



OFFICIAL REPORT
AITHISG OIFIGEIL

Rural Affairs, Islands and Natural Environment Committee

Wednesday 2 March 2022

Session 6



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Wednesday 2 March 2022

CONTENTS

	Col.
SUBORDINATE LEGISLATION	1
Sea Fish (Prohibition on Fishing) (Firth of Clyde) (No 2) Order 2022 (SSI 2022/35).....	1

RURAL AFFAIRS, ISLANDS AND NATURAL ENVIRONMENT COMMITTEE
7th Meeting 2022, Session 6

CONVENER

*Finlay Carson (Galloway and West Dumfries) (Con)

DEPUTY CONVENER

*Beatrice Wishart (Shetland Islands) (LD)

COMMITTEE MEMBERS

*Karen Adam (Banffshire and Buchan Coast) (SNP)

*Dr Alasdair Allan (Na h-Eileanan an Iar) (SNP)

*Ariane Burgess (Highlands and Islands) (Green)

*Jim Fairlie (Perthshire South and Kinross-shire) (SNP)

*Rachael Hamilton (Etrick, Roxburgh and Berwickshire) (Con)

*Jenni Minto (Argyll and Bute) (SNP)

*Mercedes Villalba (North East Scotland) (Lab)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Russell Cheshire (Community of Arran Seabed Trust)

Alex Watson Crook (Sustainable Inshore Fisheries Trust)

Calum Duncan (Scottish Environment LINK)

Professor Michael Heath (University of Strathclyde)

Simon Macdonald (West Coast Regional Inshore Fisheries Group)

Sean McIlwraith (Galloway Static Gear Fishermen's Association)

David Nairn (Our Seas Coalition)

Bally Philp (Scottish Creel Fishermen's Federation)

Phil Taylor (Open Seas Trust)

Elaine Whyte (Clyde Fishermen's Association)

CLERK TO THE COMMITTEE

Emma Johnston

LOCATION

The Sir Alexander Fleming Room (CR3)

Scottish Parliament

Rural Affairs, Islands and Natural Environment Committee

Wednesday 2 March 2022

[The Convener opened the meeting at 09:30]

Subordinate Legislation

Sea Fish (Prohibition on Fishing) (Firth of Clyde) (No 2) Order 2022 (SSI 2022/35)

The Convener (Finlay Carson): Good morning, and welcome to the seventh meeting in 2022 of the Rural Affairs, Islands and Natural Environment Committee. I remind everyone who is using electronic devices to switch them to silent.

Our first and only item of business is an evidence session with stakeholders on the Sea Fish (Prohibition on Fishing) (Firth of Clyde) (No 2) Order 2022. I welcome our first panel, which consists of representatives from fishing organisations: Simon Macdonald, chair of the West Coast Regional Inshore Fisheries Group; Sean McIlwraith from the Galloway Static Gear Fishermen's Association; Bally Philp, national co-ordinator for the Scottish Creel Fishermen's Federation; and Elaine Whyte, executive secretary of the Clyde Fishermen's Association.

We have about 45 minutes for questions. I will kick off with a question for all the panel members. What impacts will the closure have on fishers in the Clyde? Specifically, to what extent do the changes made in the revised order mitigate those impacts?

Simon Macdonald (West Coast Regional Inshore Fisheries Group): Good morning. The whole thing will have an effect to a degree on the fishers, but it will not be as great as it was originally forecast to be. The evening before the announcement was made, I got a call to say that there would be the corresponding closure but that all the exceptions were being removed. Needless to say, there were a lot of hurried calls back and forward. A few days later, we had a meeting with Marine Scotland and other stakeholders to discuss the matter further, and it was decided that an area could still be open for fishing.

Generally, cod do not spawn on mud; they spawn on rocky, shingly and gravel areas instead. The langoustine or nephrop fishery in the Clyde is a very important sector of our fisheries, so it is vital that it should continue. Drawings and plans were brought to the meeting to show clearly the areas that would have to be closed off, because they

were where the cod were reckoned to be spawning, but a good corridor was left open covering all the muddy area. Since then, the decision has been made to cut off some of the muddy area so that fishing does not encroach on the cod. Cod are very sensitive to sound, so that was done to prevent the cod from being spooked and not spawning.

There is, therefore, still an area in which fishing can continue, and that applies to both mobile and static gear. I know that there are concerns about the area being reduced. That means that there are possibly issues pertaining to conflict with trawlers and creel boats.

Sean McIlwraith (Galloway Static Gear Fishermen's Association): Hi there. I fish for lobster and crab coming out from Loch Ryan and up to the Bennane Head just north of Ballantrae. All of our gear has been in the area of the closed box, and we feel that it has been like a sneak attack, because we didnae know anything about it. I first heard about it online through Facebook, believe it or not, and I had one month tae shift ma gear. The weather has been really bad, which made it a struggle to get over the line to comply. We got some gear over the line by the closing date, but the weather kind of hurt—yon last big storm—and we have lost some creels out of that.

We have been impacted already. We have no really had much fishing done since then. It will certainly be a struggle until we work out the new ground and stuff like that. By the time we have worked that out, I hope that the closed area will be open again and we will have time to move.

Obviously, we have bigger expenses for diesel and stuff like that, for steaming about. We have the option of working out of Girvan, but that is tidal, and we cannae leave our catch there safely. It would have to be left at sea and stored, where it would be at risk of the weather. We have the added pressure of harbour dues for Girvan. All in all, it has no been a very good start for us.

Bally Philp (Scottish Creel Fishermen's Federation): The impacts of the original proposal were devastating across all the sectors. It looked as though the whole southern part of the Clyde was going to be closed.

With regard to the mitigations as a result of the proposed changes, the revised order will alleviate the impact for some of the Clyde vessels, but I do not think that it provides any mitigation for the static gear boats that work the prawn fishery, which is carried out on soft mud. I appreciate that the amended proposal offers about 30 per cent of the area that it was previously proposed would be closed, and that that area is mostly nephrops ground—soft mud. However, it is worth noting that

it is not possible to fish prawn creels in an area where there are prawn trawlers.

The business and regulatory impact assessment refers to “creel ground”. I am not quite sure what that is. I think that it means hard ground where the trawlers do not work, where the crab and the lobster fisheries take place, but creel ground is exactly the same thing as trawl ground when it comes to the nephrops fishery. Unless there is some sort of spatial management or allocation of zones for creels and for trawlers, opening up nephrops ground or muddy areas in the Clyde does nothing to alleviate the problem for the creel boats. Essentially, they are disbarred from fishing areas that are known to be occupied by trawlers.

That means that, for the few nephrops creel boats that are impacted, the impacts are quite dramatic and the mitigations in the amended policy do nothing to lessen those. The business and regulatory impact assessment acknowledges that the smallest creel boats will have the biggest trouble moving, so it explicitly acknowledges that the impacts will be greatest for those boats. We do not see any proposals to mitigate the situation for those boats, which it is acknowledged are the most adversely impacted.

For a small group of boats, especially the nephrops creel boats, the impacts are quite dramatic, and the changed policy does nothing to mitigate that.

Elaine Whyte (Clyde Fishermen’s Association): You asked about the impact. The first thing to say is that there has been a massive impact on trust in the process. Many fishermen still do not even understand why the fishing ground has been closed, because of the speed of the process and the confusion around the level of consultation. There have been a number of consultations, and I had fishermen phoning me to ask whether they had already responded to the consultation on the revised order. It was such a confusing landscape for them, and even I was confused. Things moved really quickly.

Financially, the closure has had a massive impact. We have had mobile boats that have lost areas but, more significantly, we have had creel boats that have completely lost their areas and which have no other option to go anywhere. I have three members whose families are directly impacted by the closure.

The Government used the wording that the closure would have “a short-term impact”, but it is not a short-term impact—we are talking about boats having no income for three months. They were given hardly any warning to enable them to diversify or to go anywhere else.

In the longer term, there will be an impact on markets. We have just come through Covid and

Brexit, and we are trying to build up our European Union markets again. Those are the markets that the live and fresh boats will be reliant on. We are talking about strangling supply for about four months of the year. That will have a massive impact on who in the EU will want to work with us in the future. We are being put at a regional disadvantage compared with other areas in the UK and EU countries such as Ireland that can supply that product.

On the financial impact, we have asked whether there would be some kind of compensation for those men, because they had no warning of what was happening. We have not heard anything back on that yet. Nevertheless, we commend a lot of our MSPs, who have done the best that they can to pursue that.

With regard to the static gear, that obviously cannot move. Our fleet in the Clyde has been reduced by 50 per cent over the past few years anyway, and the remaining boats are very old—we have the oldest gauging boat in the whole of Scotland. They are not safe to go out to various other areas, so they do not have that option. That is very concerning.

The increased effort required is also a concern, because the area is not large. We will potentially have creel boats fighting other creel boats, and mobile conflict with other creel boats. The decision is causing a lot of conflict. The main issue is that it should have gone through the inshore fisheries group, and what was happening should have been fully explained to fishermen. If there had been engagement with local fishermen, we could have come up with a system that would have worked.

There is also a massive impact as a result of the lack of science. That could negatively affect management and fisheries in the future, so we really need to get that sorted out.

The Convener: Mercedes Villalba has a supplementary question.

Mercedes Villalba (North East Scotland) (Lab): It is on the point that Simon Macdonald raised about cod not spawning in muddy areas. I understand that the evidence on that is not conclusive and that, in Sweden, cod have been found to spawn in a muddy, sheltered body of water that is similar to the Clyde. I am interested to hear from the witnesses whether they feel that more research should be done into that before a decision is made.

The Convener: Would Simon Macdonald like to respond to that?

Simon Macdonald: Yes, indeed. There was a great lack of consultation on this whole thing beforehand. As I stated earlier, I was informed of the decision only the evening before the

announcement was made, which did not give me any time to work on informing the other fishers.

The scientific evidence seems to be sketchy, and studies have not been carried out for quite some time, so there is a great need for more scientific evidence that is concentrated in this very important area. That work needs to be done now, while we still have a fishery.

The decision affects not only the boats but all the surrounding coastal communities. Processors, hauliers, local businesses, suppliers to the fishermen and even local corner shops are all going to be affected, because there are so many fishermen who are left with absolutely no income. We need a strong effort on the scientific aspect to establish exactly where the cod are spawning in the Clyde; I would be most surprised to see that they were spawning in the muddy area.

Dr Alasdair Allan (Na h-Eileanan an Iar) (SNP): I am interested to hear, perhaps from Mr Macdonald first, about the science around the decision. As I have conveyed previously, I am slightly disappointed that we do not have Government scientists here today. I would be interested to know the witnesses' views about the science in this area, in particular regarding the decision to move away from the initial proposals from the Government and how they have been kept informed.

Simon Macdonald: I still feel that there has not been sufficient scientific input over the years, certainly in recent times, to establish the full pattern of exactly where the cod are. It is a given that they would generally spawn on the rockier ground rather than on the mud, but we need a strong back-up on that to establish the total facts.

The Clyde closure is nothing new—in fact, it has been brewing for the past 20 years or so. Indeed, it was very much instigated by the Clyde fishermen themselves. If you want to hear from a conservationist, ask a fisherman, because their livelihood and their future as well as their family's future depend on the conservation of the stocks in the waters where they fish. It is therefore important to bring the scientific assessment up to date.

09:45

Dr Allan: I hope that we will hear some more about that next week.

I want to ask Bally Philp about the involvement of stakeholders in the process of moving away. After all, there was a reduction of some 28 per cent in the areas subject to closure. How were stakeholders consulted in that process?

Bally Philp: There was an online meeting with Marine Scotland at which it announced that it was considering various options, and the present

proposal was shared. A couple of maps were displayed to the people present; one of them, which was called something like VMS—or vessel monitoring system—showed the intensity of fishing in the Clyde. It is worth noting, though, that VMS is installed only in vessels of more than 12m, so the map predominantly showed the activities of the trawler and dredge fleet.

We were then shown another set of maps relating to the sea bed substrate—in other words, the mud, shale, rocks and so on—and Marine Scotland suggested that, because it thought that the mud was not an ideal spawning ground and because of where the fishing activity was, as shown in the VMS map, the area that it had identified for allocation would maximise the amount of grounds that it could open up to the fishing industry and minimise the impacts of the process on the cod spawning. We objected at the time, because the VMS map identified areas where the trawler and dredge fleet was predominately operating. That might be good for that fleet, but it did not mitigate the impacts on the creel fleet, and we therefore requested some sort of mitigation in that respect. However, that request was not accepted.

Dr Allan: As I understand it, the closure came into effect on 14 February. Can you explain the extent to which fishermen are still able to fish? Are there any compliance issues in that respect?

Bally Philp: The people who removed their gear before the gales struck either abandoned the gear where it was or moved it somewhere else. However, those who have not had the opportunity to remove it are in a bit of a sticky predicament.

I believe that there have been some negotiations on compliance and on opening up the option for people whose gear is essentially trapped to access the closed area in order to remove it. However, the question then is: where exactly should they move it to?

The Convener: Elaine, would you like to respond to those questions?

Elaine Whyte: Yes, of course. It is predominantly my members, both static and mobile, who are impacted by the closure. To be honest, I have to say that Bally Philp is entirely correct when he says that they could not even access the gear initially and that we had to negotiate access.

As for compliance with the science, I have to say that there is a significant compliance presence—the men are actually feeling intimidated by it. We have a very good record of compliance in the Clyde; indeed, as Simon Macdonald pointed out, it was our organisation that led on the cod box and no-take zone in the area. We are very

compliant fishermen and are very concerned about the science.

On what we might need with regard to the science, I think that I sent you a report explaining that biomass in the Clyde is now four times higher than it was a number of years ago. However, the science is absolutely essential, because we have issues with predation. Cod will probably never recover; there are issues with movements in temperature, but the fact is that we also have massive predation issues with pelagic stock, which is now four times what it used to be and eats the eggs. We have skate, dogfish and various other things that we are calling for science on.

I should also say that our fishermen worked with Marine Scotland and the University of St Andrews—which I hope is giving evidence today—on the only Clyde trawls to have been carried out in order to get an idea of where spawning could take place. However, Simon Macdonald is right to say that “could” is not a strong enough word in this respect. All fishermen have been impacted by this and have been under unbelievable stress. They have been through Brexit, Covid and everything else. The mobile men have lost ground while some of the static men are not able to fish at all, and I do not think that it is good enough to base that approach on a “could”.

We as an organisation want to do absolutely the best that we can to support the science, because we really need it. After all, we are the forgotten coast, and we are going to end up with no fishing in that area at all.

Rachael Hamilton (Etrick, Roxburgh and Berwickshire) (Con): To develop Alasdair Allan’s questions, what is your assessment of the evidence, the reasoning, the process and the science that underpinned the prohibition proposals that led to the Scottish Government’s removal of the exemptions on the Clyde? It would be fantastic if you could give examples to develop that. I will start with Bally Philp.

Bally Philp: That is a good question. It is hard to argue that the process has been anything but diabolical. The evidence and the reasoning are lacking, as well. My understanding is that the cod box was put in place 20-odd years ago, with the exemptions in place, essentially, from day 1. Any reasonable person would have seen that that was destined to fail.

Whether the cod can recover at all is an interesting question, as is whether any of the fish that have declined can recover. We must understand that most of the previously targeted fish species in the Clyde have suffered the same fate as the cod. In essence, they are commercially extinct. In turn, other species have replaced them. As Elaine Whyte mentioned, dogfish and whiting

and suchlike have filled the ecological niches that were occupied by the fish species that have disappeared.

What we have seen is a crass knee-jerk reaction from Marine Scotland to an overwhelming consultation response that critiqued the failures of the cod box to achieve what it said that it would achieve in the first place. The rationale was seriously lacking, and the process did not involve the stakeholders properly. There is something called the business and regulatory impact assessment process—there is a toolkit for it online—which explains how Marine Scotland or any Government agency should look at policy options. The first thing that it should do is identify the rationale for the intervention. I think that Marine Scotland started not at the beginning but halfway through the process. There should be analyses of market failure or the failure of previous policy and of the evidence base for developing the policy. That is right at the beginning—that is in the opening paragraph of the business and regulatory impact assessment process. I do not think that that was done.

I am no scientist, but my understanding is that the Clyde is a substantially modified ecosystem and that, to look at cod recovery, we have to start with the question “What happened to the cod?” We have not yet even asked that question. Again, I am no scientist, but my understanding is that the extensive use of mobile gear in the Clyde—certainly since the 3-mile limit opened in the 1980s and, before that, in the 1960s, when the outer Clyde was opened—has substantially modified the habitat and the ecosystem, and that it may not even be possible to recover the cod without attempting to recover the whole Clyde ecosystem.

A knee-jerk reaction has been based around what Marine Scotland calls “disturbance”—it said that it did not want the cod to be disturbed. However, I have yet to see any evidence from NatureScot to suggest that, if we stopped disturbing the cod, they would suddenly bounce back in the Clyde.

I am flitting from pillar to post, but my point is that the whole process was a farce, right from the beginning. No one identified exactly what the objective of the measures was, or whether we could measure their outputs. From what I have seen of the science, we could ban all fishing in the cod box, but we would have no reasonable way of measuring whether that had succeeded. From what I understand, there is a lot of scepticism from within the fishing industry and the scientific community that it is even possible to succeed in recovering cod through the use of this mechanism. Marine Scotland should have started by asking what happened to the cod, what it can do about

that, and what the science and evidence say should be done about it.

Everything that has derived from that failure right at the beginning is just a farce, to be honest with you. I do not see any credibility—in the process, the science, the procedure or the evidence—for doing what we are doing.

Rachael Hamilton: I ask Elaine Whyte the same question. Do you want me to repeat it?

Elaine Whyte: No, I think that I remember it.

The process has been incredibly confusing. The fact that we are sitting here on 2 March, discussing the issue, when the change has been in place since 14 February, is testament to that. That is how the stakeholders feel. We are moving to managing fisheries by campaigning as opposed to by data, science and process, which sets a very worrying precedent.

Bally Philp talked about whether the trawl fisheries have had an impact. To be honest, we need science to prove what is happening in the area, but we have a lower than 1 per cent bycatch rate, which I believe is the lowest bycatch rate in the EU. Our fleets are very selective. They have 300mm square mesh panels to ensure that they do not catch fish, and we have observed that on trips.

The science on baseline stocks is very poor. Bally Philp is right: what will we compare the improvements with? If we close the area, how will we compare what happens with what happened previously? We have very limited survey information about what happened previously. In relation to the science behind, or rationale for, the change, the New Economics Foundation's report talks about the work by González-Irusta and Wright, but we are comparing the Clyde with the North Sea and Iceland. We are talking about very different types of fishery.

We should definitely be looking at what is happening in Northern Ireland and how fishermen there have been engaged in relation to the cod box. Northern Ireland has tried to develop a system that offers the right protections and that continues to monitor the science.

It is important to say that, in the initial consultation, Marine Scotland indicated that its preference was for a rollover of what has happened for the past 20 years. There is currently a review of how we manage fisheries. For this year, that indication was very misleading to a lot of people who would have responded to the consultation, because they thought that there would be a rollover. They did not know that any of this was coming; they were completely blindsided. We are told that the change fits in with the agenda

in the Bute house agreement. We need to know what is happening.

Bally Philp mentioned the BRIA process. We should have very detailed socioeconomic analysis of what the change will mean to small communities. As I said, we are talking about very small boats—even the boats in the mobile fleet are small. We are not talking about industrial trawlers. The communities are so reliant on those boats. Nobody has considered the three boats that I mentioned, which have absolutely no income. There has been no compensation. A proper rationale and engagement are essential, as is science. We cannot keep forgetting about that area.

I will give a practical example. About two and a half years ago, we held a scallop survey, which was done only as the result of a cancelled pelagic survey in relation to the North Sea. The survey allowed some science to be done on the west coast, and it showed that the Clyde has some very healthy scallop stocks. That is a different area, but the survey gave us a far better idea of what was happening, and it was done only as a result of a cancelled survey in relation to the North Sea.

We need reliable data sources. Fishermen are willing to help in any way that they can in working with neutral Government scientists to ensure that we do not have such processes, which blindside people and lead to a loss of trust. I cannot justify what has happened.

The Convener: Jim Fairlie has a short supplementary question.

Jim Fairlie (Perthshire South and Kinross-shire) (SNP): I thank the witnesses for coming along. There are clearly very strong feelings on the matter.

There seem to be an awful lot of competing pressures on the cod box. Lots of different types of boats seem to be going out. How do we get the balance right in order to support the three boats that Elaine Whyte mentioned? I am now even more concerned that we do not have Government scientists here, because the witnesses clearly have questions that they want those scientists to answer.

The Convener: Ask your question. We do not have a lot of time.

Jim Fairlie: In the future, how should we balance all the competing pressures relating to cod, creel and trawlers?

Simon Macdonald: In relation to the science, a comprehensive analysis needs to be carried out of why cod numbers in the area are not what they should be. I would not necessarily put the blame at the door of the fishermen—in fact, the fishermen are way down the food chain when it comes to

apportioning blame for a lack of cod in the area. As Elaine Whyte rightly pointed out, the trawl nets are fitted with escape panels so that the cod do not get trapped. With creels for nephrops, in particular, the eyes in the creels are quite small, so not many cod tend to get in there—there is a very low number in the catch.

I would look at the predators. In particular, spurdogs are becoming more and more prolific in the area, and they are voracious predators. We have to concentrate the science on that area, to establish exactly where the issues lie. I am also concerned for the smaller vessels, particularly the lobster boats, which fish very close to the shore. They will have absolutely zero income until the closure is lifted. I worry for the future.

10:00

Sean McIlwraith: I should have stated at the start that it is just masel, as a fisherman in the Galloway Static Gear Fishermen's Association, who has been affected. As Elaine Whyte said, there is no evidence at all to say that closin this area is actually gonnae work. That is quite worrying, and I would like to see something happening. We are puttin aw the boats intae the same area tae fish. That is no what I would like to see either, because I think we will get gear conflict, which was mentioned.

Is it going tae recover? It goes back to what Simon Macdonald and Elaine Whyte said about the predator spurdog. My worry is also about the seal population out there—there are seals everywhere, and they have to eat something as well. That is pretty worryin, tae. We need evidence because, from what Ah can see, we are puttin men out o jobs at the moment.

Jenni Minto (Argyll and Bute) (SNP): I have a quick question, just to expand on some of the evidence that Elaine Whyte and Bally Philp have given. You have both referenced how fishermen can support the science. Can you give specific examples of that? Also, will you expand on the work that has happened in Northern Ireland?

Elaine Whyte: We have structures in place. Somebody mentioned conflict and how we can resolve it by getting the science right. We have IFGs so that we can engage as fishermen, and we also have the inshore fisheries management and conservation group and the fisheries management and conservation group. Those are multidimensional stakeholder groups that allow everyone, from non-governmental organisations to fishermen, to engage. Those are the right forums in which to talk about how we take forward the science.

I explained that we have done some very limited trials working with Marine Scotland and the

University of St Andrews. That was a useful exercise, but it was very limited. We can do such things with minimum resource. In Norway, there is a reference fleet and the Norwegians work with their fishermen to monitor everything from temperature to spawning grounds, which means that they can actually close a spawning area for three weeks and open it up again—they can be that reflective. That would be my ideal. I want us to get to a point where we actually work together.

My concern is that there has been a real loss of trust. We want to rebuild that trust as quickly as possible. We do not want to be at the opposite end of the table from our Government. We want to work with the Government, scientists and our fellow fishermen. It would be best to look at what has been done in Northern Ireland through continual assessments, and through working with the fleet and with really good neutral scientists. We need to stop making policy on the basis of campaigns and start working together on the basis of sensible facts.

Simon Macdonald: Sean McIlwraith raised a point about predation by seals. We have two types of seals in the Clyde—the common seal, *Phoca vitulina*, and the grey seal, *Halichoerus grypus*. Each seal needs between 5kg and 9kg of fish per day to keep going. That accounts for a loss of fish stock in the area, and that is on top of the spurdog, which is a voracious predator. Science has to consider that area very closely. Government has the power to turn around and say, "Right, okay, we are closing the fishery for the area and you cannot catch anything there," but try telling that to the seals and the dogfish. That does not work. We have to look at the actual problem below the waves in order to establish the source of the issue.

Beatrice Wishart (Shetland Islands) (LD): In the evidence session and in responses to the call for views, we have heard concerns about the decision-making process in that decisions have been made without consultation or without much warning and have been inconsistent with policy commitments. Elaine Whyte mentioned trust, which I am interested in the panel's views on. What impact has the order had on trust in decision making and collaboration between the Government and industry on fisheries management? How might fisheries co-management across Scotland be impacted as a consequence of the order's handling?

The Convener: I will kick off with Elaine Whyte and then Bally Philp.

Bally Philp: I do not think that it is any secret that—sorry, was I to—

The Convener: Go for it—it is fine for you to continue.

Bally Philp: I do not think that it is any secret that the Scottish Creel Fishermen's Federation is quite contemptuous of existing policies and the failure to implement them and the rules and regulations. We have very little confidence in Marine Scotland's fisheries policy and its facilitating of that.

One quick retrospective example comes from the amendment of the common fisheries policy in 2014, which was meant to be a revolution in how we do fisheries policy. It introduced article 17, which said that member states should get preferential access to fishing opportunities on the basis of social, economic and environmental criteria. At that point, we thought, "Brilliant. We will see the lowest-impact gears getting the first shout at fishing opportunities," which is exactly what the common fisheries policy intended to achieve. We lobbied Marine Scotland for the better part of the next six years, and we have not seen even one example of that policy being implemented, even though it was EU law.

Now that we are transitioning through the Brexit process, section 25 of the UK Fisheries Act 2020 says that the Administration should

"seek to incentivise the use of selective fishing gear",

yet we are seeing no examples of that. If that had been applied in the Clyde as it should have been, preferential access to fishing opportunities would have been allocated to gears that do not catch cod and do not interfere with the cod population. Diving and creeling would not have been impacted by the measures at all, and dredging and trawling would have been impacted more. In fact, we are seeing the exact opposite—the creel boats are suffering most, even though they contribute the least to the impact. As far as our confidence in Marine Scotland and the process goes, this is just one more example in a long list of examples of the organisation failing to implement existing policy or legislation competently.

Elaine Whyte: On Beatrice Wishart's question, we saw what happened when the order was made—the Scottish Fishermen's Federation, which we are not part of, Communities Inshore Fisheries Alliance partners and those in Shetland made statements about their concerns about how we take co-management forward. We have worked incredibly hard with Marine Scotland and we want to keep that relationship going—we do not want it to disappear. We want to fix this, although the matter has not been correctly handled.

If we cannot work with the regulator, we are in a terrible position. I made the point that the Clyde Fishermen's Association was in one of the only areas to pilot a no-take zone, working with NGOs, and we piloted the cod box. The 300mm square

mesh panel is one of the most selective gears; we are not catching cod. The good work that we do, no matter what it is, seems to be penalising our area. I am concerned that that sends a message that says, "Let's not try and do something in case it gets taken out of context."

Bally Philp talked about who is catching cod. As I said, the mobile gear is not catching cod, and neither is the static gear to any great extent. However, the decision is about spawning. One of the main issues that we have is that we need to understand what we are talking about in policy terms—the policy is about spawning cod. That is what is causing the confusion among fishermen. They think that one type of gear might have preferential treatment over another, but that is not the case. They have to understand the rationale—if the closure is about spawning, let us justify why it is about spawning and say whether it affects any gear or all gears.

The whole process has certainly undermined trust, and I am concerned about that. I want to get things back on track. We need neutral science, and we need to move away from people not understanding policies and running on campaigns. We need to get some baseline science, and our door is open to helping with that in any way that we can.

The Convener: Alasdair Allan has a short supplementary question.

Dr Allan: I have a question for Simon Macdonald. The Government has moved its position to some extent towards, or at least to take account of, what has been put to it by fishing interests. What do you advocate that the Government should have done that it did not do? How would it have done that in a way that would have protected cod spawning?

Simon Macdonald: The process was undertaken rather rapidly. As I stated at the beginning of the session, I was informed only the evening before, by the director of Marine Scotland, of the forthcoming announcement in the morning of the Clyde cod spawning closure. I was also advised that all the exemptions had been removed. That left me with only a few hours in which to sort something out, which is not sufficient time. We were coming up to the weekend, and a meeting was arranged for the Monday morning with various stakeholders and Marine Scotland. Bally Philp, Elaine Whyte and I all attended that meeting.

That did not leave us a lot of time. We had been preparing ourselves for the worst-case scenario of total closure, and the meeting that we had arranged was to give us an understanding of the ground on which the cod would likely be spawning, as opposed to the ground where they would not

be, which should therefore remain open for fishers.

I acknowledge that the closure is selective in that it affects the nephrops fishery more, as far as the opening of the ground is concerned. Nevertheless, the cod fishermen and crab fishermen are still caught in the area where there is a total closure. It is impossible to please everybody all the time, but the closure has happened rapidly and there has been a certain amount of confusion, initially because it seemed that the exemptions would be there and then they were not, and now they are back again. That has damaged people's faith and confidence in the likes of Marine Scotland, the IFGs and—as Elaine Whyte alluded—the Clyde Fishermen's Association. We really have to work to repair the situation and get that confidence back. We are here today to establish what the situation is and get everything back on track.

Mercedes Villalba: I have a quick question for Simon Macdonald. You seemed to suggest that predators, rather than fishers, are having the biggest impact on cod stock. However, research that I have seen from Marine Scotland science, in conjunction with the European Commission, states that

“a drastic reduction of juvenile whiting bycatch is necessary for the ... stock to recover”

and that

“Predation from grey seals had little impact overall”.

Will you share the evidence for your statement with the committee?

Simon Macdonald: When was that report written?

Mercedes Villalba: It was published in February 2019.

10:15

Simon Macdonald: Things move rapidly. As we all know, there is climate change, and water temperatures are changing, so fish move accordingly. There have been recent reports of more spurdogs in the area, which are voracious predators, as I said. I am also hearing all the time that there is an increase in grey and common seals up and down the west coast.

The Convener: Jim Fairlie has a short supplementary.

Jim Fairlie: My question is for Simon Macdonald. What other measures should we take to protect the cod stock?

Simon Macdonald: I think that we have pretty much covered that. We need scientific evidence. We need to look at all the factors that affect cod,

including the predation side of things. We also need to get an up-to-date assessment of cod numbers.

Noise is one of the issues. I remember 30 or 40 years ago having it well illustrated to me at the old Torry research station in Aberdeen that noise and vibration on the ground are a big factor that affects cod. I am not a scientist and I do not pretend to be one, but I observe. I take such things on board—I listen to them and make notes on them, because the day will come when I need that information. This is that day.

Karen Adam (Banffshire and Buchan Coast) (SNP): I sense a lot of frustration among the witnesses. It is not just the science that is being disputed but the process that Marine Scotland has followed. Why do you dispute the science? What is your evidence? On the process, what action should be taken? The science shows that there is a particular situation in which action needs to be taken.

I want you to drill down into what you are disputing. On the basis of your evidence, what different process would you have used from that of Marine Scotland?

The Convener: We will kick off with Bally Philp and then go to Elaine Whyte.

Bally Philp: My perspective might be different from that of the other guys. We exclusively represent creelers and divers, so we do not understand the detail of Elaine Whyte and Simon Macdonald's concerns about seals and trawl bycatch. My argument is that the science was not used—there was no science. The work should have started with NatureScot making a recommendation.

Richard Lochhead convened a group called Clyde 2020 to look at how we could recover the Clyde ecosystem and bring it into good environmental status. The group submitted an extensive contribution. You will hear from the report's author later, so I will leave him to speak for himself. The report makes recommendations and explains what can be done.

My position on the science is that we are not using it. No process has been described for how we evaluate the outcome of the measures. We should apply an ecosystem-based approach to policies. We should not look at cod just when they spawn; we should look at cod throughout their lifecycle and include their predators, what protects them, what they must eat as they mature through the various size classes and whether the habitats exist in the Clyde to allow them to thrive.

From our point of view, we are going about this completely wrongly. We should start with scientific advice, apply the policies and processes that are

in place, such as the ecosystem-based approach, and apply the spirit of article 17 of the regulation on the common fisheries policy, which gives preferential access to selective gear that does not impact cod as much. In addition, we should transition the fishing industry to a lower-impact fishery not just for cod but for the whole inshore ecosystem. That would be the scientific approach, but we are not taking it.

Elaine Whyte: First, operating in silos and not having baselines is really causing problems. Everyone has been talking about skate, dogfish and seal predation and, as I said, the biomass level in the Clyde is four times higher now than it was in 1949. The last science—and therefore the last report—was done 30 years ago. The fishermen say that the ecosystem has definitely changed but, without the science to show what is changing, it is difficult to do anything about that. We therefore need baseline science. We need to do what Norway and Ireland are doing and work with our fishermen through IFGs, associations or whatever. That has to happen.

I am pretty sure that, later in the meeting, the committee will hear misunderstandings of the process. I sometimes misunderstand the dates or why we were doing something and so on. However, this is all about spawning and, as I said, I am pretty sure that we will hear people showing that they do not understand that or coming at it from their own angles. We all have our own angles, and we are all here to represent different people. However, as Bally Philp said, this has to be about the science, and we do not have that.

While we do not have the science, we will be subject to bad decisions. We have heard the Clyde closure being compared to the North Sea scheme, but we cannot compare the two things. We do not have a cod or any such targeted fishery in the Clyde. Eight white-fish boats were lost to the Clyde because we wanted to have the closure—it was a massive hit. We always assumed that there would be monitoring, but that did not happen, and as a result we have no white-fish boats any more.

The North Sea has intensive monitoring and sampling; areas can be closed quite quickly to sample what is happening. However, that does not happen in the Clyde. We might not need sampling at the level that is used in the North Sea, but we certainly need it to happen.

As for what can be done differently with the process, there should be a 12-week consultation to let all the stakeholders and sectors have their voice. After that, we should go back to and work together on the science.

If I can say one thing, let it be this, please: comparative and baseline science is important, and, instead of concentrating on campaigns or

coming at this from different angles, we should understand what the policy is there for. If it is about trying to recover cod or realising that we can never do so because of the different stocks coming in, we still need a basic understanding of that, or we will always get into this mess.

The Convener: I call Mercedes Villalba for a brief supplementary, to be followed by Alasdair Allan.

Mercedes Villalba: On Elaine Whyte's call for more science, I understand that early results of a study undertaken by the Scottish Oceans Institute and the Clyde Fishermen's Association show the presence of spawning cod in the closed area during the closure period, which suggests that the closure is in the right place at the right time. Will you share with us where specifically the cod are spawning, according to that research? When will that research be published and put in the public domain so that we can all see it?

Elaine Whyte: This highlights the confusion on the issue. That research was done not by the CFA but through a collaboration and partnership involving the CFA, the University of St Andrews and Marine Scotland. We would never carry out any research without Marine Scotland, because we can be very subject to campaigning and therefore want to be seen to be neutral.

I believe that the four reports, which were done with St Andrews, will be published shortly. They are nothing to do with the CFA—we have nothing to do with the science. We just let the others use our vessels. Every single year since 2018, we have been asking to get the trials back in place and to get the reports published. We have no issue with that. The initial reports that were published were signed off by the scientists at Marine Scotland. Because of Covid and Brexit, there has been a delay, so the research has not been made public.

That comes back to another thing about campaigning. A lot of people have said, "Oh, the CFA is withholding information," or whatever, but we have said nothing about the reports. The reports will say what they say, and it will be up to every stakeholder to take out of them what they can. We are not saying that there is evidence in there to suggest that spawning is definitely happening in a certain place and that that will be consistent over the next few years. You must also remember that the reports are from 2018 and are probably already out of date.

Mercedes Villalba has touched on the reason for my concern. For the past few weeks, we have been attacked for withholding the reports and for knowing where spawning is happening. We do not know that, and we are not saying that the reports say anything. It is up to the scientists to say that.

The reports have not been signed off yet, but I hope that they soon will be.

Mercedes Villalba: You have not seen the reports.

Elaine Whyte: I have seen them, but I am not going to make an assessment of what they mean. As I have said, this is about baseline science. I cannot really say anything publicly until Marine Scotland and the University of St Andrews sit down and agree what is there. The reports are basically a presentation of facts, and I cannot assess the correlation with regard to where the spawning takes place, whether it takes place regularly and whether that means that the closure is happening in the right place. I do not think that the reports can say that either, because they are minimal—they just scratch the surface.

Mercedes Villalba: In so far as the reports are just a presentation of the facts, as you said, the CFA supports them and will have no issues with them when they are published.

Elaine Whyte: It is not a question of supporting or not supporting them—it is about presenting baseline facts to people and trying to identify trends over a longer period, which is information that we do not have. If all that we have is the results of a five-day survey that was undertaken once a year for three years, ending in 2018, will that prove that cod are spawning in specific areas? I do not think so, but it is up to the scientists to say that.

I am saying that we need more intense science. The only thing that has been productive about this exercise is that it has allowed fishermen to work with scientists and learn how they do such things. Would I say that the research proves one thing or the other? No. We need more science, which is what we have said from the start.

The Convener: I call Alasdair Allan.

Dr Allan: You are not going to thank me for making this point, convener, but we have just heard a call for us to hear more about the official science and scientific data. It is difficult for us to discuss and argue the issues at this meeting—

The Convener: Alasdair—

Dr Allan: No—let me finish, convener.

The Convener: We discussed this earlier and reached a committee decision—

Dr Allan: —when we have not as a committee—

The Convener: Alasdair, could you please stop?

Dr Allan: —invited anyone to represent Government science.

The Convener: Thank you. We discussed the issue this morning and took a decision. We have heard the point three times already. Time is very short, and I do not think that the point needed to be put on the record again.

We have come to the end of the session, as there are no more questions. There will be a brief suspension until 10:30 for a changeover of witnesses.

10:27

Meeting suspended.

10:30

On resuming—

The Convener: I welcome our second panel, although it is a bit of an exaggeration to describe our witness as a “panel”. We are delighted to have with us Professor Michael Heath from the University of Strathclyde. Unfortunately, we have been unable to get any other academics to appear this morning, due to time constraints.

We have approximately 25 to 30 minutes to ask Professor Heath some questions, and I will kick off. What does current scientific evidence tell us about the main factors that are impacting on cod spawning in the Clyde and wider marine ecosystem health?

Professor Michael Heath (University of Strathclyde): Where to start? It is a bit difficult to tell what factors are affecting cod spawning in the Clyde, to be honest. Cod prefer temperatures of 5°C to 7°C in which to spawn. That observation is based on evidence from most of north-west Europe. The temperatures in the Clyde are rising. In the 1960s and 1970s, the minimum temperature in the Clyde was between 6.5°C and 7°C. By the 2000s, the minimum temperature each year was 7.1°C, so the temperature conditions for spawning are becoming less favourable in the Clyde—that is for sure.

The numbers of cod are declining, based on the limited survey evidence that we have, and the catches of cod by the commercial fishery have declined. In the 1970s and 1980s, the annual catch on the Clyde was about 1,000 tonnes. By 2005, the commercial landings were zero. Both the numbers and the environmental conditions for spawning are getting worse.

Jenni Minto: I am interested in hearing what other measures could be taken to protect spawning cod.

Professor Heath: We need to look at the history a little bit. The original rationale for the cod box closure back in 2001 was to reduce fishing mortality among cod. Support for that is clearly

stated in the written evidence. In 2007, an EU working group reviewed fishing closure areas all around Europe, and a large section of the report was on the Clyde cod box. It was stated very clearly that the purpose of the closure was to reduce fishing mortality. The reason was that, as cod stocks had declined in the Irish Sea, trawlers from Ireland were coming to the Clyde to catch spawning cod in March and April.

The area of the cod box in the Clyde is a really important spawning area for cod regionally—in the Irish Sea and south-west Scotland in general. A very large proportion of the cod catch in that region in the 1980s and 1990s came from the International Council for the Exploration of the Sea statistical rectangle that represents the closure box, mostly in March and April, when spawning was taking place. The original purpose of the closure was to protect cod from fishing mortality.

The new measures have shifted the goalposts. The discussion is now about the protection of cod from disturbance, which is quite different. The rationale is to try to increase egg production in the hope of getting more recruits—more young of the year—coming through into the stock. However, the science for that is completely lacking. There is no scientific justification for shifting the goalposts regarding the rationale for the closure. The withdrawal of the exemptions for boats and fishing gear that do not catch spawning cod is justified by people saying that it will increase egg production, but there is no evidence that it will carry through to an increase in the number of juveniles.

Jenni Minto: My question was about what other measures could be taken.

Professor Heath: It is clear that, locally in the Clyde, the cod box has not had the desired effect of recovering the cod stock. What other measures are there? We have to look for the other sources of mortality. We have heard about predation, which might be the source, but that is not a lever that we can pull in fisheries management.

The remaining source of cod mortality, which we can influence, is cod bycatch in the nephrops trawl fishery. The fishermen have made huge efforts to reduce that in recent years, and they have gone a long way. However, the bycatch of cod in that fishery is still about 100 tonnes a year. That figure is based on Marine Scotland and Scottish Fishermen's Federation observer sampling data. It represents less than 2 per cent of the total biomass catch by those trawlers, so that bycatch is within the regulations. Nevertheless, that 100 tonnes represents 2 million fish. The average size of the fish that are caught in the bycatch is 15cm, and on average they weigh about 46g, so 100 tonnes equates to 2 million fish. A very rough estimate of the number of cod in the Clyde is about 3.5 million fish of all sizes—from the very

smallest to the very biggest—so 2 million fish in bycatch represents a very significant fraction of the cod stock.

If we had to look at a management measure that would go beyond the effectiveness of the spawn enclosure, it would have to address that issue. How we do that without detrimental effects on the very important nephrops trawl fishery is another matter. We have to be really creative about how that can be done in terms of when, where and how we fish.

The Convener: Ariane Burgess has a question.

Ariane Burgess (Highlands and Islands) (Green): Thank you for giving us the bigger picture, Professor Heath. I want to dive into a little more detail. You talked about predation and bycatch. Is there any evidence that aquaculture and its side effects, including sea lice and pesticides, have an impact on cod populations?

Professor Heath: I think that I can say that there is no evidence about the relationship between cod and aquaculture.

Ariane Burgess: Is that because you have not done any research in that area?

Professor Heath: That would be right.

Ariane Burgess: Is it worth looking at that, given that we have heard this morning about the fluidity—to use a water-related word—of the Clyde area and the changes that are happening there?

Professor Heath: Yes. I think that you could make a case for researching the relationship between cod and aquaculture. You could also make a case for researching the habitat for juvenile cod, which is seagrass beds; the sensitivity of the fish to them; and the need to reinforce and protect seagrass beds and other areas of in-shore habitat that are essential for juvenile cod. There are many aspects that we could research.

Ariane Burgess: It seems that we need to go in that direction, so I will take that further and link it to the bigger picture. The joint fisheries statement will require Scotland to develop more fisheries management plans. Does Scotland need an overarching fisheries plan in order to address systemic pressures on fish stocks and marine ecosystems and bring about a just transition to sustainable fisheries? If so, what should be the key principles in that plan? It is a big question, but I would really appreciate your perspective on that.

Professor Heath: There is certainly an overarching need for an ecosystem-aware approach to the way in which we manage fisheries. However, the science to support that will be expensive. We need strong baseline studies and a clear strategy for measuring the

effectiveness of the measures that we take. The approach needs to be a bit experimental.

There is no clear answer—there is no one thing that we should do. The situation will vary from area to area. For example, it will vary enormously between the North Sea and the west of Scotland, which have completely different systems in terms of geomorphology, sedimentology, fisheries economics, fish species and everything else. It is a great ambition to have something like that, but it will be expensive to implement. To be fair to the guys in Marine Scotland Science, they are extremely short of resources, as we all are.

The Convener: I apologise—I may have cut off Jenni Minto before she finished her line of questioning. Had you finished, Jenni?

Jenni Minto: Yes, convener.

The Convener: Okay. We will move on to questions from Jim Fairlie.

Jim Fairlie: Professor Heath, you said at the start that there is no way to mitigate predation. I think that you mentioned pulling the trigger on it. However, we heard an awful lot from the witnesses in our previous evidence session about predation by dogfish and various other species including seals. If 2 million young cod are being taken out by nephrops nets, are you saying that there is no way back for cod in the cod box?

Professor Heath: The cod box is an ephemeral thing. The thing about cod is that they congregate in specific areas to spawn. They have done that for centuries and those areas are long established. Cod will gather in the cod box from a much wider area. They use the cod box area to spawn, and then they disperse again. The cod box is there to protect those dense aggregations of cod. Fishing there is like taking a rifle to the zoo; the stocks are so dense and it is so easy to catch cod in the cod box that it will attract fishing boats in unless there is some regulation to prevent that. The cod box is there to protect those dense, ephemeral spawning aggregations at a particular time of year.

How the cod are affected when they are not in the spawning cod box during the rest of the year, when they have dispersed into the wider area of the Clyde, the north channel and the northern Irish Sea, is a different question. That aspect is not covered by the cod box, which is why we need to think about other measures that may be needed to protect cod, such as habitat enhancement for juvenile fish and looking more closely at the issue of bycatch.

Jim Fairlie: That is where I was going next. What do you suggest should be done? Picking up on what you said about the nephrops bycatch, if there are only 3.5 million fish in the cod box and those nets are taking out 2 million every year, that

is a huge amount of fish. What do we do to protect the cod?

Professor Heath: I did not say that there are 3.5 million fish in the cod box.

Jim Fairlie: My apologies—I misunderstood you.

Professor Heath: I said that there are 3.5 million in the Clyde, ranging from tiny fish to the very biggest ones. With regard to the spawning fish, we do not have a good estimate of the real level of stock in the Clyde. The data are just not there. The Clyde has not been the focus of enough attention to enable us to gather enough data to do a good stock assessment.

A back-of-an-envelope calculation suggests that there might be 100,000 mature spawning cod in the Clyde, out of the 3.5 million fish—cod—that there are in the Clyde. The rest are all immature fish. The vast majority of the fish are immature, and then there are the very few—perhaps 100,000—spawning cod. Some of those are going to the cod box. Some of the fish in the cod box will come from outside the Clyde, perhaps from the Mull of Galloway or the north channel. The situation is very fluid over an annual cycle. Fish do not stay in the same place all the time.

The Convener: I would like some clarification. I think that you indicated in an earlier response that, potentially, 2 million cod are caught as nephrops bycatch. That would suggest that two thirds of the total population of cod in the Clyde are caught as bycatch of the nephrops fishery. That seems incredible. Is that absolutely right?

10:45

Professor Heath: As a back-of-an-envelope calculation, that is what it looks like. A hundred tonnes of cod is caught as bycatch. There is not much argument about that. That is a very small fraction of the total catch that is taken by the nephrops trawlers, but they are all very small fish.

The natural mortality rate of those very small fish due to predation is also high. A lot of the fish that are consumed by spurdog and seals are those small fish. There is an enormous predation loading on those very young fish. That is quite natural and it is not special to the Clyde. The predation mortality of young cod is high wherever we go, and the bycatch is part of that.

The Convener: Okay. Thank you.

Mercedes Villalba: Good morning. I think that I have understood this. You are saying that bycatch is the biggest of the main factors that impact on cod spawning that we have potential to do something about. With that in mind, can spatial management be a tool to reduce trawling bycatch?

Is differentiation between different types of fishing in different areas a useful route to go down?

Professor Heath: The bycatch is not influencing cod spawning; it is affecting the survival of the young fish that are the products of spawning. The cod closure box is about protecting the mature stock from fishing; the bycatch issue is about the survival of the young fish.

On what we could do, there is a clear spatial pattern in the bycatch rate—that is, the number of young cod caught per trawl in the Clyde. Most of the bycatch is taken in the northern part of the Clyde, which is where the young fish are most abundant. In the southern part of the Clyde—from Arran southwards—there are very low cod bycatch rates in the nephrops trawlers, as far as we can tell.

Some spatial measures could be taken. In the North Sea, the fishing industry has a system of self-reporting in place for when high bycatch rates of particular species are encountered in order to warn other fishermen not to go to that area at that time. That is a very reactive system. The fishing industry contributes to an alert system to say not to fish in an area because high bycatch rates are being encountered in it. There are many such measures that can be taken.

Dr Allan: Professor Heath, it would be interesting to get your take on some of things that previous witnesses have said. There seems to be some scepticism about the effectiveness of previous measures on cod in the Clyde, and questions have been raised about what could be done in the future. It would be interesting to hear your views on the effectiveness of the measures that we have had in the past and whether anything can be done in the future to protect cod spawning and a cod fishery in the Clyde.

Professor Heath: Part of the problem is that the original spawning cod closure made no provision for the gathering of monitoring data to evaluate its success, so we do not know how effective the cod box closure has been. It is a sort of precautionary measure. It seems to be a good thing to do, and I think that it is right. It is important to protect a really important spawning congregation of fish on the sill of the Clyde in the cod box, but we have no real scientific data on how effective that has been in protecting, conserving and recovering the cod stock in the area. It is an important point that there is no provision for monitoring the success of the measure.

Dr Allan: I will pick up, again, on something that other witnesses have raised. You may be about to tell me that there is not much science on this either—I do not know—but I would be interested to know your view on the impact that spurdog might be having on cod. There has been a debate

involving other parts of the west coast about a spurdog fishery being viable in the future. Can you offer any observations on spurdog?

Professor Heath: Spurdog are certainly very abundant in the Clyde—there used to be a fishery for dogfish in the Clyde. We do not have any data on the diet composition of spurdog in the Clyde. That spurdog are responsible for the lack of recovery in the Clyde is a sort of arm-waving proposition—there is no hard evidence for it.

Rachael Hamilton: Do you think that the Scottish Government's decisions have disproportionately impacted on one fishing method over another without the clear scientific evidence that you discuss?

Professor Heath: I cannot comment on the impact on individual fisheries—that is beyond my expertise—but I do not see any evidence to support the idea that creels, for example, disturb the spawning activity of cod. That seems to be something for which there is no evidence at all.

Jim Fairlie: On the point that you have just made—I am speaking purely from a layman's point of view—we heard earlier from Simon Macdonald about creel fishermen not having any effect at all on spawning. He seemed to be saying that noise was a big disturber of spawning fish. I will come back to that point later.

What research and data monitoring do we need in order to ensure that we have the proper evidence to protect the cod recovery measures? I know that that is a big question.

Professor Heath: As I said earlier, the original purpose of the cod box closure was to reduce fishing mortality among cod. The measures that we would need in place to monitor the success of that would include survey and sampling data, with information gathered on the numbers of different age classes of cod in the region. That would allow us to calculate the mortality rate, from year to year, of the cod that are caught in the spawning box. We simply do not have those data.

An annual survey of the whole of the west of Scotland is conducted in March as part of the wider stock assessment process for all white-fish species in the west of Scotland. Four or five trawl hauls per year are conducted in the Clyde as part of that, and that is insufficient to monitor the success or otherwise of the spawning box closure.

Research on the effects of noise is a separate question. This is about shifting the goalposts of the logic for the cod box closure towards not just protecting cod from being caught but protecting cod from disturbance to their spawning activity. The science to support that is completely lacking in the Clyde, as far as I can see.

Jim Fairlie: To me, protecting the spawning is the same as protecting the fish from being caught. If the fish are being caught, they are not laying eggs, but if they are laying eggs and those eggs are being disturbed, the effect will be the same, surely.

Professor Heath: But it is not about laying eggs; it is about the survival of the fish. The original purpose was to prevent cod from being caught. Ultimately, the future of the stock depends on fishing mortality—on the mortality rate that is inflicted on the cod by fishing. That is about the survival of the fish.

The other part of the story, which is egg production, involves promoting the production of young fish—of recruits; of young of the year. That is a separate logic.

Jim Fairlie: I understand that, but, at the end of the day, what you are trying to do is produce more young fish. If, as we were told earlier, noise is a real problem in relation to allowing cod to settle, those cod will move. If they are moving, they are not laying eggs, which means that the eggs are not there in the first place and, therefore, you will not get young fish. The issue involves understanding whether the shift from catching to disturbance is really such a dichotomy, or whether both things are equally important.

Professor Heath: But the assumption there is that, if you produce more eggs, you will get more young fish per year, so—

Jim Fairlie: But the other assumption is that, if you move them, they will not lay any eggs.

Professor Heath: No, I do not think that there is any scientific evidence to support that.

Jim Fairlie: According to the evidence that we were given this morning, noise is a problem for fish that are laying eggs. If the fish do not lay the eggs, you do not get the young fish. It is a dual problem, as far as I can see.

Professor Heath: But it is not necessarily the case that, if they lay more eggs, you will get more young.

Jim Fairlie: I understand that, but, if they do not lay eggs in the first place, the young are not going to be there. It is a chicken-and-egg situation.

Professor Heath: Nobody is suggesting that they will not lay any eggs as a result of noise. There is no science to suggest that at all.

Jim Fairlie: Okay, we will need to take some scientific evidence to make sure that we know what we are talking about here. I cannot get away from the fact that, if you get the eggs laid and the young fish hatch, they will be predated upon and we will get bycatch. I understand all that. However, if the cod move because of noise, all of that will

not necessarily happen. If a bird lays an egg in a nest and gets disturbed, she leaves the eggs and the eggs do not hatch. Either way, you get the same level of loss, and I would like to get more evidence on what the reality of that is.

Professor Heath: I do not think that you can equate spawning by cod to egg laying by birds.

An individual 60cm female cod in the Clyde lays about 1 million eggs a year. It takes only two of those to survive to the age of three to sustain the stock. The vast majority of the eggs that are laid every year never make it to the point where they become fish that will spawn—they are lost to water currents or they are eaten by plankton or other fish, such as sprats. The number that make it through all that to become grown-up, spawning cod is an extremely tiny fraction of all the eggs that are laid. The small changes that you could achieve in the number of eggs that are produced as a result of reducing noise is entirely swamped by the natural processes that affect the survival of those eggs and the carry-through to the number that become adults. The evolutionary strategy of cod is to produce vast numbers of eggs with the expectation that few will survive.

Karen Adam: I find all this fascinating. There seems to be a sticking point around the data and the science—that is something that we keep hearing. There is some science, but it is often disputed, as we heard from the previous witnesses.

What opportunities does the Scottish Government have to help with future research in your field? How do you see the fishers and the scientists collaborating in this field to improve the research data and monitoring?

Professor Heath: I think that Marine Scotland scientists are doing the best that they can with the resources that they have. They cover a vast area in Scotland, with myriad issues to address. I guess that the Clyde is quite a small thing on their radar when compared with some of the big problems that they face. However, they have been extremely supportive of the scientific work that the academic sector is doing in the Clyde. The situation has been quite serendipitous. We have a hit list of projects that we have drawn up as part of the Clyde Marine Planning Partnership research advisory group system, but finding money for those is difficult. We put in grant proposals, and some get funded and some do not. That means that what goes ahead is a bit hit and miss.

We lack a systematic, permanent and enduring monitoring system to support the gathering of data in the Clyde, but you could say the same for the Moray Firth, the Firth of Forth, Shetland, Orkney or a lot of other places in Scotland that require that

investment. The resources to do that are just not there.

11:00

On collaboration with the industry, lots of opportunities to do that are being exploited. Elaine Whyte has mentioned the survey collaboration between the University of St Andrews and the Clyde Fishermen's Association, for example. We will grasp those opportunities wherever we can. I know Elaine Whyte reasonably well and we get on quite well, and we have talked about setting up a monitoring system for the stock assessment of scallops in the Clyde, for example. That fell because of a lack of funding—in the end, we just could not get the funding together.

The bottom line is that there just are not enough resources to address all the aspirations for marine management of the Clyde.

Karen Adam: That is a helpful response. Do you feel that what is needed is sustained, lengthy investigation rather than short-term gathering of evidence?

Professor Heath: I suppose that you might get away with episodic intensive activity. For example, if you did an intensive study every four or five years, that might be sufficient, rather than having a more draining, continuous and perhaps lower-level effort over many years. I think that the strategy needs to be thought through.

Ariane Burgess: It is great to get a picture of the challenges around gathering data, funding and so on in relation to issues not just in the Clyde but across the marine space in Scotland. That helps us to get a better sense of what is going on, so thanks for that. I almost wish that we had spoken to you first today, because you have given us a much better context for our lines of questioning.

I would like a bit more detail on certain subjects. What are your views on the use of remote electronic monitoring, with fishing vessels being equipped with cameras to assist with data collection on cod recovery and the impact of different fishing methods? How could the Scottish Government encourage more fishers to make use of that tool and play a key part in research and monitoring?

Professor Heath: I think that there is a lot of scope to use new technology in the monitoring of fisheries and of the environment.

On the monitoring of fisheries, it would be great to have more data so that we could work towards having a fully documented fishery and could know what was being caught, what was being landed and what was being discarded.

There is also much that can be done with regard to the monitoring of the environment through things such as echo sounder surveys and hydroacoustic surveys of the biomass and the distribution of fish and plankton in the sea. We have recently carried out surveys in the North Sea using unmanned service vessels, which are small, remote-controlled vessels with scientific equipment on board that can be controlled from anywhere—even Australia, if you want, via satellite. That is a new approach to gathering data more cheaply and more continuously than we are able to do with big, expensive ships.

Ariane Burgess: Thank you for expanding on the possibilities around the potential for controlling equipment via satellite and so on. It is clear that we need to be moving in that direction if we want to have successful fisheries in the future.

Professor Heath: Yes. It all takes resources, of course—none of that is free.

Rachael Hamilton: I had to leave the room briefly, so I apologise if you have already covered this. We spoke earlier about an ecosystems approach to fisheries. What would that look like? I believe that it would involve balancing the sustainability of cod stocks with the economic viability of the fishing industry. Can you cite some examples of how that approach has worked in the rest of the world?

Professor Heath: The ecosystems approach to fisheries is about breaking away from conducting stock assessments on a single-species basis. For example, for decades, stock assessments in the west of Scotland and in the North Sea have been done on a species-by-species basis—we have a stock assessment and total allowable catch for cod and the same for whiting and so on. However, that does not recognise the fact that all those species are part of a network of who eats whom in the sea.

Everything in the sea, from the smallest plankton to the biggest whale, is connected, eventually, by a network of predator-prey relationships. The ecosystems approach to fisheries is about recognising that everything is interconnected and that no fish species is an island. You can extend that further to a recognition that people are connected to the sea as predators on the marine ecosystem. The next frontier for the ecosystems approach is to treat humans as part of the ecosystem as well as the animals and plants that live in the sea.

The Convener: Failures in the laying of the first prohibition order have been highlighted to us and, subsequently, that order was changed. Do you think that that has led to a lack of trust on the part of fishermen and scientific researchers who are

involved in this area in relation to how regulations are brought forward?

You also touched on the issue of the resourcing of Marine Scotland. Is the situation that we face unlikely to get better unless there is a significant increase in the resources that Marine Scotland has to ensure that policies are put in place that will deliver the sustainable fisheries and rural communities that we all want?

Professor Heath: To answer your second question first, resourcing of marine monitoring and research in Scotland is severely limiting and the capacity to develop state-of-the-art approaches is very much hampered by a lack of resources.

On your first question, there is widespread support for the original logic of the closure box to protect cod from being caught. The leap in logic towards what we have recently seen in terms of trying to promote egg production in the hope of increasing the number of juveniles in the system lacks science. It took everyone by surprise and has been quite unhelpful.

The Convener: Thank you for joining us. You were very much in the spotlight, being on your own. We appreciate your taking the time to answer our questions.

We will suspend the meeting until 11:15, when we will be joined by our final panel of witnesses.

11:08

Meeting suspended.

11:15

On resuming—

The Convener: Our third panel consists of witnesses from environmental non-governmental organisations. I welcome to the meeting Russell Cheshire, trustee of the Community of Arran Seabed Trust; Alex Watson Crook, projects manager at the Sustainable Inshore Fisheries Trust; Calum Duncan, convener of Scottish Environment LINK's marine group; David Nairn, from the Our Seas coalition; and Phil Taylor, head of policy and operations at the Open Seas Trust.

We have until approximately 11:55 for this session. I ask Rachael Hamilton to kick off the questioning.

Rachael Hamilton: Good morning. We have heard evidence that the cod box is destined to fail, and it is questionable whether the Scottish Government's actions will be able to recover cod stocks. Does the current cod closure provide adequate protection for spawning cod in the Clyde?

I will start with David Nairn.

David Nairn (Our Seas Coalition): Thank you for the question and for the opportunity to attend the meeting.

I want to start by saying that the Our Seas coalition is not actually an ENGO—I think that the convener wrongly labelled it as such. Instead, it is a broad, steady and growing coalition of 128 members representing coastal businesses, community groups, fishermen's organisations, shellfish farmers, tour boat operators and those involved in what I do, which is marine monitoring and habitat restoration in the Clyde. The coalition includes a diverse group of people. We are not run by a committee as such; instead, we have a flat hierarchy that allows all members to contribute to the organisation.

We have three main asks: first, a transition to low-impact fisheries and preferential access for non-destructive or less-destructive fishing techniques; secondly, the tracking and monitoring of all inshore vessels; and, thirdly, a new approach to protecting marine stocks, including cod. In that respect, we suggest the introduction of a new coastal inshore limit that would be based loosely on the old 3-mile limit.

Although I welcome the new regulations for, and the ethos behind, the cod box, I do not believe that it will have any long-term benefit for cod in the Clyde. We cannot just ring fence an area in the southern part of the Clyde when we know that all the juvenile cod swim at the north end and that the whole of the Clyde is used as a nursery area for juvenile fish. We might be protecting one of the areas off Campbeltown where cod spawn, but we are destroying habitats in other areas of the Clyde with bottom-towed gear. Until we address that, the regulations in question are doomed to fail. There is, for example, no evidence to suggest that previous derogations that allowed bottom-towed gear had any effect on the cod at all.

We welcome the initiative in the marine spatial planning framework to have an ecosystem-based approach in the Clyde. It is time that we recognised that and addressed the issue in a fisheries framework.

Rachael Hamilton: Thank you. I ask Calum Duncan the same question.

Calum Duncan (Scottish Environment LINK): It is too early to say whether the cod box is destined to fail. As the committee has heard, there is so much to unpack. For many decades, the Scottish Environment LINK network has consistently advocated for ecosystem-based management. That is why we advocated for the Marine (Scotland) Act 2010, for there to be a marine planning system and for a well-managed network of marine protected areas.

Most recently, we have set out in our ocean recovery plan the steps that we think are needed to recover the health of the seas. As part of that, we emphasise the importance of ecosystem-based fisheries management as well as spatial management of fishing. We recognise in the plan that some of the heavier bottom gears nearshore have too high a footprint.

We advocate a spatial approach to managing fisheries all around Scotland along the lines of what Mike Heath said. We need to consider an ecosystem-based approach, depending on what parts of the sea we are talking about.

We supported a proposal for a regulating order for the Clyde. It was not implemented, but we supported it because we see the success of such an approach in Shetland.

The answer to the question is that, in isolation, the cod box is not enough, but I am on the same page as Mike Heath in saying that it still has a role. It might not have worked in the past because it allowed exemptions for gears that might affect spawning and mature cod, but there were no other spatial measures where the juvenile cod aggregate in the sea lochs north-east of Arran, as the mass evidence highlights and as David Nairn mentioned.

I want to respond to some of the things that were said in the earlier part of the meeting. We will never have perfect science, but we have best-available science, which says that there is a bycatch problem in the Clyde and that protecting and enhancing critical fish habitat helps.

The process for removing the exemptions for the cod box could have been handled better. I understand the discussion about disturbance versus actual catch. In relation to taking a precautionary approach, we were concerned about disturbance, but we think that the outcome could have been much smarter. We could have used zones to give creelers confidence that they could use certain areas. The whole process highlights concerns about the lack of a spatial framework, which is what is needed.

The cod box is not, therefore, destined to fail, but it needs to be monitored. The whole process highlights the need for a wider spatial framework.

The Convener: David Niven would like to come in.

David Nairn: Calum Duncan said—

The Convener: Nairn.

David Nairn: Can you hear me?

The Convener: I called you David Niven. David Niven is not appearing in front of the committee today. We have a far better replacement in David Nairn. *[Laughter.]*

David Nairn: I live on the Clyde. I can look out the window and watch three trawlers rip up and down the Largs and Hunterston channel, which is where we are trying to restore habitat. I am actively engaged in monitoring and restoring the seas out there.

I have lots of pictures of bycatch. I totally support Professor Heath's figures for the amount of bycatch that gets chucked back, and they are probably just estimates. We watch a lot of bycatch getting chucked into the sea.

I am involved in hydroacoustic monitoring of the Clyde. Earlier in the meeting, it was said that one of the reasons to exclude creel fishing is that it disturbs the lekking sites where cod spawn. However, we have a lot of data on that, which we are happy to offer to the committee. Marine Scotland knows about the high resolution of our data. We can provide that to the committee and to Marine Scotland, and work with Mike Heath, to show that the creel boats do not produce anywhere near the amount of noise that the mobile sector produces. We have to remember that the mobile sector works on top of the lekking sites, whereas, due to the spatial squeeze in the Clyde, the creel boats are pushed to the periphery.

We produce scientific papers. We have had a PhD, an MSc and various honours projects, and we have produced several scientific papers about the Clyde. Scientific work is being done by community-led organisations, but it is held aside. There is scope there. I want to ensure that the committee is aware that data is available, should it ever be needed.

The Convener: Thank you. The real Phil Taylor would like to come in.

Phil Taylor (Open Seas Trust): Thanks for the opportunity to talk to the committee.

I will respond to Rachael Hamilton's question about whether the cod box is destined to fail. No, it must not fail. We are relying on legislation from 1967 to bring the statutory instrument to you guys. That legislation requires a justification, and the justification is that the designation is used to recover cod. The Government is then compelled to recover cod using that site. That aligns with the Government's international commitments under sustainable development goal 14 and with its commitments under the Marine (Scotland) Act 2010 and the national marine plan. It also aligns with pretty much everything that the Government says on those issues in relation to its future catching policy and strategy.

It is really encouraging that the committee is spending so much time on the issue, because you are there to hold the Government to account on those commitments. I really value that work, and I wanted to respond on that technocratic issue.

Alex Watson Crook (Sustainable Inshore Fisheries Trust): The cod box is not destined to fail, but it will fail if the Scottish Government and Marine Scotland do not move forward with some of the ideas that Professor Heath mentioned earlier. We need to push forward with communication and stakeholder engagement in order to make it happen.

The situation is really frustrating. By 2015, we knew that the cod spawning protections were not working in that form. That was seven years ago, so we have had time to think about the issue, and now is the time to drive things forward.

Jenni Minto: I will follow on from Alex Watson Crook's point. Will you give us your thoughts on how the consultation progressed? I recognise that there are competing marine interests, and I am interested in how those interests can be appropriately balanced in the future. What consultation is needed to ensure that there is sustainable fishing in communities? I will start with Alex Watson Crook.

The Convener: I do not think that she can hear us. I will bring in Phil Taylor to respond to that question.

Phil Taylor: My view is that the consultation was extremely poor. I agree and sympathise with the views of the stakeholders from whom we heard earlier this morning about the process. It was suggested that there was an expectation in the initial consultation, which was not followed through. That shows a poor approach to public decision making from Marine Scotland. A consultation should be a consultation. We should not put consultations on the table that have pre-baked decisions in them. That is completely inadequate in democratic terms. We really need to push back against that.

11:30

How we manage the stakeholder landscape is an important question, and I am buoyed by the fact that the committee is paying so much attention to that point. I ask you to help with part of that. This stuff is clearly very contentious, and there is distrust across the board in all sorts of damaging ways.

For example, it is suggested that there is a high degree of compliance in the Clyde, but, just a couple of months ago, there was a case of a fisherman pleading guilty to deploying nets in the no-take zone in Lamlash bay. That is negative and it damages trust. We need politics to help us through that.

The inshore fisheries group structure provides a place for fishermen to talk, but it allows no one else to have an input. Open Seas has provided

lots of evidence and made lots of requests to such groups over the years, but nearly all of those have been ignored or have not been adequately responded to. There is really no way for the community to engage in that way, although we are not a community—we are an NGO and a charity. We need better structures for communication, and we need better support from politicians to create those better structures. We need a forum for stakeholders.

I am sorry if I am misinterpreting or misrepresenting what Jenni Minto said, but, in relation to restructuring and the scientific and socioeconomic work that has been done in the area, it is worth noting that the Scottish Government published work from its consultants that looked into the nephrops fishery in 2020. I have the numbers in front of me. If there was better spatial management of the fishery—we are talking about better spatial management of creel versus trawl and about the management of both—there would be a £6.4 million increase in gross value added, and the number of creel vessels would increase from seven to 69. Elaine Whyte talked about the reduction in the number of creel vessels earlier. The Government's own science backs up support for a socioeconomic transition that would also achieve some of our environmental goals.

We need to bear in mind the fact that restrictions do not always have a negative impact on socioeconomics in the long term. They have an impact on businesses, and we need to figure out how to support businesses with transition and diversification. Of course, with yesterday's announcement from Kate Forbes, we are in a time of massive structural change. We should not be afraid of massive changes in economies, but we need politicians to help us to navigate the process.

The Convener: Russell Cheshire has indicated that he would like to come in. I will then take Alex Watson Crook and Calum Duncan. If you could, please try to address the question directly. We have five or six more questions to come, so I hope that all the points that you are making in your contributions will be covered anyway, but it would be appreciated if you could address the question.

Russell Cheshire (Community of Arran Seabed Trust): Thank you for the opportunity to speak, convener. Could I just have a brief resumé of the question?

Jenni Minto: I am interested in how we can appropriately balance our competing marine interests.

Russell Cheshire: The issue is that we are looking from a base of competing interests. The sea is a public resource and interests should be working together. We seem to be in a situation in which a large sector has taken over much of the

Clyde. That sounds a bit emotional but if you look out there, you will see that most of the boats are prawn trawlers. Their catch is something in the region of 70 to 80 per cent of what is taken out of the Clyde.

We have heard from Mike Heath about bycatch and the cod taken from there. If we can change the way in which the fishing industry operates and transition away from high-impact bottom-dragging methods to other, lighter-touch opportunities, that sector will benefit, the creel sector will benefit and other people such as commercial sea anglers will benefit. At the moment, we have two or three boats on the Firth of Clyde, whereas there used to be 90-odd.

It is about working together and making space for each other. We need to shift how we are looking at the whole system.

Alex Watson Crook: We are on audio only, unfortunately, due to some technical issues.

There are competing interests, and it is really important that Marine Scotland and the Scottish Government convene appropriate stakeholder forums where such things can be thoroughly discussed and decisions taken with the ecosystem-based approach absolutely in mind.

Here at SIFT, we have previously considered, and we have released a couple of reports on, the reform of inshore fisheries management and governance, and it is governance that needs to be highlighted and considered by the committee when we think about getting the right people round the table to make the right decisions. Our most recent paper on that specifically considered the regional inshore fisheries groups, the lack of engagement with other marine stakeholders and the lack of rigour in the development of the fisheries management plans by the RIFGs. I am more than happy to share those papers with the committee following the meeting.

The Convener: Yes—that would be helpful.

Calum Duncan: We put in a very detailed response to the future of fisheries management discussion process a few years ago, when we had the space to think about what the future of fishing in Scotland would look like and how we would get there. As part of that discussion, we said that there was an opportunity to take stock of all the effort in Scotland: what the fleet looks like and what stocks have been targeted. We would have a think about where Scotland wanted to get to as a whole, in terms of a just transition to climate-smart and nature-smart fishing further down the line.

It is hard to have that discussion, partly because of resources and partly because of the structures. As far as inshore fisheries are concerned, as Mike Heath touched on and as other witnesses on this

panel have been touching on, we have a vast coastline with comparatively few resources. I made a point on that to the predecessor committee, comparing the number of fisheries compliance vessels of the Sussex Inshore Fisheries and Conservation Authority with those for the whole of Scotland, for example. Not that the inshore fisheries and conservation authorities in England are without issues, but the clue is in the name: they are both inshore fisheries and conservation authorities.

I absolutely endorse much of what was said in previous evidence sessions. This online format is a bit different from talking in person, as we are in different sections. I would have been happy to say that in a plenary session.

We need a process where there is no distrust or concern that, if there is not engagement in one area, something will happen somewhere else. There needs to be integration. There is an opportunity with regional marine plans and the reform of fisheries management, but it has to happen meaningfully, and resources have to be put in for that. I know how stretched resources are, but that is a simple fact.

David Nairn: With regard to competing interests and distrust, I think that, as far as keeping things local and Clyde-centric is concerned, communities are not being allowed to engage in the marine spatial planning framework as such. They have, for example, been excluded from the delegate authority. Until they are allowed to engage, there will always be a certain distrust.

Perhaps I can give you an example. When, during the future of fisheries management workshops, we went up to Glasgow, we were basically shouted out of our workshop by the fishing interests. The fisheries organisations on the Clyde will say in public, “We have an open door—come and speak to us at the IFG”, but, when we ask to go to an IFG meeting, we are not allowed to attend. The doors are not open—we are not operating in a silo, but being put in one. Until something changes, there will be distrust between the communities and the commercial and vested interests on the Clyde, which include mobile gear fishing.

Jim Fairlie: From the evidence and reasoning that you have seen, do you feel that the Scottish Government was justified in putting in the cod box in the first place?

Phil Taylor: Someone made this point earlier, but the justification for the cod box was given in the consultation in October 2021—it was the report by the Scottish Oceans Institute and the Clyde Fishermen’s Association. That was a good number of months ago, but the report has yet to be made public or shared anywhere. At a meeting

with Marine Scotland, I asked whether a summary of the report could be shared, and it turned out that the chief scientist from Marine Scotland science, who was at the meeting, had not seen it, although the chief policy person had. That is very worrying, not only because it is completely against the Aarhus convention on transparency in environmental decision making but because of what it highlights with regard to structures of government.

As for whether the cod box was justified, the fact is that the cod population on the west coast has clearly collapsed. People are very happy to talk about the Newfoundland cod collapse but, for some reason, we never talk about such things in a Scottish context, despite our having suffered a similar fate. Recovery action is completely justified; indeed, as I mentioned earlier, we have legal duties to take it. Whether this is the right location, I simply cannot tell you, because the evidence that is being used by public authorities to justify it is not being made available to environmental groups such as ours or even to the public.

Dr Allan: A number of witnesses today have talked about what has not worked, but I am keen to know about the areas where there has been success and research that might help us to do the spatial planning that you have been talking about. That, again, might be a question for Phil Taylor.

Phil Taylor: I am happy to start, but I do not want to hog the space.

The spatial management that you allude to is clearly the core part of this. Marine Scotland science did some great work that was presented to the North West Waters Advisory Council, the European Union body that managed some of these fisheries, on the sort of ecosystem modelling that Mike Heath talked about. If we are talking just about cod, there is a need not only to reduce the mortality of juvenile fish as they come through the age classes to ensure that they get to age 3 and can begin to contribute to the population, but to improve the structure of the habitat that they use as nursery grounds in which they hide, as they need to when they are very small. As a result, they need sea bed diversity, and seagrass is one of the many habitats that they can use. They also need to be able to forage for themselves.

Such approaches have worked in Norway. I am reluctant to always point to Norway, as it happens so much in fishing, but I just want to highlight the example of the skrei cod fishery. You might have heard of skrei cod—you will sometimes see it on the menu in high-end restaurants. I cannot remember whether they have a spring spawning, but they are big cod that come inshore, are line caught and are well treated—that is, their meat is well treated.

We do not have those kinds of inshore fisheries for cod in Scotland, and that is really disappointing, as it presents a real opportunity. If we were able to recover the cod population, it would be a good thing for fishing fleets, communities and the food system around the Clyde. There is certainly a parallel with what is going on up north.

11:45

Russell Cheshire: I just want to point the committee in the direction of the Lamlash Bay no-take zone and the south Arran marine protected area. According to research carried out by Dr Elliot and others in 2016 and 2017, juvenile gadoid or cod-like fish such as cod and haddock are starting to return in good numbers to those areas. Because of a lack of disturbance—in a large part of the south Arran MPA, all trawling is excluded—the fish have an opportunity to grow to a meaningful size, allowing them to reproduce more healthily.

The committee will probably be aware that, in marine life, a youngish fish of five, six or seven years might produce 100,000 to 250,000 eggs per annum, whereas a much older fish of, say, 18 or 19 years can produce a million. As we have seen from Mike Heath's numbers, the chances at the moment of a fish living to 18 or 19 years are extremely remote, and we must implement proper fisheries management—and, indeed, marine protected area management—throughout not just the Firth of Clyde but the rest of Scotland.

The Clyde sea sill, which covers most of what we are talking about today, was designated in 2014, but, after seven years, there is still no effective marine management plan in place for it. Marine Scotland needs to get a move on so that fish and the rest of the marine ecosystem can recover to a healthy, abundant, biodiverse and productive level. At the moment, we are looking at what is effectively a monoculture in the Clyde. It used to be much more diverse, and what we have now is the result of overfishing and possibly industrial pollution and climate change. As others have said, a lot needs to be looked at, but allowing fish such as the cod to recover would be a big step on the way back to a healthy and biodiverse marine environment in the Clyde.

Karen Adam: We have heard a lot about opportunities, with fisheries management being mentioned in that respect. What specific opportunities might exist through the development of a fisheries management plan to improve such management in the Clyde? Perhaps Phil Taylor can take that question.

Phil Taylor: There are loads of opportunities. Among the specific policy opportunities that are coming down the line are the future catching policy

and the joint fisheries statement. That statement should set out the Government's plans and policies for delivering the fisheries objectives in the UK Fisheries Act 2020, including the ecosystem, national benefit, climate change and bycatch objectives. All the building blocks are there for us to use that policy opportunity to create a better and more sustainable system that provides public benefits.

As for the future catching policy, the Government has promised that since the publication of the future fisheries strategy at the end of 2020—another timeline—but I guess that that will be coming to the committee in the next wee while. I believe that the opportunity that we have in those measures is the ability to provide for a recovery. We are talking about a strategy that goes up to 2030, or eight years hence, so there is an opportunity to allow the stocks to recover and give us the sort of diverse ecosystem that Russell Cheshire mentioned, to provide a diverse opportunity for fishing, food and enjoyment of nature. That diversity is a key aspect and, as Russ said, it is really lacking at the moment.

Calum Duncan: I heartily endorse our looking at Norway with regard to inshore fisheries.

The question that has just been asked allows me to go back to some supplementary comments that I was going to make in response to previous questions.

The policy commitment and legal consultations that are coming down the line must be looked at holistically. Phil Taylor has listed some of them, but I would also highlight the work to improve protection of priority marine features beyond the MPA network, the work that is starting on the welcome commitment to making 10 per cent of Scotland's seas marine highly protected areas and the commitment to capping inshore fishing and having that as a ceiling from which to make an evidence-based reduction.

For me, the key watchword is integration. Having been in many conservation policy and fisheries policy discussion spaces, I know that they do not often come together. I do not mean that as a criticism—the situation is getting better—but we have to recognise the fisheries benefits of biodiversity protection and the biodiversity benefits of fisheries protection, integrate them better and try to look at the opportunities that are coming forward as a package for delivering the ecosystem-based spatial management that we are advocating.

The Convener: Mercedes Villalba has a supplementary question.

Mercedes Villalba: I just have a very quick yes or no question for each panellist, starting with Alex Watson Crook. Do you believe that there is

evidence to support the banning of creeling and dive fishing along with trawling?

Alex Watson Crook: As Professor Heath said earlier, there is very little evidence that creeling damages the spawning stocks. In fact, that is a really important part of what went wrong with the consultation process. When we were discussing which exemptions should be allowed to continue for the spawning stock, it was absolutely clear that Marine Scotland had not looked at each sector individually; instead, it classed this very much as all or nothing. That was a real mistake that has seriously undermined trust, and I hope that it can be reviewed.

The issue clearly needs to be looked at sooner rather than later, and it is evident that Marine Scotland needs to consider the exemptions for next year, accepting that we are already well into this season. The committee should look at that and directly challenge Marine Scotland on its evidence.

The Convener: I will go through the rest of the panel very briefly, but I must ask everyone to keep their answers to yes or no. It was certainly a question that you can answer in that way.

Russell Cheshire: I would say no. Creeling should still be permitted.

Calum Duncan: There is evidence that it could be controlled and done smarter.

David Nairn: Creeling should still be totally permitted, as should diving. I should say dead quickly that banning the static sector was obviously a knee-jerk response and is totally contrary to the progress that we want to make in future on the transition to a sustainable fishing method. We are just cutting our nose off to spite ourselves.

Phil Taylor: I would say no, and I note that the Government's evidence in that respect has since been removed from its website.

The Convener: Thank you very much for your time. Your evidence will help our consideration.

At our next meeting, the committee will take evidence from the cabinet secretary on, and consider, the Sea Fish (Prohibition on Fishing) (Firth of Clyde) Order 2022 and consider the Red Rocks and Longay Urgent Marine Conservation (No 2) Order 2021 (Urgent Continuation) Order 2022. We will also consider two statutory instrument consent notifications for the Organics (Derogations) (Amendment) Regulations 2022 and the Ivory Prohibitions (Civil Sanctions) Regulations 2022, as well as a draft report on the Good Food Nation (Scotland) Bill.

Meeting closed at 11:55.

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