the industry can demonstrate that its component parts

can live happily side by side without one farm having an influence on another farm, we will start to be able to demonstrate the reduced potential of any effect on adjacent interests. To my mind, the farm management agreements involve farmers sitting side by side with other farmers and with wild fish interests.

There is precedent for what I am talking about. We should not lose sight of the fact that we had the tripartite working group, out of which came the area management agreements, many of which are still in place and are still working extremely effectively. We are not reinventing the wheel. We simply need to bring everyone into the fold.

**Alan Wells:** I agree with a lot of what Alex Adrian said, but there are a couple of aspects that are slightly confusing. First, a person who carries out a fish farming business at a fish farm that is located in a farm management area must do various things, but there is not actually a duty to farm within a farm management area. I believe that that would be covered by the code, but I would like there to be some thinking along those lines.

There is also some confusion around the hierarchy between a farm management agreement and a farm management statement. My understanding is that a farm management agreement functions when there is more than one operator in an area, and the operators agree how that area is to be organised, whereas a farm management statement functions when there is only one operator in an area. However, it has not necessarily been made clear that an area with more than one operator might have a farm management statement if the operators cannot agree on a farm management agreement. I would look for more clarity about that. When I came into this area, I thought that there was an agreement if there were more than one operator and a statement if there were only one. However, there seems to be a little bit of dubiety on the outskirts of the issue.

**The Convener:** Can Phil Thomas dispel the dubiety?

**Professor Thomas:** Yes. First, on Claudia Beamish's point about statistics, as far as I am aware, everyone in the SSPO—only 2 per cent of people are outside the SSPO—is working under a farm management statement or a farm management agreement. At the last count, two independent farms were not in the SSPO, both of which are on the tips of islands in distant areas of the country. They do not formally operate in a farm management statement situation because they are single farms in particular areas, but they abide by SSPO requests.

The way in which farm management areas are determined takes into account hydrographic factors such as the bay areas that the farms are in. Biosecurity requirements in relation to vessel movements are also taken into account. A number of factors come into the farm management area designation.

In essence, farm management areas that are too big simply become unmanageable. That is one of the reasons why Chile has such enormous problems. It has a formal, Government-driven farm management area system, but the areas are far too big. Norway did not have a farm management area system, but it is now basing its system on Scotland's system. However, within these four walls—this is not to be recorded, as they say—my judgment is that Norway is making exactly the same mistake as Chile did: it is making the areas so big that they are unmanageable.

The agreements are by nature more of a plan, because they say that two or more companies are going to work together. As circumstances change—as management changes—the companies might need to adjust what they do, but they would adjust it in concert, so there is an active process going on around the agreements.

To clarify, from memory, farm management statements were introduced about four years ago for a specific purpose. A number of relatively small producer companies were operating in particular areas, and we became concerned that if somebody else established themselves in such an area, they might want to manage it differently from the way in which it was being managed. Farm management statements were put in so that the companies that were already in an area could put down a marker and say, "This is the way that this area is managed." If someone wanted to come into an area and develop, they would need to fit in with the area management system that was in place or negotiate changes. That was the reason for those statements.

The section of the bill that deals with that has a number of errors—in inverted commas—in it. There are one or two factual mistakes and there are some points of detail that are simply incorrect in terms of the operation of the system. We have raised those points with the bill team and we are hopeful that the team will address them as the bill moves through to stage 2.

**The Convener:** Those points should be in the written evidence.

**Councillor Farlow:** We would like whole loch, or complex of lochs, management areas so that all the users of a loch would be able to have a public input into the planning—as the old saw goes, if you fail to plan, you plan to fail. We would also like to carry on with our input into, for instance, the

Pentland Firth and Orkney waters marine spatial plan, which Marine Scotland has commenced. Marine Scotland has found our expertise in terrestrial planning useful when it comes to engaging with all users in the Pentland Firth. Members will understand that there are some dangerous users of the Pentland Firth and Orkney waters and some relaxed people who carry on their business without incurring environmental damage—I think that the convener knows whom I am referring to.

We would like to work like that all the way round the Highland area—85 per cent of the people in the Highland Council area live within 5 kilometres of the coast, so the issue is hugely important for us. Fifty per cent of Scotland's territory is marine environment, so we are hugely aware of the significance of planning in marine waters around our coast, particularly in relation to the industries that are bound to raise hackles. If you want to fill a room in Ullapool, have a discussion on fish farming or onshore wind—you would be able to fill Hampden Park, I can tell you that. Those are huge issues for all members of Highland Council. Our aspiration is for whole loch, or complex of lochs, management areas.

Incidentally—this is a point for Phil Thomas—that would discourage scrutiny of the commercial production figures for one particular fish farm because you could take a holistic view of the area. Many other people would be using the loch and we would like to see that as the basis of the approach. Also, we have experience of discussions with Argyll and Bute Council in relation to cross-border lochs. It would be daft if we had one regime for Highland Council and did not agree it with our colleagues across the border.

**Alex Adrian:** Our interpretation is that—as Phil Thomas said—the statement describes an area that has one farming incumbent, and that if a separate company was to come in, it would agree to adhere to the terms of the statement, which at that point would stop being a statement and become an agreement.

On area management, an important point—as Councillor Farlow said—is that we want those areas to be set out. That will come down to filling knowledge gaps on hydrography and marine topography with regard to exactly where the biological connectivity is—and is not—in relation to the farms.

There is one important element that relates to regulation. Everybody recognises that a well-run management area would incorporate things such as a synchronised fallow among all the farmers in that area. I do not think that any farmer would dispute the fact that that would make a significant difference to their ability to control lice and to retain the effectiveness of treatment compounds.

However, in order to do that, those farmers will need farms elsewhere to maintain their production. That brings into play the strategic nature of area management agreements with regard to planning. A planning proposal in one area may have effects and impacts to be considered in that area, but it may also have material benefits in another area. Where a particular development may allow a synchronised fallow to be undertaken elsewhere, there is a net strategic benefit to that development. Regulators will need to bear that in mind: it is not just the farm but its wider impact on the strategic management of the operation that is important, and that will be key to making the area management principle work.

**The Convener:** There are a lot of questions still to come, but I will let Alex Kinninmonth in first, followed by Margaret McDougall and Alex Fergusson.

**Alex Kinninmonth:** I will try to be brief. It is my understanding that farm management agreements and statements should undertake to co-ordinate activities in an area. I am not sure that having a farm management statement as opposed to an agreement promotes such co-ordination, as it would seem to undermine efforts to co-ordinate within the agreement. However, those things seem to be presented on an equal footing in the bill, so perhaps that should be examined.

With regard to Councillor Farlow's points, the agreements and statements should be publicly available in the interest of openness and transparency, and they would certainly benefit from the participation of stakeholder groups that have an interest in the marine environment, the wild salmonid environment or any other activities that take place. I support that view.

**Margaret McDougall (West Scotland) (Lab):** Good morning, gentlemen. Fish farms mostly contain salmon. I will widen the issue out. Section 1(2) of the bill inserts a provision that requires marine fin-fish cultivation sites to

“be party to a farm management agreement, or ... statement.”

That may have little relevance for those businesses, but it would have an impact on, and add a burden to, the sector.

What are your views on a mechanism for mediating between parties and when it should be used? Could there be requirements for cultivation or certified organic standards that differ from those for conventional farms when contentious issues arise?

**The Convener:** Does anyone want to pick up on those points?

**Professor Thomas:** I am happy to chip in. The difficulty is that, in the industry's view—which I

support—farm management areas are necessary to allow for co-ordination between farms. There is a valid debate on whether those areas should relate to particular fish species or not.

For instance, there is a particular issue in relation to salmon and trout coming together, because of shared disease issues. We could argue that, if we were to farm cod—we do not at present—some farm management agreements might have quite different requirements, but agreements would still be needed.

11:30

I am not aware of any area at all, or any farm management agreement, where there has been a problem in relation to organic production. A number of SSPO producers produce both organic and non-organic salmon. From memory, one fairly small producer that is not an SSPO producer produces organic salmon independently, but that is in an area where there are no other farms around, so the issues never arise. However, in farm management agreements, there are no difficulties with the two types of production system.

I think that Margaret McDougall used the term “restitution”. The whole basis of a farm management agreement is to get people in an area to co-operate in a way that avoids the possibility that they will in any way interfere with or damage other businesses. To pick up on Councillor Farlow’s point, that means managing an area so that, in effect, the set of companies in the area all operate under the same regime. Therefore, as far as I am aware, that issue has never arisen.

**The Convener:** Does Alex Fergusson have any further points?

**Alex Fergusson:** Yes, I have one question on the subject. Would anyone like to comment on the possibility of the details of FMAs and FMSs being made publicly available in the interests of openness and transparency—on a register, for instance? Does anybody think that that is a good idea or, perhaps, a bad one?

**Professor Thomas:** I am sorry to hog the conversation, but the agreements are live documents. They will change regularly, depending on what the farms do to vary their production cycles and so on. I have to tell you that fish farming is not a nationalised industry, although I am beginning to doubt that, given some of the comments that have been made. We must have a system in which companies can operate closely together to manage areas. I see no benefit from companies making that information publicly available and I would envisage an additional cost to and burden on companies from doing so. It is as simple as that.

**Alex Fergusson:** I hope that I can be forgiven for asking questions on issues that we need to know about, simply to tease out the issues that other people raise with us.

**Professor Thomas:** Surely.

**Alex Fergusson:** That is what we are here for.

**The Convener:** Indeed.

Mr Bracken, when we visited Loch Linnhe, we talked about the fact that there are something like 17 fish farms between the head of the loch and the sea. Can you remind us of the details? That might help with Alex Fergusson’s point.

**Steve Bracken:** There are not as many as 17.

**The Convener:** It must have been the wind—I could not hear you properly at that point.

**Steve Bracken:** It probably was.

We have four farms in Loch Linnhe and, further south, Scottish Sea Farms has a presence. Therefore, it is important that we work together and exchange information about, for example, when we are going to treat for sea lice. That is key to both of us producing top-quality fish. There is no question but that that is the way that the industry has to operate. We need area management agreements between companies. Basically, such agreements involve companies sharing information on what they are doing and when they are doing it.

**Guy Linley-Adams:** Whether the agreements should be on a public register depends on what they are about. If they are about on-farm activities within the black box, if you like, of the farm—activities that are contained in the farm and stay within it—there is no need for anything to be on a register. However, the moment those agreements relate to something that goes out into the wider environment, where other interest groups, including wild fish interest groups, have a legitimate public interest, of course there is a need for the agreements to be in the public domain.

**Margaret McDougall:** I feel that I did not get an answer to my question on mediation and the requirement for a mediation mechanism. I seek clarity on that. Does the panel feel that there is no need for a mediation mechanism, because everyone will sign up to the agreements and everything will be hunky-dory?

**Professor Thomas:** I apologise if I was not clear earlier. The position is that there is often mediation or facilitation for farm management agreements, which is provided by the SSPO. Having a statutory producers organisation allows companies to get together and share information in a way that allows matters to be facilitated. The situation that historically has been tricky—this partly explains what I said earlier about farm

management statements—is when a company, often a new producer, comes in and buys existing fish farms. That can mean that, in an area where, for example, two companies operate, when the ownership of one company changes, the new company might want to do something slightly different. When that happens, there is a need for facilitation, but I would debate whether one would call it mediation. Again, that would be provided through the SSPO.

We would not necessarily do that directly—we might bring in people. For example, we had a big area in Shetland around St Magnus Bay, for which our perception was that we needed to expand the farm management area and get an agreement for a bigger area. Three companies were involved, and because they all had slightly different systems, our approach was to get them to agree to operate through a single independent veterinary adviser who would, in effect, advise all three companies. That allowed the companies, over about 18 months, to bring their systems into line so that there was a single area for management.

Therefore, that facilitation process takes place already. I apologise if I was not clear on that earlier.

**The Convener:** Thank you for that point. I see that Claudia Beamish wants to come in. We are short of time on this issue, but there will be a chance for other members to come in later.

**Claudia Beamish:** It is a quick question this time.

**The Convener:** Is it?

**Claudia Beamish:** Yes.

Should there be a fallback position that would allow ministers to intervene if an area management statement was regarded as inappropriate?

**The Convener:** Let us ask the minister that.

**Claudia Beamish:** Okay.

**Professor Thomas:** Again, I can give a direct response. Such a mechanism already exists, in the sense that, if the fish health inspectorate puts a risk rating on an area that it inspects, and if it thinks that any element of a farm management agreement would increase the risk in the area, it would increase the intensity of inspection. There is therefore pressure on companies in that, if they do not want a fish farm inspector with them every day of the week, they try to ensure quickly that anything that the fish farm inspectors object to is addressed. That is the fallback position, if you like.

The 2007 act has provisions that allow the direct intervention of the inspectorate in running a farm, but I do not think that anybody would particularly want to go down that route; it would be much

better for the farmers to respond to issues and run their own farms.

**The Convener:** We have about five subjects to deal with, so I would like shorter questions and answers. Jim Hume will lead on the issues of escapes, equipment and taking samples.

**Jim Hume:** I will divide my questions into two and address the issue of escapes in the second part. The bill will allow the Scottish ministers to make subordinate legislation for technical requirements for equipment, which will have to be deemed fit for purpose. The improved containment working group will work on updating that. The bill also provides for a technical standard for Scottish fish-farm equipment. What do the panellists think about the approach that the bill has taken on that? Perhaps you could also give information on how technical standards in Scotland compare with those in other areas.

**The Convener:** That is a start.

**Alan Wells:** The technical standard will inevitably be delivered in secondary legislation, because it is still being developed. Steve Bracken chairs the group that is developing the standard, which provides a welcome way forward. Through that group, information was collected on the reasons for escapes. In 2010, about a third of escapes were due to human error and had nothing to do with technical standards. It is important to put that point on the record.

It is also worth making it clear that, although reports of escapes are by definition limited to reported escapes, we are aware of quite a number of unreported escapes. I will give one example from the freshwater side. Loch Shin in Sutherland is impacted by a hydroelectricity scheme, and smolts there were having difficulty in getting past the dam.

The local fishery board and the local trust set up smolt traps on a number of the tributaries into the loch to intercept smolts, which could be transferred to the other side of the dam. The area has two freshwater farms and, in one of the tributaries—which was near one farm—more than half the fish were of farmed rather than wild origin. However, the tributary that was nearest to the other farm had no fish that were of farmed origin. In 2011, 288 non-native salmon were caught in the trap in one tributary into Loch Shin. Last year, 540 fish were caught in that trap. However, no escapes were reported at that loch. There is a problem above and beyond what is reported.

**The Convener:** You have put that on the record.

**Alex Adrian:** The standard will be incorporated into secondary legislation, but a process that incorporates equipment development must be

addressed, too. That is because the industry moves ahead quickly with technological developments and because of things such as proposals for offshore farming.

In many cases, no one may be very confident about how what has been proven to work in one environment will behave in another environment. There must be scope to allow producers of equipment to deploy and test it, and they must know that they can undertake a process to have their equipment certified as or tested for being fit for purpose in particular environments. That is about process as well as specification.

**Steve Bracken:** When the improved containment working group was set up, the universal belief was that we needed a technical standard for the salmon and trout industries. We looked at Norway, because it leads on such legislation. When we looked in detail at the standard there, which is called NYTEK, we realised that it was very complicated. More than 90 people were involved over 10 years in developing that standard, which was a huge piece of work. The standard does the job, but it did not fit our bill for being understood day to day on a fish farm.

We have gone for something that will be understandable by farm managers, their staff and managing directors. The document must be not quite unputdownable but readily accessible and understandable by most people who are involved in the industry.

Alan Wells is right about the human error aspect of escapes, which is the second part of what our group is doing. The equipment is being looked at and we are ensuring that it is fit for purpose on all sites but, when sites are given good equipment, it is key that people are well trained in its use. Some companies in the salmon industry have developed in-house containment training schemes, and we want to spread that throughout the industry. We look at containment in the same way as we look at sea lice: it is an industry issue, and if we have good ideas we want to be able to share them.

11:45

**Angus MacDonald (Falkirk East) (SNP):** With regard to escapes, I am curious to know whether any thought has been given to using fish that are sterile. Has there been any discussion of that within the industry?

**Steve Bracken:** Yes, there is discussion and on-going work on that. However, we see our job as ensuring that we keep our fish where they should be, which is in the nets and tanks. Therefore, our key priority is ensuring that we have safe containment facilities for our fish.

**Ken Whelan:** I will make two quick points. There are two ways in which fish can escape. First, there is the classic escape when a cage goes down. Secondly, given the numbers that Guy Linley-Adams mentioned—we are dealing with hundreds, thousands and millions of fish—there is always leakage of some small fish over time, particularly from freshwater containment. Funnily enough, it is the small fish that may pose the greatest biological threat, because they can adapt to the environment better.

For decades, we have discussed how to quantify escapes in the debate about fish farming. There are two new approaches that we might look at. First, in the context of a very large programme that I was involved in that looked at salmon at sea, we have developed new genetic techniques that can quickly tell us whether a fish is of fish-farm or wild origin. We need to monitor the wild spawning stock—particularly the juveniles—to quantify whether escapes are a problem, and some of that work is already on-going.

Secondly, I encourage the industry to consider hard tagging. Systems are now available whereby nose tags can be put into baby salmon. If even a proportion of salmon at the sites where there are concerns were tagged with those hard tags, at least we would know where the fish were ending up and exactly which farm they came from. That could be useful in the context of individual farms about which there are concerns.

**The Convener:** The point that Alan Wells made raises a question about the fact that, on the same inland loch, fish are being bred both for the wild salmon stock and to feed into fish farming. He mentioned Loch Shin, which is in my constituency, and I know the circumstances there. We will try to tease out the concerns. For example, I would not like it to be said—because we do not know—that the hatchery that is breeding smolts for the river is any better than the hatchery that is breeding smolts for fish farming. That fish farming company is working in five other lochs. We must be careful about getting balanced information, which we will try to get in written form later. In some lochs, fish are being grown for both wild and farmed circumstances within the same farming structure. That is where the technical standards are important. We must know the issues and we will explore them a bit further with other witnesses.

**Jim Hume:** We have heard that human error is part of the problem. Do the witnesses think that we should have mandatory training in the use of fish-farm equipment? Should there be regular sampling of fish that are being farmed? Would it be practical to tag fish? It would be useful to know.

**Professor Thomas:** I will address all those points, but I will begin with your previous point. The industry's main concern about secondary

legislation relates to what was referred to in the original consultation as charging for progress, or words to that effect. There is great concern that the bill puts the introduction of charging in secondary legislation. We think that that should be dealt with on a service-by-service basis. The industry has no difficulty with the notion that it would pay for services; it has difficulty with the notion that it would simply pick up co-costs of the Government. That is part of the consultation.

The industry would have no problem with the notion that Ken Whelan has raised of wild fish being sampled and their genetics tested. However, there is a technical problem with the way in which the bill is written, as the text suggests that an escape at one farm could trigger sampling at every farm in Scotland. We think that that is unreasonable, although we have no difficulty with the notion that, if there is an escape in an area, farms in that location should be sampled.

The important issue is that wild fish, not farmed fish, should be monitored. If we are going to look for escapes, the wild fish population is the key.

**The Convener:** We have several more questions to ask. People will be wondering when I am going to suspend the meeting for human purposes, so I ask members and witnesses to keep their remarks short.

**Alan Wells:** I will quickly respond to the points that Phil Thomas made. First, I will give an example of why it is important to be able to sample widely. With regard to Loch Shin, the first time that those smolts were found in the wild, the fish had already been moved from the freshwater site into seawater. If we want to find out where the escapes come from, we have to be able to trace them to the seawater cage, wherever that might be, and sample from there. That is why we need a wide system.

I agree with Phil Thomas that we need to be able to sample the wild fish but, equally, we need to have the baseline data for farmed fish. The Rivers and Fisheries Trusts of Scotland is operating a project to consider that issue, but the aquaculture industry appears to be unwilling to provide the baseline samples, which makes determining the level of the problem, if there is one, almost impossible.

**Alex Kinninmonth:** We have perhaps moved on from this point but, going back to the causes of escapes, 30 per cent of escapes in 2011 were caused by predators. In the development of a technical standard, we need to prioritise gaps in knowledge about how predators attack the net so that we can find the most effective and benign way in which to deal with the problem. Last year, 242 seals were killed at fish farms in Scotland. That is no good for wildlife and, frankly, it does the

industry no favours. The development of that standard really needs to be prioritised.

**The Convener:** Graeme Dey wants to come in on that point.

**Graeme Dey:** When trawling through the written submissions, I noted an assertion that only 20 per cent of fish farms possess anti-predator nets, and that only 13 per cent of them are actively being used. If that is correct, does that mean that seals are not a major problem for the industry, or is it that there is an overreliance on obtaining shooting licences or using acoustic deterrents to deal with the issue?

**Steve Bracken:** We used anti-predator nets back in the 1970s and 1980s. The nets hang just outside the main net that contains the fish. Their mesh tends to be between 4 inches and 6 inches. I have seen for myself that, when those nets are deployed, all sorts of wildlife gets trapped in them, and it is extremely unpleasant.

We, like many others in the industry, have gone down the route of tensioning nets. That is a function of the size of the pens that we are dealing with today. We have a bigger volume of net, with some of the bigger nets having the volume of five Olympic-size swimming pools. Those bigger nets have to be really well tensioned, which makes it hard for the seals to attack the pen.

In addition, we have put seal blinds into the base. Those are nets of finer mesh that make it hard for seals to come up from underneath and see fish. We also use acoustic deterrents, which are an important part of our equipment, although I am aware of the issues with cetaceans. The design of the equipment is being considered so that it does not affect cetaceans, but there is a lot of work to be done on that.

We would much prefer to find ways of keeping seals away from our fish. At the beginning of next year, we will trial the use of a copper-based mesh in the base of one of our nets to see what happens. We are considering new materials and, in particular, sapphire netting, which is high-density polyethylene. Stainless steel can be run through that netting. All netting developments are being looked at seriously.

**Graeme Dey:** In practical terms, what prompts you to switch on the acoustic deterrent, or do you leave it running?

**Steve Bracken:** That is a good question. That depends on the farm manager and what he believes works best on his farm, based on his experience. Some farm managers will switch it on from the beginning, as they do not want seals coming near the farm at all; other farm managers will wait until there is a problem before putting on the device. Seals can get accustomed to the

noise, so it is down to the farm manager to use his judgment on how best to deploy the device on his farm.

**The Convener:** You will understand that we are concerned with noise in the sea in a wider sense and the impact on wild animals and cetaceans, because it is a potential hazard for them. Have dolphins or whales caused you any difficulties in sea lochs?

**Steve Bracken:** Anecdotally, farm managers will say that they have on occasion seen porpoises and dolphins in the loch when the seal scarer has not been on. When it is switched on, they stay around before moving out. That is not based on a scientific trial, so I cannot say whether it reflects the situation accurately.

New developments are coming along all the time. One new device that is on the horizon and that we are interested in does not emit a loud noise—seal scarers are about 180 or 190 decibels—but it sounds like fingers scratching a blackboard. The seal does not like the noise, and it reacts accordingly.

**Claudia Beamish:** As an ex-teacher, I fully understand that the noise of fingers scratching a blackboard is no good for the kids, or for anyone.

I had questions about seals, but they have been covered. I am glad about that because, in view of the evidence that we have received, it was important to get answers. I have no further questions.

**The Convener:** We will move on to wellboats.

**Angus MacDonald:** At previous evidence sessions, we have heard that, to avoid the spread of parasites and disease, wellboats need to be modified. A Government official estimated the cost of retrofitting each boat to be about £500,000. What would be the cost to the industry of complying with retrofitting?

Given the time constraints, I will raise another point, which is about the SEPA proposal to simplify the consenting regime, under which it—not Marine Scotland—would be responsible for consenting discharges from wellboats. I am curious to hear panel members' views on SEPA's proposal.

**Professor Thomas:** The industry would be fully supportive of changes to the consenting regime. A problem area that the industry has identified is the need for two separate licences for discharging the same material into the same place, but from different sources. That does not make sense.

Everybody in the industry would be supportive of retrofitting wellboats, but the cost would be massive. That would need to be phased in because, in truth, it is much easier to put the right

installation in when a new boat is being brought in, rather than to retrofit. There would be commercial cost considerations. As the bill is written, the definition of a wellboat would cover pretty well every boat that goes anywhere near a fish farm. That is obviously not the intention, and nor is it practical. I hope that the definition of wellboats will be adjusted in the final version of the bill.

12:00

**The Convener:** Okay. Do people have any other points?

**Councillor Farlow:** Most people in the tourist industry in the Highlands would prefer it if wellboats looked like boats. That would be useful.

**The Convener:** Thank you. It would be even nicer to know whether they could be built in Scotland at some point.

**Professor Thomas:** I think that there is some confusion here. George Farlow is probably referring to feed barges. From that standpoint, the industry, too, prefers feed barges to look like boats. A particular issue is that we have problems throughout the country as a result of the requirement, under the planning system, for boats to be painted different colours in different places. That is a separate issue.

**Angus MacDonald:** I have noted in my travels that all the wellboats that I have seen seem to be registered in Ålesund in Norway. I am curious as to whether the panel members think that there is a monopoly, because there do not seem to be any Scottish-registered boats in that respect at all. For a start, how many wellboats are operating in Scotland and are they all registered in Norway?

**Steve Bracken:** I do not know the number of Norwegian boats operating in Scotland, but you are right that the Norwegians have a monopoly in Scotland and, indeed, probably the world when it comes to salmon farming. I think that the reason for that is that wellboats developed, as the industry has, out of Norway. The Norwegians' methods of farming have demanded that they have hatcheries close to the shore, and wellboats are ideal for taking the smolts straight from the hatchery. The Norwegians developed the technology and have embraced it, whereas in Scotland that has unfortunately not been the case.

**The Convener:** We will move on to the issue of commercially damaging species.

**Margaret McDougall:** Because of the time pressure that we have, I will not go into a preamble about the commercially damaging species proposals and I will take it that all the panellists are familiar with that aspect of the bill. What are the panellists' views on those proposals?

What do you think about how the bill defines commercially damaging species?

**The Convener:** Does SEPA have a view on that?

**Douglas Sinclair:** I have no particular comment to make on the issue.

**Alex Adrian:** I think that the bill documents refer to the example of the *Mytilus trossulus* occurrence—I would not call it an outbreak—in Loch Etive.

**The Convener:** What is that?

**Alex Adrian:** *Mytilus trossulus* is a species of mussel. I will give the committee a bit of background on the issue. It is chiefly the blue mussel—*Mytilus edulis*—that is farmed in Scotland. *Mytilus trossulus* is a species with a soft shell and low meat yield. It is generally picked off in the wild by predators, but in a farming environment it is protected. It consequently flourishes and it displaces the blue mussel, which has a commercial impact on mussel farms in Loch Etive.

The problem is that *Mytilus trossulus* is not an invasive, non-native species as such. I therefore think that the bill has to be quite broad in picking up something that is commercially damaging. The species is not necessarily environmentally damaging or damaging in the wild, but it has an impact in a commercial context. It is quite hard to be prescriptive about such species. I think that the bill says that those things will arise when they arise and that we want to be prepared for them when they arise.

On the example of the trossulus event, Loch Etive has quite low salinity. It has a high freshwater input and the surface layers are of a salinity below 30 parts per 1,000, which suits *Mytilus trossulus*. As I have said, the mussel is protected by the farming environment. Over time, it displaced the commercial blue mussel to the detriment of mussel production in the loch, such that all production has now been cleared out of it and an attempt is being made to fallow all farms in order to get rid of the background trossulus population and restock with blue mussel.

Any definition has to be broad enough to catch such things when they arise, because no one can really pick them out. Such species are not invasive non-natives and are not necessarily damaging in their own right; the effects become clear only when the commercial context applies.

**Alex Kinninmonth:** I have no detailed comments to make on the issue, but I note that the bill defines a commercially damaging species as something that is without “commercial value”. The danger with that definition is that, although something might be without commercial value, that

does not mean that it has no environmental or ecological value.

Alex Adrian is right to point out that the provision has been brought in to deal with specific circumstances, but it has been presented as something that is quite wide ranging, which is a bit dangerous. At the very least, Scottish Natural Heritage should be consulted before something is defined as a commercially damaging species. After all, there is the potential for something quite damaging to happen.

**Professor Thomas:** The main problem is that, although the provision was triggered by the *Mytilus trossulus* issue that Alex Adrian referred to, it has been cast in broad terms in relation to fish farms. However, fish farms are not the issue; instead, the issue is movement of the species and, within that, the movement of boats, particularly inshore boats.

The provision does not pick up plant species, and there is a long-term concern about invasive plant species clogging nets on fish farms. Any attempt to do something about that should focus not on the fish farm but on how the species got there, which is almost universally down to boats. As a result, the provision is too limited and we would have preferred the Government to have included the opportunity to introduce secondary legislation to get a more comprehensive approach.

**The Convener:** You have made your point.

Margaret, do you want to follow that up or move on to another issue?

**Margaret McDougall:** I simply point out that ministers already have the right to enter into control agreements and enforce measures if the farmer does not agree. I take it that everyone agrees with that approach.

**Professor Thomas:** There is an inconsistency. If there were a plant species infestation—if I can call it that—on a fish farm, the bill would allow something to be done about the fish farm but nothing at all to be done about, say, the local pier where the same species might also be established. In other words, one aspect might be dealt with, but that would not solve the more general issue. Our concern is that the provision is limited.

**The Convener:** Current legislation on invasive species might well overlap in that respect. I do not want to prolong the discussion, but I simply note that Margaret McDougall has made a fair point.

Shall we move on to charging, Margaret?

**Margaret McDougall:** What are the panel's views on the proposed new powers for the Scottish ministers to set charges in relation to aquaculture? Is it right that the Government should

be able to charge the industry for the cost of regulating it?

The SSPO seems to suggest that it would prefer some of the work that is or could be done by the Government to be done by the private sector. Is that what its submission means?

**Professor Thomas:** We made two specific points. We believe that any charges that are introduced should be dealt with by Parliament via the affirmative procedure. It is crucial that Parliament scrutinises any specific charge.

As for the provision of services by the private sector, we already have established commercial services for diagnostics. It is fair to say that every company in Scotland uses the commercial service in preference to the service that is available through Marine Scotland. For us, the issue is why a charge should be introduced for a Marine Scotland service or why the Marine Scotland service should be required to be used when commercial services are available that do exactly the same thing and, when judged on a commercial basis, do it rather better. It is an issue not of charging but of structure.

If charging procedures are to be introduced on any basis, for anything, the operation of Marine Scotland needs to be reviewed. It has to be recognised that Marine Scotland was established in rather unusual circumstances, in that it was clubbed together from existing organisations and parts of Government, rather than by starting with a remit and working back from there. If the intention is to start charging for anything, the starting point is to have a proper assessment of what exists and what Marine Scotland does. Any individual charges for anything would need to be considered by Parliament under the affirmative procedure.

**Steve Bracken:** When it comes to audits and technical inspections, we have provided Marine Scotland with a range of schemes that the industry is involved with. Rather than reinvent the wheel and come up with a new audit scheme, it would be helpful if those schemes were studied and perhaps used in any future audits and inspections.

**The Convener:** We will ask Marine Scotland about that.

**Councillor Farlow:** As we look forward to 2020, if fish farming expands, there will be a consequential expansion in smolt production. A few years ago, one of Highland Council's area planning committees gave permission for expansion to a smolt company in Highland. The consent is to last only 10 years and, when that period ends, the company will have to reapply. I wonder what facilities there are for such a set-up with marine fish farming. That would be one way of controlling companies that had issues during the 10-year period.

**The Convener:** Would anyone like to respond to that or shall we just leave it on the table?

**Professor Thomas:** The whole basis of the transfer of planning responsibility to local authorities for fish farm approval was that it would give fish farms a permanency that would allow companies to build the capital investment of the fish farm into the capital investment of the company. I was not involved at the time, but that was one of the main arguments for the transfer to local authorities.

The difficulty with short-term licences is that, if we want somebody to invest a lot of money in building a fish farm, they have to expect to have a long enough period to get a rate of return on their investment and maintain their capital. I understand George Farlow's point, but we have chosen to go down one route and, if we were to go down a different route, we would have to look at the whole regime again.

**The Convener:** We will take forward that point. In the meantime, Richard Lyle has a question on fixed-penalty notices.

**Richard Lyle (Central Scotland) (SNP):** Good afternoon, gentlemen. There are fixed-penalty notices in most areas of life. What does the panel feel about them? Do you agree that they will reduce court costs for you and the Government and that cases will be dealt with more quickly?

12:15

**Douglas Sinclair:** We do not regulate under the regime that is being discussed as part of the bill, but there is parallel consultation on new legislation that is being developed that will include provisions for fixed-penalty notices with respect to environmental crime.

As I came from the hard end of SEPA's business, I strongly support fixed-penalty notices, because the disposal of cases in court is incredibly costly and bureaucratic for the regulator and the regulated. I am aware that, in many cases, people whom we regulate and who may have faced a case in court would have preferred to take a fixed-penalty notice as a lesser option for crimes of lesser seriousness because of the cheapness, the immediacy and the fact that they can get the offence out of the way.

We support the use of fixed-penalty notices as part of a regulatory and enforcement regime.

**Professor Thomas:** The industry has been uneasy about fixed-penalty notices. It has no history of major criminal transgressions of any sort, and there was concern that fixed-penalty notices would be trivialised. There was also concern that we would suddenly find that large numbers of fixed-penalty notices were being

handed out and having an impact on a company's reputational position in the market.

We have accepted that fixed-penalty notices will be introduced, but we would be keen for the Scottish Government to be required to publish statistics on them, so that we can have a clear view of what happens over time. We require information.

**Richard Lyle:** Would that not breach data protection legislation? If your company or another company was continually in the paper for getting fined, would you not feel that you were being picked on?

**Professor Thomas:** The reality is that, as we know, anything that happens in the aquaculture industry is on the pages of the newspapers the next day. In fact, it is usually there the day before, if I can put it that way. There is no lack of public awareness about the aquaculture industry.

**Richard Lyle:** There is no secrecy in your business.

**Professor Thomas:** That is right. However, we feel that there is an issue. We have received reassurances from the Scottish Government and the bill team about how fixed-penalty notices will be used and we have said that we are content with that. Very clear guidance has now been provided about what fixed-penalty notices will apply to, and we would like to understand the impact.

The industry has no record of offences. The number of cases against aquaculture companies that have ended up in court is infinitesimally small. Therefore, if large rafts of fixed-penalty notices started to appear, we would have concerns.

**Steve Bracken:** When the idea of fixed-penalty notices appeared, there was definitely a knee-jerk reaction in the industry, because we did not see that coming and did not understand what it was about. There was a lot of disquiet on the farms—not just in Marine Harvest but in the industry overall.

Since then, the bill team has put out good information that further explains what fixed-penalty notices are about. The original thought was that they would be applied immediately on farms, but the process has now been explained, which has helped. I am not saying that the industry endorses fixed-penalty notices, but it understands them better.

**The Convener:** We have had a wide range of remarks and evidence. We have a couple of questions with which to finish. If Claudia Beamish wished to make a small point, that would be helpful.

**Claudia Beamish:** My question might be answered quickly, but it is certainly not a small

point, convener. The witnesses may wish to submit further written evidence if they feel that there is no opportunity to highlight points.

**The Convener:** You took the words out of my mouth.

**Claudia Beamish:** I am sorry, convener.

I have a broad question. Particularly in view of the delay to the national marine plan, does any of the witnesses have concerns about the cumulative effect of fish farms on the broader marine environment?

**Ken Whelan:** I have a comment on the broader marine environment that relates to another part of the committee's work, as it concerns climate change. There is clear evidence from the work that I have been involved in—we are just about to publish a major publication that looks at 50 years of data—that our bays are changing quite quickly. That poses a challenge to the committee in relation to the legal basis of various acts. Whereas it might have been sufficient in the past to put in place something that was expected to last for perhaps 10 or 20 years, the dynamic of what is happening in the bays is such that it is essential that the bill takes account of the environment in which the industry functions and that there is a clear overview of that.

That relates directly to two things. The first is the capacity issue that we have talked about. The future capacity of the bays, particularly inshore, to take large amounts of fish might well be compromised. The second thing is the number of cycles of sea lice. We have some good published evidence that, as a result of increasing temperatures in the bays, sea lice are naturally producing more cycles per year.

Another important factor that has been mentioned is how space can be fully used and allocated even to the existing industry. All that relates directly to the bays' ability to handle the particular impacts in the future in a quickly changing environment.

**The Convener:** That is an important point.

I ask Alex Adrian to be brief.

**Alex Adrian:** I would just like to make the point that the fish farming and aquaculture industry needs the pristine environment. It is not divorced from that environment; the industry relies on it.

Many years ago, at the outset of aquaculture, it was considered a good thing that people who went into the marine environment had a commercial interest that relied on the good status of that environment. In some respects—the point might seem odd in this context—we have guardians of the environment out there, whereas before we did not. Sitting on the shore and proselytising about

the marine environment are one thing, but being out there and taking commercial risks in relation to the pristineness or otherwise of the environment are a different matter. We should bear it in mind that aquaculture relies on the good quality of the environment.

**The Convener:** I call Douglas Sinclair to finish on this point.

**Douglas Sinclair:** We are confident that the cumulative impact of the components that we manage—the nutrient and pollutant impacts—is well managed in Scottish coastal waters.

**The Convener:** There are people who need to be informed of what has been said today so that they can provide their points of view. To reiterate what Claudia Beamish said, we will look at any follow-up evidence that witnesses provide. We intend to try to build a confident view in the committee of the issues related to the bill, because it is of vast importance to many parts of our natural environment, as well as our industries.

With that in mind, I finish with a general question. What are the economic benefits of salmon farming and the wild salmonid fisheries respectively?

**Alex Adrian:** There are figures to indicate the benefits. I echo the comment that the North Atlantic Salmon Conservation Organization made a number of years ago by saying that both industries are parts of Scotland's salmon sector. We should not try to separate them out too much.

There are benefits to be derived on both sides. If we look at some of the issues that are raised in papers on wild fisheries, we see people asking why they should not take advantage of work that is happening in salmon farming. Each sector has value. On the farmed side, there is a lot of interest in retaining the Scottish identity of some stocks or retaining the ability to assist with the retention of their integrity. We should not lose sight of the fact that there are other benefits and value to be accrued, in addition to simply the economic value.

**The Convener:** That was a balanced set of comments.

**Alex Kinninmonth:** It is a good question to end on. We often discuss fish farming and salmon fishing as two elements that operate in isolation from other things, but we need to go beyond that and go down a strategic route for managing our marine environment that takes a holistic approach, rather than look at fish farming separately from salmon fishing.

We need to look at not only the economic but the social impact or benefits that we can derive from our coastal habitats and marine waters. Wildlife tourism is a major factor in a lot of the areas that we are discussing. As Claudia Beamish

said, marine planning needs to take a strategic view and balance multiple activities so that we get gains from everything.

**Steve Bracken:** The Scottish salmon farming industry produces in the region of £400 million-worth of products, and wild fisheries produce in the region of £113 million-worth of products—I believe that I have got that right.

**The Convener:** As you know, in this Parliament we have to have our figures absolutely correct.

**Steve Bracken:** Just to be clear, I am talking about millions.

I agree with Alex Adrian that salmon farming and wild fisheries are both vital industries for the coast and inland parts of Scotland. I am absolutely sure that we can go on and become bigger and better in both areas. However, that will not happen overnight. We need to look at the economic value of those industries and the spin-offs. We contribute a lot to the vitality of the economies of cities and towns on the west coast and in the Highland region.

**The Convener:** That is an interesting point on which to finish. We could perhaps go on all day, but some people near me have suggested that they are losing the will to live. The session has been fascinating. It is excellent that we have had such a wide range of views in the time that we have had. I thank all of you for giving us your time and views.

I will allow time for the public gallery to clear and the witnesses to leave before we move into private session.

12:27

*Meeting continued in private until 12:45.*



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