ENVIRONMENT AND RURAL DEVELOPMENT COMMITTEE

Tuesday 9 January 2007

Session 2

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ENVIRONMENT AND RURAL DEVELOPMENT COMMITTEE
1st Meeting 2007, Session 2

CONVENER

*Sarah Boyack (Edinburgh Central) (Lab)

DEPUTY CONVENER

*Eleanor Scott (Highlands and Islands) (Green)

COMMITTEE MEMBERS

*Mr Ted Brocklebank (Mid Scotland and Fife) (Con)
*Rob Gibson (Highlands and Islands) (SNP)
*Richard Lochhead (Moray) (SNP)
*Maureen Macmillan (Highland and Islands) (Lab)
*Mr Alasdair Morrison (Western Isles) (Lab)
*Nora Radcliffe (Gordon) (LD)
*Elaine Smith (Coatbridge and Chryston) (Lab)

COMMITTEE SUBSTITUTES

Alex Fergusson (Galloway and Upper Nithsdale) (Con)
Trish Godman (West Renfrewshire) (Lab)
Jim Mather (Highlands and Islands) (SNP)
Jeremy Purvis (Tweeddale, Ettrick and Lauderdale) (LD)
Mr Mark Ruskell (Mid Scotland and Fife) (Green)

*attended

THE FOLLOWING ALSO ATTENDED:

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

THE FOLLOWING GAVE EVIDENCE:

Bertie Armstrong (Scottish Fishermen's Federation)
Lloyd Austin (Scottish Environment LINK)
Mark Carcas (Scottish Renewables Forum)
Dominic Counsell (Scottish National Heritage)
Richard Fairbairns (Sea Life Surveys and Wild Scotland)
Ben Hadfield (Scottish Salmon Producers Organisation)
Nigel Mills (British Ports Association)
Professor William Ritchie (Aberdeen Institute for Coastal Science and Management)
Michael Scott (Marine Biodiversity Working Group)
Professor Graham Shimmield (Scottish Association for Marine Science)
David Wilkie (British Marine Federation Scotland)

Clerk to the committee
Mark Brough

Senior assistant clerk
Katherine Wright

Assistant clerk
Jenny Goldsmith

Location
Committee Room 2

Scottish Parliament

Environment and Rural Development Committee

Tuesday 9 January 2007

[THE CONVENER *opened the meeting at 14:36*]

Marine Environment Inquiry

The Convener (Sarah Boyack): Good afternoon. I welcome members of the committee, one visiting member, members of the press and the many members of the public who are with us this afternoon. Our visitors have had places carefully allocated to them around the table.

This is the first oral evidence session of the committee's inquiry into the marine environment. We are using a round-table format to start our inquiry, rather than splitting the witnesses up into different panels, although we will have panels later. Our aim is to get a good introduction to the inquiry by getting a range of key interests round the table at the start to explore some of the main themes relating to the marine environment. We would like to concentrate on the key features of the Scottish marine environment and on the pressures on and challenges to it, and then to think about the current limits or barriers to managing it effectively.

I plan to cut the discussion into two halves—we will have a tea break at around 3.30, after which we will come back for a final discussion. I aim to conclude at 5 o'clock. If we get through the meeting faster than that, that will be fine. I understand that one of our witnesses has to leave before that, which is also fine. If you just slip away quietly, that will be okay.

Our aim is to have a discussion, not a question-and-answer session—we want to discuss issues around the table. Colleagues, members and witnesses may wish to ask questions of one another or of the whole meeting, or to make general contributions rather than just to ask questions. It is up to you. People should, however, speak one at a time through me, for obvious reasons. If you want your words to be recorded in the *Official Report*, to help our scribes, participants must speak one at a time. I shall say people's names before I introduce them, partly to help our broadcasting staff, who will ensure that microphones are turned on, and so that everyone's comments can be recorded properly for the *Official Report*.

Those are the ground rules. I would now like to go round the table and invite members and witnesses to introduce themselves in turn. Members should say which party and which area they represent, and witnesses should name their organisation and state what role they play in it, so that we all know who everyone is.

A couple of people are unable to come today. Roddy McColl was due to give evidence on behalf of the Fishermen's Association Limited, but has sent his apologies because he has the flu. However, colleagues have a copy of his written evidence. We do not have Richard Yemm from Scottish Renewables with us, but his colleague Max Carcas is here. Apart from that, the names on my list should be the same as the names round the table.

I am the committee convener, Sarah Boyack, from the Labour Party, and I represent Edinburgh Central. I turn to my deputy convener.

Eleanor Scott (Highlands and Islands) (Green): I am a Green MSP for the Highlands and Islands.

Richard Fairbairns (Sea Life Surveys and Wild Scotland): I am wearing two hats this afternoon, just to confuse everybody. Primarily, I am a boat operator for Sea Life Surveys off the west coast of Scotland but I am also the chairman of Wild Scotland, which is an association for wildlife operators in Scotland.

Elaine Smith (Coatbridge and Chryston) (Lab): I am the Labour MSP for Coatbridge and Chryston.

Bertie Armstrong (Scottish Fishermen's Federation): I am the chief executive of the Scottish Fishermen's Federation, which is the trade association that looks after the catching sector.

Mr Ted Brocklebank (Mid Scotland and Fife) (Con): I am the Conservative MSP for Mid Scotland and Fife.

Dominic Counsell (Scottish National Heritage): I am a national strategy manager for Scottish Natural Heritage.

Professor Graham Shimmield (Scottish Association for Marine Science): I am the director of the Scottish Association for Marine Science at Dunstaffnage.

Mr Alasdair Morrison (Western Isles) (Lab): I am the Labour MSP for the Western Isles.

Mr Mark Ruskell (Mid Scotland and Fife) (Green): I am the Green party MSP for Mid Scotland and Fife.

Michael Scott (Marine Biodiversity Working Group): I chair the marine biodiversity working group.

Nigel Mills (British Ports Association): I am the director of harbours for Orkney Islands Council and I am here to represent the British Ports Association.

Rob Gibson (Highlands and Islands) (SNP): I am a Scottish National Party MSP for the Highlands and Islands.

Ben Hadfield (Scottish Salmon Producers Organisation): I represent the Scottish Salmon Producers Organisation and I am also employed by Marine Harvest as its environmental and technical manager.

Nora Radcliffe (Gordon) (LD): I am the Liberal Democrat MSP for Gordon.

David Wilkie (British Marine Federation Scotland): I am the Scottish president of the British Marine Federation, which represents marine leisure businesses. I run a boat yard and marina in Argyll.

Professor William Ritchie (Aberdeen Institute for Coastal Science and Management): I am a professor at the University of Aberdeen and the director of the Aberdeen institute for coastal science and management.

Richard Lochhead (Moray) (SNP): I am the SNP member for Moray.

Lloyd Austin (Scottish Environment LINK): I represent Scottish Environment LINK's marine taskforce.

Max Carcas (Scottish Renewables Forum): I am the business development director for Ocean Power Delivery and I represent the Scottish Renewables Forum.

The Convener: During the first part of the meeting, I propose that we focus on the key issues, pressures and challenges in respect of the marine environment. Many of those issues have come through strongly in the written submissions of witnesses who are with us today and of members of the public. We want to get to grips with the value of the marine environment to Scotland in terms of nature conservation, the economy, its social and cultural importance to coastal communities and so on. What are the core issues that we need to protect? We want to hear people's thoughts on what the objectives of a different kind of management of the marine environment should be. After the break, we can talk about management of the marine environment and governance issues.

Who wants to break the ice?

Bertie Armstrong: I have what I hope is a strong message from the Scottish fishing industry.

On the first focus point of the inquiry, which is use, I should say that fishing in Scotland almost predates history. It is very much a hallmark Scottish activity, in that the product is excellent and, at this point in its history, it is a healthy industry. However you measure it—whether by volume or turnover—most of the United Kingdom's fishing industry is centred in the north and on the activities of the Scottish fleet.

The industry has changed mightily in the past few decades. It has done so painfully—which has been accepted—in response to conservation issues. We now find ourselves with an industry that is about the right size, by which I mean that sustainable catching just about matches catching capacity. There will always be an imbalance of one sort or another—probably in a sine-wave fashion—but, right now, we are about the right size.

Contrary to the impression that you might get from the perception in the press, we are harvesting our target stocks entirely sustainably. The challenge is to continue to do so, so there is a complicated regime behind that to ensure that it happens. We co-operate fully in that regard.

I am encouraged by the fact that most other submissions include a headline statement to the effect that we have an excellent environment around Scotland.

14:45

The biggest challenge that I face is that emotion and perception skew the public's view and influence the views of law-makers about the reality of fishing. For example, many people will have seen the weekend edition of *The Scotsman*, which carried an article on fishing, with the double-banner headline, "Escalating threat to the future of Scotland's seas". The article is simply wrong. It lists a litany of disasters that have been cherry picked from elsewhere in the world, but it does not describe the responsible Scottish fishing industry.

My message has two parts: first, we have a right-sized industry that, when all is said and done, provides a natural resource that is entirely sustainable if we get it right—that is the challenge—and which provides protein for us to eat; and secondly, if we were to legislate in the wrong way, such that we depressed the fishing fleet out of existence, the consequence would be that we would still get protein from the sea but it would be transported over many miles. The food miles that would be involved would probably be in thousands rather than in hundreds. The fish would also be caught using methods and in places over which we have absolutely no influence, whereas at this point in history we have a right-sized fleet over whose activities we—the public and legislators—have enormous influence.

Mr Brocklebank: I am interested in what Bertie Armstrong has said and can certainly agree with some of his comments. However, I seek his thoughts and those of whoever produced the Scottish Association for Marine Science's submission—no doubt that person will make himself known—on an issue that is mentioned in the Scottish Fishermen's Association's submission. Roddy McColl—who is unable to join us today—talks about the gear types that are generally used by the Scottish fleet. He claims:

"None of these gear types harms the sea bed. The bottom trawls are towed over the smoother grounds since they cannot be dragged over rocks or peaks."

Basically, he suggests that the damage that trawls can do to the sea bed is overstated.

However, the Scottish Association for Marine Science's submission says pretty much the opposite, as it states:

"Towed bottom-fishing gears are thought to constitute one of the largest global anthropogenic sources of disturbance to the seabed and its biota."

Can we try to get to the bottom of that? Do bottom trawls damage the sea bed or not?

The Convener: Although the question has been put to two witnesses, I ask Bertie Armstrong to be quite brief, given that he kicked off our discussion of the topic. He can answer first, and then we will get Graham Shimmield's take.

Bertie Armstrong: We can draw a straight parallel with arable farming. Dragging a plough across a sensitive habitat of flora will wreck the flora. Dragging a trawl across a sensitive set of underwater environmental conditions will probably wreck that environment. The trick is to ensure that we do not do that, so we contribute to that process; for example, scallop dredges should not be towed across delicate coral reefs. It is all a question of where the sea bed is trawled. The two issues are mutually exclusive. Dragging a trawl across an area that is not suitable for trawls will not only damage the area but wreck the trawl, so we do not do it.

The Convener: Graham Shimmield provided us with the Scottish Association for Marine Science's submission. Does he want to respond?

Professor Shimmield: Our submission quotes a scientific paper by Mike Kaiser of the University of Bangor in North Wales, which reviewed the worldwide impact of bottom-fishing—I make it clear that the review did not deal specifically with Scottish waters. However, in the context of that review, it is clear that bottom trawling—that is, trawling that directly impacts on the sea bed and the fauna—is a major source of disturbance. A lot of research has been carried out to try to understand how quick recovery from such disturbance can be. We contend that certain gear types cause detriment.

As has just been said, responsible fishing is going on in areas that are fished repeatedly but, given fishermen's increasing navigational skills and their use of navigational aids, it is tempting for them to trawl right up to and alongside areas in which the fauna and flora might be more sensitive. We are concerned about that.

One question is about the marine environment's recovery to an environmental state—it is often debated whether it can return to a pristine condition. Scientific research is sadly lacking in respect of our understanding of how quickly recovery from bottom trawling can take place. Such recovery is important for conservation of biodiversity and to enable stocks to be understood from a fishing perspective. That is what we are calling for specifically. Globally, the impacts of bottom trawling are significant and steps have been taken to protect areas of natural heritage.

Mr Brocklebank: I want to mention another subject that brings the conservationists and the fishermen into conflict from time to time, and on which we have had reports from various people. That subject is the growing number of grey seals in the seas around Scotland and the effect that they might be having on fish stocks. The fishermen are constantly accused of overfishing, but we seem to be loth to talk about what we intend to do about grey seals. Am I right in thinking that a third of the world's population of grey seals is in the waters around Scotland? There is such a statistic somewhere.

The Convener: I invite Graham Shimmield to respond to that, before we hear from Richard Lochhead.

Professor Shimmield: I believe that that is the case. Unfortunately, one body that is not represented here is the sea mammal research unit that is based at the University of St Andrews, and which is responsible for providing advice to the standing committee that deals with conservation of seals and which provides annual census data. I am aware that recent census data on grey seals show quite sharp changes—down as well as up—and we probably need to understand those.

The Convener: We will hear from Richard Lochhead, who is sitting on the other side of the table, and then from Lloyd Austin.

Richard Lochhead: My question is on a different subject.

The Convener: Does anyone else want to come in on the same topic before I invite Richard Lochhead to open the next area of questioning?

Elaine Smith: I have a brief comment. We should bear in mind the fact that we have received

from Advocates for Animals a submission on seals, which was made on behalf of a number of groups.

Richard Fairbairns: In our hydrophone work, which involves listening to underwater sounds from different species, we find that if there is a dredger—a bottom rake that dredges for clams—within 3 miles, we cannot do any work. I regard noise pollution as being an important consideration.

Nigel Mills: I point out that under "trawling", we must include fishing gear that sucks up material from the sea bed to extract shellfish, which creates tremendous damage. Such areas of sea bed recover only extremely slowly. We have evidence of that in Orkney, where at low tide huge trenches can be seen where such boats have crossed the affected area. Material is drawn into the vessels, filtered and then discharged. Such boats are indiscriminate in what they draw from the sea bed. They want to catch a particular species, but they suck up many different animals along with the sea-bed material, which they then redistribute. It can take many months for the trenches to disappear. That should be borne in mind.

The Convener: My thought is that it comes out loud and clear in many people's submissions that there needs to be research to extend what we know about the seas around our coast and to improve our knowledge of recovery times and the impacts that different types of gear have. We must stress that that should be part of the discussion.

Bertie Armstrong has a tiny comment.

Bertie Armstrong: I point out that the fleet that operates bottom trawls is 35 per cent of the size it was six years ago and that each of the non-governmental organisations that has made a submission has assessed the state of the sea bed as being excellent at present. The effect of trawling has reduced over the past 50 years and to a remarkable extent over the past five years. A much smaller fleet is operating and we are presented with an environment that is regarded as reasonable.

The Convener: We could still do with knowing more about different types of activities. I did not mean to make a conclusive point about research; I just think that we need a bit more information.

Bertie Armstrong: Absolutely. Nigel Mills described a very specialist activity, which is not general bottom trawling—it sounded like razor-clam dredging.

The Convener: I suppose he was describing different types of activity. One of the core issues is how we manage conflicts, which came up in that last discussion about how measures are used. I am not trying to close the discussion, but I want to move on to Richard Lochhead, who will kick off a new topic.

Richard Lochhead: Climate change will have an impact on Scotland's seas. We have a vision of how traditional industries have used our seas around Scotland's coasts. Debates about new sectors continue, whether they focus on wildlife, tourism or renewable energy. The big backdrop to all that is the impact that climate change will have on our seas, which we can predict to only a small extent. I invite contributions about what the biggest impacts will be on Scotland's relationship with our waters as a result of climate change.

The Convener: That is a big challenge. Lloyd Austin from Scottish Environment LINK happens to be next on the list of participants. Would you like to answer that question or make some other comment?

Lloyd Austin: I will make some other comments, and while I do so, I will try to think of something to say in response to Richard Lochhead's question.

The Convener: Perhaps other people will warm up for the climate change question.

Lloyd Austin: You asked about the key issues earlier, so I will comment on the big picture. I kick off by extolling the outstanding marine environment that we have in Scotland—I agree with Bertie Armstrong about the assessment of the environmental quality of the seas. I also agree that lots of key economic activities are important and must be sustained, and that fishing is one of those.

The diversity of witnesses here today illustrates the number of activities and therefore the increase in the number of potential conflicts among users and between users and the environment. Those potential conflicts could get worse through climate change and new activities and as the environment changes in response to climate change. It is important that we have a good legislative and policy framework that is informed by proper knowledge from research to address how we will manage those conflicts. We have the beginnings of that: we have a vision in the marine and coastal strategy and, in sea fisheries and inshore fisheries, we have the work of the sea fisheries advisory group as well as the new inshore fisheries groups that are being set up—which will replace the forums—for responsible fishermen, scientists, environmentalists and Government bodies to work together to address the conflicts and management measures. We very much support, and will work with, those bodies. What is needed to support the work and to deliver the vision in the marine and coastal strategy is a much better-integrated legislative and policy framework that enables the bodies and people who must

work together to put in place properly the relevant mechanisms to address the conflicts. The absence of such an integrated legislative framework is the key issue that is being addressed at UK level, but a gap exists within the devolved responsibilities, which the advisory group that was established by the minister is considering. The decision on what that gap is and how it can be filled, both in terms of research needs and legislative responses, is the key issue for the next year or two.

The Convener: Does anyone wish to respond to Richard Lochhead's question or to Lloyd Austin's comments? I say in response to Lloyd Austin that his points are partly why we are conducting an inquiry. We are conscious that there are big marine issues to address. Although a UK marine bill is coming through the system, the committee wanted to take a short time to explore some of the issues from a Scottish perspective. There is obviously an issue about the governance of the fisheries beyond the 12-mile limit, but there are other issues about integrated legislation that we will have to look at. Does anyone want to answer Richard Lochhead's question about climate change?

15:00

Michael Scott: I will have a go, although I suspect that others know much more about climate change than I do.

In the light of the predictions that have been made about increasing storminess, I suspect that the major impact of climate change will be on humans who live around the seas rather than on inhabitants of the sea. I think that a significant battle will take place between the land and the sea and that the already dynamic interface between them along the coast will become much more dynamic. As a result, important terrestrial habitats that are strongly influenced by the sea, and culturally important habitats such as the machair, will be particularly at risk.

On marine biodiversity, species will move; indeed, evidence exists that certain species are already doing so. The sea is a continuum, so species have somewhere to move to. Therefore, marine diversity is not a particular problem. By contrast, an Arctic bird that lives on the top of a mountain cannot climb any higher once it has run out of mountain. I suspect that marine biodiversity represents less of a problem than terrestrial biodiversity does. However, that takes us back to a point that the convener made: knowledge is incredibly important. Our understanding of the sea is still fairly superficial compared with our terrestrial understanding, so it is important that relevant knowledge be acquired quickly so that we can understand the changes.

The committee may or may not want to return to the issue of protected areas. It is important to consider such areas as a network rather than to consider them in isolation, and to ensure that a mechanism exists for plugging gaps so that coherent stepping stones exist along which species can move. Species' problems will vary greatly. Some marine species are naturally highly dispersive and will probably not encounter problems, but some species disperse in a very limited area and are much more likely to encounter problems—we can probably begin to predict which species will have problems. However, I do not believe that the dynamics of ecosystems in the sea will be a huge problem. That said, we must carefully consider people who live around the coasts and use the sea.

Ben Hadfield: I will make two points. I represent the farmed salmon industry in Scotland, which has concerns about climate change. The industry represents about £300 million per annum to Scotland. One concern is the risk that is posed to our biomass of fish in the water by the potential increase in the frequency of algal blooms and the intensity of jellyfish swarms.

Feed sustainability is another concern. The Scottish salmon industry has made great strides forward in efficiently using feed and in the raw materials that go into it. Improvement is still required, but the numbers of wild fish that are captured from sustainable fisheries are decreasing year on year. Climate change poses the risk of more intense and frequent el Niño events, which could mean volatility for feed fisheries.

Mark Carcas: Does anyone have any information on the impact of a rise in the sea level? Dramatic projections have been made about what will happen if the Greenland ice sheet melts, which is clearly a concern. There could be much bigger impacts south of the border.

Professor Ritchie: No one from the Scottish Environment Protection Agency, which has carried out extensive studies into that matter, is here to give evidence.

A research contract bid is out at the moment from a group called SNIFFER—the Scotland and Northern Ireland Forum for Environmental Research—which is asking for research funding claims to examine specific aspects of sea-level change around the coast of Scotland. A lot is going on, but from my perspective we must be careful about extrapolating figures worldwide from international statistics. We should also not ignore the fact that, with the isostatic rebound of the Scottish coastline, areas of Scotland are still rising and will continue to rise, so there might be a net fall in sea level in some parts of Scotland. We have to be very careful about overgeneralising.

The Convener: Mark Brough, our clerk, has just pointed out to me that SEPA will be represented in one of our future panels of witnesses, so we will be able to come back to that point.

Professor Shimmield: Climate change is relevant to and underpins everything that is happening in the marine environment. Michael Scott's point about its impact on the human side is probably the most obvious. From a scientific perspective, what is particularly important is not so much that change is occurring—change has always happened in climate dynamics—but the rate of change.

Although we can readily understand the rate of change through observable physical changes in ecology or storminess, for example, it is much harder to understand the rate of change in other areas. I can give one example that relates to the question of algal blooms. There is some evidence that the amount of nitrate in the deep north Atlantic that spills up on to the Scottish west coast shelves will dramatically increase as a consequence of circulation and changing climate scenarios. That amount of nitrate will far outweigh anything that SEPA tries to do about run-off through the water framework directive. The balance between natural systems and what is happening from man's influence through climate change is a real challenge.

To answer questions of climate change in a Scottish context, we need to improve our modelling capability and to resolve the impact of climate change at scales that are relevant to our planning and to the industries and users of the sea. That is a major challenge. Work is going on to improve the modelling context all the time, but we are limited by the data that we can feed into the models. That was solved in the meteorological world many years ago with increased networks of observing systems so that there is now a way of assimilating the measurements of the atmosphere into the models, with predictions appearing as the weather forecast on television. We need to be able to do the same in the marine environment, but at the moment Scotland is completely bereft of an observing system for coastal waters in order to do that.

The question relates to the rate of change, what measurements we need to make, and why we need the modelling capacity that will be necessary to see how changes affect the industries and users of the sea.

The Convener: A few members have been provoked to speak.

Mr Brocklebank: That response was fascinating. I wonder whether our academics could have a tilt at giving us some answers on one particular species: cod. I have heard anecdotally that cod have removed themselves from Scottish waters, going north and west because the waters are colder up there. Certainly, I have seen lots of cod landed in Iceland in relatively recent times. However, in answer to a question from Richard Lochhead, the minister said in a debate before Christmas that there was no scientific evidence for cod moving northwards. Who is right? Is it the fishermen who say that that is what is happening, or the scientists who say that there is no scientific evidence?

Professor Ritchie: Mr Brocklebank was looking me straight in the eye.

The Convener: We have you down as a scientist.

Professor Ritchie: I am not a biologist; I am a coastal geomorphologist and I work on physical processes, but I am sure that others could have a go at that question.

Professor Shimmield: I am aware of the report from the Fisheries Research Services, which shows the complexity of the issue. We know that the main plankton groups that the cod feed on have moved north. The so-called continuous plankton recorder survey over the past three decades has shown a northward migration of some of the key species that form part of the food chain for juvenile cod, and indeed the spawning ground areas seem to have moved too. That evidence comes from the fishermen.

We also know that some of the plankton that form the natural food for the cod have some temperature dependence. However, how the connectivity of that works in practice is still strongly debated. The recent evidence from the Fisheries Research Services, which I believe is based on the catch data from the North sea in the past two years, shows little movement of those class groups of cod northwards. However, the plankton that form part of their feed have definitely moved northwards.

Mr Brocklebank: The jury is still out—okay.

Richard Lochhead: Professor Shimmield, you made a point that stood out. You said that Scotland is bereft of an observing system in our marine environment to consider the potential impact of climate change. Will you elaborate on that alarming comment? Will you compare Scotland with other countries? Do other marine nations understand better the potential impact of climate change on their marine environments?

Professor Shimmield: The observing system that we are calling for involves automated systems in the sea to measure factors such as the temperature, salinity, nutrient levels and perhaps even plankton levels. Other nations have invested quite heavily in such observing systems. The

closest to us is Ireland, which is even considering a deepwater observing system as well as systems in its coastal waters. In the European Community, the Dutch, Germans and French—particularly the French in the Mediterranean sea—have sophisticated monitoring systems in place.

In UK waters, the best example of monitoring occurs in Liverpool bay and stretches out into the Irish sea. That is the only existing system; it has been operational for about five years. There are plans to increase the number of observatories. One good way of maintaining observation is to use ships that regularly transit a route—ferries are a good example. Instruments could be put on ferries that sail the same route to monitor continuously the temperature and other water conditions.

All that requires investment and the scientific groups throughout Scotland, in universities and in the FRS, are arguing strongly for investment in such technology; it exists, so using it is largely a question of manpower and finance. Development is needed in the modelling capacity that I have talked about—how we get the data into models that are of sufficient resolution and how we make operational decisions based on that information. At the moment, we have no observations even to help refine the models.

Richard Lochhead: In Ireland, who provided the investment? Do we know roughly how much investment is required?

Professor Shimmield: Investment was provided through the creation of the Irish Marine Institute and through the Department of Communications, Marine and Natural Resources in Ireland. I would have to check the figures, but several million pounds is probably required for such an observing system. That figure is a relatively small proportion of the gross economic product that comes from the marine environment.

Richard Fairbairns: I will speak as a marine operator and on behalf of Wild Scotland's marine operator membership. The amount of work that marine operators do is not generally realised. Our business depends totally on the sustainability of the wildlife in our seas. That is an important aspect of Scotland's income. I have the figures here—members probably have them, too—which show that such income is rising rapidly annually. That depends on our species.

As operators, we must be aware of what is going on all the time. At the moment, vast and very quick species changes are happening. For example, for six months of the year, every year, we used to have 95 per cent sighting of whales, which was probably a higher figure than that anywhere else in the world. That figure has gone down to under 50 per cent in the past two years, which is a tremendous shift. That is just one example.

My main point is that we have a volunteer force out there that studies the seas and the wildlife in them. Every day, many people now make accurate recordings of sightings and behavioural performance and carry out hydrophone work and plankton trawling in regular spots. That could be useful information, but nobody takes much notice of it. A volunteer force with a lot of knowledge is out there daily, collecting a lot of data.

15:15

The Convener: That point is well made. The issue of research and information comes up in a host of the witnesses' submissions and in many others. Issues arise about how we collect the research and what information we are trying to collect. As people already collect information, issues clearly arise about how it can be pulled together and used.

Nigel Mills: In Orkney, we have an environmental unit in the port, which is unusual. One of our biggest problems is the validation of data. It is fine to have data, but they need to be qualified. It is sometimes difficult to give data that are not qualified to a scientific community.

I will mention one or two other issues that have been raised. For many years when I served at sea, we collected data for the Met Office on salinity and sea temperatures and made other observations. However, that work was not often required round the UK coast. We would often collect data in the Pacific, Atlantic and Indian oceans, but the Met Office was not so interested in the UK coast. I am not sure whether that is still the case, but local ferries and boats could be given kits and could provide qualified data.

Nowadays, port authorities do not build a pier based on the chart data and sea level rises of today; we take into account at least a metre of sea level rise for piers with a lifetime of 30 or 40 years. If we are going to build a new pier or adjust an existing port facility, we assume a sea level rise of at least a metre in its lifetime. That is a practical application.

Most of the erosion or changing of our coastline is monitored and addressed by local authorities, but there does not appear to be a representative from Scotland's local authorities at today's meeting, although perhaps I am wrong. Local authorities are responsible for that work and carry the cost of it. If we are talking about the effects on local communities of the changing physical environment of the coastline, it is important that a representative of the local authorities should be present. The local authority in Orkney has active technical and planning departments that look into coastal activities.

The Convener: We will hear from the Convention of Scottish Local Authorities next week. You are absolutely right about that matter. As I said at the start of the meeting, we have a significant group of witnesses round the table today, but we have several other evidence sessions to come. That is the kind of question that we can store and take up with the witnesses in future weeks.

Mr Ruskell: I will pick up on Michael Scott's comments about protected sites around Scotland. I ask him and Lloyd Austin—and perhaps others, if they want to speak—what they see as the major impacts on those protected sites. We talked about climate change, but many communities are worried about other impacts, such as the proposed ship-to-ship oil transfers in the Firth of Forth and the effects of the current licensing round for oil exploration, which has been raised as an issue in Wales, but is also an issue off the coast of Scotland, in the Moray firth. Those are just two of the impacts that could affect the integrity of the protected sites, which are important not only in their own right, but for eco-tourism, which Richard Lochhead mentioned. That is a big issue in the Firth of Forth, where tourism figures have gone up specifically because of boat trips to the Bass rock and the Isle of May. I want to get a feel for what you see as the main impacts on the important network of protected sites in Scotland.

Michael Scott: I will start, as the question was fired at me. The marine protected sites that we have at present are those that Europe expected us to create. That expectation has been extremely useful and has undoubtedly concentrated our minds on how to set about the management of the sites. However, it is worth noting that the sites are not fully protected marine areas—they were established to protect specific interests. That can be both a strength and a limitation.

It may be more important for colleagues from SNH to comment on this, but I think that we are just beginning to learn how to protect sites. The management of biodiversity is very much a new area. Sites were set up with local management groups in mind; it is not possible to manage any part of the marine environment without the support, understanding and co-operation—volunteered or, if necessary, enforced—of all the users of that marine environment.

The biggest threat to sites is our inability to take a holistic view of their management. We do not yet have adequate management mechanisms in place. There are pressures on all the sites, but the pressures are relatively minor; otherwise, the sites would not have been sufficiently interesting to meet the criteria for selection in the first place. However, that is not to say that pressures requiring careful consideration could not come along in future. For example, the threat from oil discharges in a special protection area for birds would have to be considered very carefully. However, I do not have a complete answer to that.

The Convener: Okay—but that was a pretty good start at an answer. Lloyd Austin wanted to come in next, after which we will hear from Dominic Counsell.

Lloyd Austin: I would like to say two things. First, Richard Lochhead raised the issue of climate change, and lots of people have made important points about our need to understand climate change and research it. People have given various examples of species moving, showing that the situation is constantly changing. Part of our response to climate change will be renewable energy, and there will be enormous opportunities at sea. Because that will bring another big user into the marine environment, conflict with existing users could arise, as could environmental issues. We will require the means to manage that.

Salmon farming has been mentioned. It should be said that climate change will create opportunities for new species. Those opportunities might be positive for the economy, but there could be associated environmental problems. We will have to manage the process and plan for it. There will have to be a planning system and a network of protected areas.

The second point that I wanted to raise concerned the effect on the sea that would result from the impact of climate change on the land. As weather gets stormier, there could be serious run-off from the land into the sea. An increase in the sea level and in storminess could lead to more frequent and more serious coastal flooding. We will therefore have to consider the management of flood defences on the coast—perhaps considering opportunities for managed realignment, for the creation of soft habitats, and for better defences in urban areas.

Those are the sorts of marine and coastal environment issues that climate change will lead us to consider. I include coastal issues because the line between the marine environment and the land will be important.

Mark Ruskell asked about protected sites. The simple answer is that all uses of the sea can have an impact on protected sites or protected interests. The important thing is to have a process by which those uses can be judged against the interests for which protected areas have been set up and a mechanism by which the relevant authorities can determine at what level that use is benign and at what level it might have an impact. In the case of the Firth of Forth, it is self-evident that the uses do not have a minor impact; they have the potential to

be devastating, which is why they need to be assessed properly.

It is important to stress that a marine protected area is not a no-take zone or a no-use zone. It is possible for most of the uses, particularly, as Michael Scott said, where they have been benign in the past, to continue and for new uses that are assessed as benign to proceed. Too often, there is confusion as people interpret the term "marine protected area" as "no-take zone". We have to be careful that that does not happen.

Special management measures might be needed to prevent, control or manage activities that are not benign and which could have an impact. Getting such mechanisms in place is the important thing. The ship-to-ship oil transfer case has shown up the inadequacy of the current regulatory framework in as much as the transposition of the habitats directive appears to be inadequate to provide for a proper, public assessment to be made. The legislative framework to make the assessment and put the management measures in place is important.

The Convener: That will be our second focus, after the break this afternoon. The committee will be coming back to the ship-to-ship oil transfer issue. We agreed that we would consider the petition on it at a future meeting, which we expect to be in early February.

I invite Dominic Counsell from SNH to follow up on the protected areas issue that Mark Ruskell kicked off with and Michael Scott developed.

Dominic Counsell: I echo the points that Michael Scott and Lloyd Austin made. The question was about the main pressures on the existing sites. It is important to acknowledge that a wide range of sites for a wide range of features of interest, with a wide range of conservation objectives, are listed in the annexes to the European directives. It is difficult to generalise about the pressures on the sites, which include development, pollution, habitat damage and the presence of non-native species. There is a wide range of pressures in different places. The mandate in each case is to maintain the condition of the site in the state in which it was at the time of designation. The important point is whether other features that are not within the designated areas are also sensitive and need protection. Perhaps we should investigate in more detail, either now or after the break, whether a planning system or something like it can deliver some such protection.

Rob Gibson: We watched a film about the management of the area around north Northumberland and the south-east of Scotland. The talk was that in that European marine area, the monitoring bodies—English Nature and SNH—would check the quality of the diversity of life and try to correct the problems that arose. On protected areas, we have to consider the bigger issue that our impact on the seas and the biodiversity of the species in it is not easy to change in the short term; it will take a long while to achieve it. Are we saying that we have to concentrate on a network of protected areas or are we going to consider the possibility of making decisions about species management around a large part of the coast of Scotland in a wider sense? Are we going to be able to make decisions about stock regeneration and increasing biodiversity after it has been lost? Only 20 years ago, we had cod and haddock in the Minch, as well as prawns. Now we have only prawns—there are virtually none of the other two species. In that sense, the biodiversity that has been lost in the Minch is enormous. Can we do anything outside the small protected areas that we are discussing to change the balance? If we are talking about a national policy, it is that area where we need to focus some of our attention.

15:30

The Convener: That is quite a good point to finish on. Our briefings from the Scottish Parliament information centre discuss the work that has been done by the advisory group, and some issues have been raised in that regard.

We have talked a bit about the fact that the fishing industry has become smaller and more responsive; about the importance of the leisure and wildlife industries; and about the common theme of the gaps in our knowledge about the marine environment. There has not been a big distinction drawn between the coastal marine environment and the marine environment further out, but there is a sense that there is an issue there. There are potentially opportunities to fill some of those gaps. Research is already being carried out, but I have picked up on the issue that there is a lack of overall co-ordination.

There is then the issue of the impact of potential and existing activities. What do we know about how activities interact with one another and how they leave the marine environment? How long do we need to allow the marine environment to recover from certain types of activity? There are a lot of questions there. Climate change is being put on to the agenda in relation to potential sea level rises, flood defence and biodiversity.

Those issues take us nicely into a discussion about how we should manage the environment. We have raised a lot of issues about conflict and about the activities that need to take place in the seas, including fishing, leisure, renewable energy generation and other economic activities. How do we manage those activities? What is the right structure?

I will leave it there. I will now allow people to have a quick networking session of 10 to 15 minutes. After that, I will call the meeting back to order and we will then move on to the next issue, which is about the kind of management and governance structures that we need.

15:32

Meeting suspended.

15:51

On resuming—

The Convener: I reconvene the meeting, as I want to crack on. I am more than happy for people to hang around at the end of the meeting if they want to do a bit of networking or to follow up some of the issues, but I am keen to get going on the second half of our discussion, in which we hope to focus on governance issues.

How is the marine environment around us managed? A wide range of regulatory systems are in place at the moment, and some of the witnesses commented on that in their submissions. There are also a host of initiatives, strategies and projects that aim to improve management, and some of the witnesses will be involved in some of them. Some of the witnesses commented in their submissions that we need more certainty, but other people want less prescriptive approaches. There is a real debate about what kind of governance people want. We are keen to know what limitations in the current regime, or regimes, make life difficult for the witnesses and what we should be looking for to enable us to fulfil our objective of managing the marine environment better than we do at the moment. Those are some core issues.

Eleanor Scott: My question is probably initially for Lloyd Austin—at least, it was prompted by something in the Scottish Environment LINK submission. The submission says, on marine planning, that

"The current sectoral approach … does not allow an overview of … cumulative impacts".

I ask him to expand on that and to give an example of the cumulative impacts that he is talking about and the difficulties of considering holistically things that belong in different sectors. Then, if he has time, I ask him to tell us how to deal with that issue.

The Convener: I will keep Lloyd Austin's answer pretty short, because he has been in the discussion several times. However, he is a good person to start answering that question.

Lloyd Austin: There is a key issue with cumulative impact. Small things, on their own, may have little impact on the environment or other users. However, if they multiply considerably, additionality means that, all together, they can come to have a significant impact.

An example of that happening in the coastal environment is land reclamation of intertidal habitats such as mud flats and salt marshes. Often small areas are involved—half an acre here and there all round an estuary may be reclaimed for industrial use of one type or another. Each reclamation on its own has very little impact but, over many years, lots of reclamation means that more than half—in some estuaries, two thirds—of the intertidal habitat can be lost. That has happened in some estuaries in Scotland and elsewhere in the UK.

The difficulty is predicting what other impacts are around. That is a difficulty on land as much as anywhere else, but we are getting better at predicting them on land with processes such as strategic environmental assessment. We need to apply such tools at sea.

For instance, there are lots of different types of activity in the Firth of Forth, so whichever authority is responsible for ship-to-ship operations also has to take into account the other activities that are going on in the Forth that are controlled by other bodies. Eleanor Scott's point is that if we are assessing the impact of many different types of development that are controlled by different bodies, how do we get those bodies to work together?

The Convener: Does anyone else want to come in on this topic? Ben Hadfield indicated that he wanted to speak, but I want to get the discussion moving on.

Ben Hadfield: I wanted to speak on a separate matter, so you can come back to me.

The Convener: We will come back to it. Does Dominic Counsell want to talk about this issue?

Dominic Counsell: No—sorry. I was going to talk about the points that you raised earlier about planning.

The Convener: Okay. Does anyone else want to talk about cumulative impact before we move on? Is this an area in which Bill Ritchie is interested, for coastal management issues?

Professor Ritchie: Lloyd Austin's answer was good. Cumulative impact is a quite difficult issue, but it is very important. From memory, I understand that all large environmental impact assessment statements now have to have a section on cumulative impacts. Of course, different activities can have cumulative impacts in terms of the habitat, the species or the particular feature in question. I am pleased that the issue was brought up. Lloyd Austin is right, in that if we do not think

about cumulative impacts, we tend to look at little things in isolation. They might not mean very much in themselves, but when they are added up they become important. It is an important point that tends not to be applied to the marine environment; it is more of a coastal or terrestrial concept at the moment.

The Convener: As no one wants to say anything more about cumulative impacts, we will log the issue. I thank Eleanor Scott for raising it.

Ben Hadfield: My question is for MSPs and for anyone else around the table. The Scottish Salmon Producers Organisation broadly supports marine conservation areas, but we require to see some of the detail. Our members operate in several sites of special scientific interest and designated special areas of conservation. Although it is quite an accolade to be allowed to farm fish and operate in those areas, there can be an associated high level of bureaucracy and costs, with delays and additional work. Is there support for a type of conservation area that would strive both to maintain and enhance good ecological status and to preserve the existing economic operations in an area? We recognise that bureaucracy is required if such operations are to be allowed in conservation areas, and that the people operating within an SAC should have to justify their operations, but the bureaucracy should be persuaded to move as quickly as possible.

The Convener: Does any colleague at the table want to have a go at answering that question? It is one of the issues about the type of marine spatial planning that we want and what we want it to look like. A few of those who made submissions said that marine spatial planning is necessary but that they do not want bureaucracy. One of our challenges is how to design a system that delivers a big objective such as marine spatial planning without being bureaucratic.

David Wilkie has not said anything. Would you like to take the stage?

David Wilkie: I have been very quiet. One of the frustrating things for small and medium-sized enterprises, which probably make up the biggest group of employers on the coastal fringe, is that they tend to have to go through the same hoops and levels of bureaucracy as someone who is building a nuclear power station—I accept that that might be an exaggeration. The British Marine Federation Scotland is very keen that marine spatial planning either results in a separate body or co-ordinates some of the existing bodies, so that the procedures are much simpler and more cost effective. It is quite easy for a small business to spend as much on bureaucracy as it wants to spend on the actual project.

The Convener: So the system needs to be designed with that in mind. Dominic Counsell wanted to come in on that broad area.

16:00

Dominic Counsell: You opened the session by saying that there is a proliferation of sectoral arrangements and asked what we need to do to make them work more efficiently. Before the break, quite a lot was said about issues such as protection. It is important to move the debate on to a discussion of sustainable use and to emphasise that we can learn lessons from the way in which matters have been organised in the terrestrial environment so that we can set things up more effectively for the marine environment.

It is necessary to build consensus among economic and environmental perspectives and to provide clarity about management before rushing out to look for lots more to protect. A planning system and marine protected areas are intimately linked, so we should talk about them together. A planning system might be very effective in guiding activities away from sensitive areas, which could supersede the need for some protected areas. In addition, if the protection that is required is brought forward in the context of the planning system, all the players have the opportunity to put their cards on the table. It is much more likely that stakeholders will accept one another's point of view if they are all involved in the process through a planning system.

One of the lessons that we have learned is that such an approach would require resources. Such a system, which would be linked to the ability to consent to different activities, would be bureaucratic in some way, but I would have thought that it could streamline activities more effectively. That should bring all sorts of benefits for many sectors.

Nigel Mills: The British Ports Association's view is that the land-sea interface at ports means that they are generators of income and social stability—they handle international trade. Any planning system must recognise that, and therefore in any planning of a marine bill, we must be conscious of how it affects international trade. One example relates to the transmission of non-endemic species in ballast water, which is a priority in the Firth of Forth debate, but is also important in Orkney.

The International Marine Organisation ballast water regulations will not, for the majority of large ocean-going ships, be effective until 2016 because the industry has not developed the technology to deal with the reduction and removal of the animals in ballast water. However, when we go through a process of regulation with SNH, whether in relation

to the habitats directive, the water framework directive, strategic environmental assessment or Natura 2000 sites, SNH is able to force on the port or the area its interpretation of what it calls a "significant effect"—"significant" in this case is any effect—on local ecosystems, irrespective of whether the area is a Natura 2000 site or is in the proximity of such a site. I am trying to get round to saying that we can take ourselves out of the market for this trade, which is important to the UK and Scotland, by not recognising the way in which international regulations for ships are working. It is fine to work in a small area of the coast, but if we stop trade, the port dies, and the local economy in the area can also die. Planning must take into account a much bigger picture. Any planning framework must recognise that the marine environment is not any single area: it is dynamic. That is why the BPA is in favour of marine spatial planning and emphasises the importance of taking a holistic overview.

Issues such as ballast water management arise because ecosystems move naturally, but we do not want to introduce species from, for example, South America or the Gulf of Mexico into the Firth of Forth or Orkney. I am losing my train of thought, but my point is that planning must recognise the bigger picture. It should certainly not be about looking at one area of the coast; it must examine trade-related issues.

Mr Ruskell: I want to raise the related issue of the structures of governance. Many of the harbour authorities across the UK have been privatised, which makes the UK model—such as Forth Ports—very different to the model in other areas of the world with which we trade. In other areas of the world, separate public regulatory bodies undertake the work that is outwith the supplier and user functions of a harbour authority.

Is the privatised model that we have in the UK working effectively? At the moment in the UK, there is effectively a private monopoly in both the regulatory and private sector functions of our harbour authorities. As I said, in other parts of the world, there is a separation between the regulatory and private sector functions of such authorities and competition between users.

Nigel Mills: Orkney Islands Council is a municipal port, which means that the local authority is the port authority. For any initiative that I undertake, I need local member support, but, even so, I still need to work through SNH, SEPA and so forth. As a municipal port authority, we still have to use the statutory regulatory bodies as if we were a private port.

For example, in dealing with the issue of ballast water, I have to make an application to SEPA, undertake a pre-scoping exercise and a scoping exercise, after which—under the SEA regime—I may have to do a full environmental assessment. Irrespective of what the local council asks for, I still have to go through all of that. Regardless of the governance of the port—whether it is a trust port, a private port or a municipal port—the regulatory system applies to all of us. In Scotland, SEPA and SNH are my primary regulators.

Mr Ruskell: Regardless of whether the regulatory functions are held by a trust, a harbour authority or a public regulator, surely a conflict of interest is still involved. If a self-regulating body is involved in raising revenue—regardless of whether the body is publicly or privately controlled—surely a conflict of interest is involved. I am thinking of the situation in the Firth of Forth.

Nigel Mills: Without getting into the specifics of that argument, SNH has the power to disagree with me if, as a self-regulating port authority, I were to say that I saw no significant effect in whatever development. SNH could require me to undertake an EA, which in itself is a public consultation. I do not believe that a port authority is able completely to ignore the regulator.

The Convener: The debate on that issue could probably run for some time. However, the final area that I want to explore is the question of the weaknesses in the existing system. On reading all the evidence, I was struck by how many different types of organisations there are around the country. All have different roles and ways in which they respond to the existing situation, which is effectively one of filling the gap, given that there is no national, coherent system of marine spatial planning.

The issues for us are to work out what the strengths and weaknesses of the existing system are; examine the ways in which different organisations do things; and debate the principles that would underpin a new set of structures. We could draw an analogy with local authorities making their own planning decisions—they had to establish processes through which decisions were properly made. We have to think through the principles as well as the detail of how a new structure should be established.

Richard Lochhead: I want to pick up on what you have just said, and on what Nigel Mills said prior to the point that Mark Ruskell made. The way in which our marine environment in Scotland is governed is a dog's breakfast. More than 85 acts of Parliament apply to our waters, and numerous authorities—some are in Scotland, others are in London and yet more are at European Union level—oversee the regulation of our waters. In terms of the complexities that we are discussing, everyone seems to agree that we need to streamline the system.

Given that this is a Scottish Parliament inquiry into the marine environment, the committee has to ask to what extent the remit of the Scottish Parliament should be extended in order to streamline the governance of our marine environment.

Ross Finnie was in the newspapers a few days ago, raising an issue that was similar to one that I raised in a debate in the Parliament, when I said that some powers at UK level should be transferred to Scotland, to help us streamline the governance of the marine environment in Scotland. The livelihoods of many people around this table are connected with the marine environment. Does the current complexity need to be addressed? What is the Scottish Parliament's role in streamlining the governance of the marine environment?

The Convener: Does any panel member have thoughts on those points?

Richard Fairbairns: I have very direct thoughts, which I will illustrate with an example. The Maritime and Coastguard Agency oversees the sea-worthiness of our vessels and considers safety at sea. The agency is good and rigorous and we all do as we are told. Last summer, at the beginning of the season, we bought a vessel on the south coast, on condition that it was passed by the MCA as a class 6 vessel. The vessel was passed and given full certification, but when we brought it up to Glasgow the MCA in Glasgow wanted to look over it. The MCA in Glasgow prevented us from operating for six weeks, because the vessel did not meet its standards. That sort of fracture hits small businesses very badly—that single incident upset our takings for the whole year. The fractured nature of our bureaucracy greatly hinders business. Scotland needs to get its teeth into and take control of many aspects of the issue, as Richard Lochhead said.

Bertie Armstrong: Two points seem to be emerging from the discussion. The view that, in general, streamlining is necessary might have more to do with a sense of neatness than it has to do with anything else. By its nature the environment is complicated, I am afraid, and each regulation has evolved in response to something. As two other panel members said, an industry that comprises mostly small and medium-sized enterprises—indeed, mostly enterprises that would be defined as small—will find it very difficult to cope with and contribute to another layer of bureaucracy. Therefore a marine environment inquiry needs to ensure that it is addressing a definite problem rather than contributing to a general feeling that a neater and more streamlined approach might be better. That is not to offer solutions but to make a plea for a theme of the inquiry to be that we ensure that we are considering problems that need to be solved, rather than coming up with neat solutions to problems that do not exist. At least one panel member made that point.

Mr Brocklebank: Another dilemma that fish catchers must cope with is that they must deal with legislation that emanates not only from the Scottish Parliament but from the European Parliament. The Scottish Parliament has responsibility for the sea up to 12 nautical miles from the coast, but beyond that limit Scottish fisheries—and fisheries in the rest of the UK and the European Union—are controlled from Brussels. It is extremely difficult to work out how we secure a strategic and proactive fisheries management system, given that not only do fish not respect territorial boundaries—as the Minister for Environment and Rural Development says—but they do not know when they have swum into waters beyond the 12 nautical mile limit. We can devise a fully integrated and coherent system of managing fish stocks correctly up to the 12 nautical mile limit, but beyond that limit someone else is in charge, which makes life extremely difficult.

16:15

Mark Carcas: The process of gaining consents for offshore renewables projects is certainly complex, but the existing approach is well defined. The route to streamlining the approach can be taken by building on what we have rather than by throwing the baby out with the bath water. In relation to marine protected areas, I was encouraged to hear Lloyd Austin say that there is no desire to have no-use zones. In the context of discussions about particular zones for development, it is important that technologies that might be deployed in individual areas should be considered on their merits.

The priorities for the framework for managing Scotland's marine environment should focus on the objective of meeting our sustainable development targets. Climate change will have a large impact on our marine environment, so renewable technologies, which can play a strong part in mitigating the effects of climate change, should be given priority. The global impact of the new and emerging industries such as wave and tidal energy could be tremendously significant. Sometimes, people say that what we do in Scotland will not have much impact globally, but renewable technologies have global application, and if we can make them happen in Scotland, the impact could be huge.

The point about consistency between Government departments and the devolved Administrations is a key point. The Crown Estate is involved because it manages the sea bed. It is

the landlord, in effect, and people have to meet its criteria in order to proceed with a project. On top of that, there are all the other consent processes. We recommend that a single consent for marine energy developments should be delivered by the responsible Scottish Executive department. In addition, we need a well-informed process in which all stakeholders play a part. Any activity will conflict with other users, so we should consider creating a suitable forum to enable the various Executive departments and agencies to contribute to appropriate planning guidance for marine energy developers, grid operators and the relevant local planning and environmental agencies. We need a flexible and adaptive system of marine spatial planning that safeguards the marine environment.

It is also worth highlighting and supporting the moves that the Scottish Executive is making. The strategic environmental assessment that is being done around Scottish waters is considering wave and tidal power developments and it will inform the renewable energy guidance and the planning guidance. That work is drawing to a conclusion.

This is a tangential point, but we also have the oil and gas sector, which I presume falls within the scope of today's discussion. There might be some big developments west of Shetland, and those will clearly have an impact as well. Linked to all those points is the fact that, to move forward with developments and make things happen, we need the grid capacity.

Ben Hadfield: There is potential for cost reductions and streamlining. When a consent is issued for a fish farm, monitoring the sea bed and any residues that emanate from the site is required. After a period of time, the footprint reaches a form of equilibrium with the environment, so monitoring in perpetuity is relatively pointless, provided that nothing changes on the farm. The data set that is created by Scottish salmon farmers is probably one of the largest benthic data sets in Scotland. Marine Harvest, for example, spends about £150,000 a year purely on grab samples.

In the interest of streamlining, I would like the requirement for that monitoring to be removed in cases where the data are not necessary and we have established that equilibrium has been reached. The relevant bodies should streamline and focus the monitoring requirement so that we develop our understanding of specific areas a bit further.

Lloyd Austin: I agree with Bertie Armstrong that it is a good idea to ensure that we solve problems through streamlining the bureaucracy. In our previous discussions—and certainly in the advisory group that the minister set up—we established that there is a problem, particularly in relation to the number of bits of legislation. Richard Lochhead mentioned that earlier.

There are also the big-picture questions around marine spatial planning. We should plan where would and would not be good places to have different activities, using a single authority that gives a single consent of the type that Max Carcas spoke about. That follows on from the idea that appropriate stakeholder engagement should be statutory. Most stakeholders agree that there is a positive way forward through those big-picture questions, that things can be made simpler while problems of conflict and confusion can be solved and that the amount of bureaucracy that we have at the moment can be reduced.

From the point of view of business users, specialist regulators such as SEPA might still need to exist, but the single marine spatial planning organisation, whatever it is called, could take specialists' advice and build SEPA's concerns into a single consent, rather than businesses themselves having to deal with every single statutory department and regulator. Where a lot of sections of the public sector are involved, businesses might not have to deal with some matters; the public sector itself could organise things so that they were dealt with internally. There is general support for the big-picture stuff about marine spatial planning, which could deliver streamlined, better, more consistent and more predictable outcomes—that is an important aspect for businesses.

Turning to something else that Richard Lochhead said, cross-border concerns will be much more important in marine spatial planning than in terrestrial planning. I refer to all sorts of borders: the border between devolved and reserved matters; the borders between Scottish waters and other waters, whether they are the waters of other parts of the UK or those of other European countries; and the border that I spoke about before, between the land and the sea, and the interactions that take place there.

The marine spatial planning system must be set up in a way that deals with all those cross-sector and cross-border arrangements. I think that the minister's working group is considering those issues, and those who are involved in the discussions that are going on at a UK level are also trying to get to grips with them. The committee has the opportunity to examine those issues and to ascertain whether there is a way forward through creating a simpler system that could allow various interrelationships and liaisons to happen.

Eleanor Scott: Reading a lot of the submissions, we might get the impression that there is quite a lot of bureaucracy already, with a lot of paperwork covering many activities that have

an impact on our marine and coastal environment. I was struck by something that Max Carcas said about the process for marine renewables being relatively straightforward. It might not be straightforward as far as individual applications are concerned, but it is quite clear what people have to do. On land, the process for securing renewable energy developments can be quite fraught.

I wonder if there is more bureaucracy for the marine environment than there is for land. Perhaps our attitude is that that is okay, because there have been restrictions on land use for several hundred years; not all land has been freely available; land has been owned by other people; and there have always been things that people can and cannot do on land, which we accept. On the other hand, until relatively recently the sea was seen as commons, and people could effectively take anything out of and put anything into it that they liked. There is still a natural resistance to anybody telling us what we can and cannot put into or take out of our marine environment. Perhaps we need to get beyond that culturally before we can move forward in other ways. Nowadays, we must have some control over what we do or do not do to our marine environment—to the coastal and sea-bed environment.

This inquiry should be an opportunity not to increase bureaucracy—perhaps not to decrease it, either—but to make all the bureaucracy happen on one common pathway and ensure that all the people who work in that bureaucracy talk to one another. Everything should make sense, and the cumulative impacts that Lloyd Austin discussed earlier ought to be immediately visible.

Maureen Macmillan (Highlands and Islands) (Lab): I will ask about how we can build on what we have. We have talked about a UK or Scottish strategic framework, but we can work from the bottom up. Among local people, local businesses, local users of recreation facilities and the local tourism industry are an immense number of stakeholders who have an interest in the coastal and marine environment. They must participate, too. Work should not just happen at a higher level; it must happen locally.

Local organisations deal with the issues. I am interested in comments on how we might expand on the Scottish coastal forum and the existing coastal partnerships. A huge variety of people are involved in coastal partnerships and they have a huge interest in the marine environment. How do we involve them without the system becoming unwieldy? I throw that out to the panel.

The Convener: I will put that to Lloyd Austin. One way to interpret what he said is to think of one centralised system that is the same throughout Scotland. However, as Maureen Macmillan said, all the different partnerships do different work according to local issues. How can we create a system that melds those two aspects to achieve local involvement and to have the certainty that Max Carcas talked about, so that regardless of where they are, people know what they should do to obtain permission to do something or to take forward an initiative?

Lloyd Austin: If I gave the impression of a centralised system, I did not mean to. Some national and regional coastal planning certainly must take place. To an extent, that will be Government led, although the Government will liaise with stakeholders. The view of the Executive's workshop on marine spatial planning and of the Scottish coastal forum is that the third tier of marine spatial planning will be local.

To an extent, many people envisage that the existing coastal partnerships, such as the Moray Firth Partnership and the Forth Estuary Forum, will take the lead on such local planning arrangements within a national framework. Those partnerships will need better manpower and financial resources and they will need to be empowered, because they will operate within a national statutory system and people will want to engage to have their concerns addressed in the plans that they produce. The vision of marine spatial planning involves a bottom-up process as well as a top-down process. I am not sure, but I think that one of the most expert people in the matter is Graham U'ren, who will give evidence later. The committee might like to ask him about that next week.

The Convener: We absolutely do not have to sort everything out today. Everyone can relax. The meeting is about putting the big issues on the table and allowing committee members to start thinking about the subject.

Dominic Counsell: I will make similar points to Lloyd Austin. A planning system needs to have the hierarchy between the national framework and local delivery. Different structures are in place in different parts of the country. I imagine that a firths initiative that marries the theoretical and the practical would provide a head start on some issues and should mean that a local delivery framework could be put in place, but that may not be needed in parts of the coast where the issues are less acute.

A planning system needs the ability to make things happen and to link to public policy instruments. However, local mechanisms are also needed to foster participation and to ensure that all stakeholders' views feed in. The local approach, as exemplified by the firths in a voluntary format, and the larger framework within which those local initiatives work are part of the same system.

16:30

Rob Gibson: I return to what I said at the end of the first part of the meeting. I am interested in how we will develop priorities. The interlocking of local and national priorities allows a total policy to be created. Measures should not necessarily be imposed on local areas; rather, local priorities should be respected. What views on Scotland's marine environment will we have in the next 20 to 40 years if a big bureaucracy and 85 acts already exist? Can we decide what the priorities are? Doing so would have a big effect on the organisations that are created and the consultations that are carried out.

Professor Ritchie: I want to pick up on a point that was made previously. We have more knowledge and information than people around the table may be aware of. I remind members that phase 2 of the Scottish Executive-sponsored Scottish sustainable marine environment initiative involved three pilot studies, because it was concluded at phase 1 that one size could not fit all for the Scottish coastline. Three distinct areas in Scotland are now addressing the questions that people around the table have asked. I am sorry to be academic, but an awful lot of knowledge is being acquired, and the Executive is funding much of that acquisition. I am surprised that people—

The Convener: I should draw a distinction for clarification. Committee members are not necessarily aware of all the issues that are involved, which is partly why we have invited the Executive to give evidence in a couple of weeks. Ministers have launched initiatives; our job is to scrutinise those initiatives. You probably know much more about those initiatives than committee members do. That is simply a caution.

Professor Ritchie: It is important to realise that Scotland is—surprisingly—ahead of the game with some issues. We should not be too negative. I will backtrack a little to give an example. The first comprehensive survey of Scotland's coastline was carried out in the 1970s, about 10 years before any other country in Europe carried out a comparable survey. Indeed, Scottish Natural Heritage reissued the survey this year. There is a lot of information around. We should not necessarily spend lots of money on more research, initiatives and consultations, because we already have a lot of information.

The Convener: I suppose that the issue is the collation of that information and knowing how to use it.

Professor Ritchie: Of course. Dealing with such matters is the Government's job.

The Convener: That is a good point.

I invite Michael Scott to say something about the broad issue that we are discussing.

Michael Scott: I will try to bring together what Maureen Macmillan and Rob Gibson have said. In the past three or four years, I have taken part in the same interesting discussion remarkably frequently in a wide variety of fora—colleagues around the table will also have taken part in the same discussion. It is important for the committee to focus on what the Parliament can achieve, given the different levels—the Scottish, UK, European and international levels—that deal with the governance of the sea. A lot of marine legislation applies beyond Europe. The local end and the building up of a partnership approach, which has worked effectively around Scotland, are important. Indeed, Scotland currently leads Europe in that respect. I hope that the committee will concentrate on such matters.

The advisory group on marine and coastal strategy is still debating the Scottish coastal forum's proposal for a system of coastal partnerships. In fact, at the advisory group's previous meeting we were almost asked to reach a decision on future funding, which none of us thought we had been invited on to that group to make a decision on. It would be appropriate for the committee to consider that matter.

At the other end, Europe is engaging with marine issues by developing a marine strategy and a proposal for a marine strategy directive. On many such issues, it is possible for Scotland to exert an influence at a European level. For example, Scotland has had a significant input into thinking about what good environmental status means. Given that the maritime green paper—which I know another committee has been examining—is being consulted on, Europe is very much in listening mode and we should not underestimate how influential any messages that the Parliament sends out could be at a European level.

To pick up Rob Gibson's point, we need to have a big discussion to decide what our marine ecosystem objectives are for the seas of Scotland. It is likely that a recommendation for such a discussion will come out of the final report from the advisory group on marine and coastal strategy. That is the debate that Rob Gibson is talking about. It would be incredibly useful if the committee were to have that debate and if its legacy report were to contain some suggestions on how to drive forward thinking on marine ecosystem objectives. I hope that shortly the committee will begin to focus on what it would be most useful for it to do. I strongly commend to it the local approach and the broad approach of sea-wide objectives.

The Convener: I suppose that that is within the committee's power, because responses to the consultation on the EU marine strategy are due in by June. The conclusions of the committee's report could be sent to Europe, as we did with the conclusions of the waste management inquiry that we conducted a few years ago. We may want to take up that suggestion.

Maureen Macmillan initiated the discussion. Do you have a clearer sense of where we might take some of the questions?

Maureen Macmillan: Yes. I concur with what Michael Scott said, but the fact that not all the stakeholders who could join the various partnerships and fora have done so makes me anxious. The agreement is very much one that people need to opt into. I encourage stakeholders who have not taken part in the partnerships or the coastal fora to get involved.

The Convener: Bertie Armstrong and Lloyd Austin have comments.

Bertie Armstrong: On the subject of the discussion that has just been had, it is important to remain clear—and I am sure that the committee will be—about what we mean by marine spatial planning.

Locals would be keen to participate in planning based on intercoastal zones. By locals, I mean people who are near the zones in question and people who have businesses in those waters. No one is local to 200 miles north of Shetland apart from Shetlanders. The considerations that one might bring to bear on offshore areas are very different from those that one might bring to bear on inshore areas. We should not get confused by thinking that a template that fits one will necessarily fit t'other.

The Convener: Following on from that, I was struck by a point in one of the papers that one difference between land-based planning and marine spatial planning is the three-dimensional effect. At sea, different activities can take place on the same Ordnance Survey grid map, but at different levels. The fact that there is greater complexity in the marine environment than there is on land needs to be factored in.

Bertie Armstrong: I urge the committee to be extremely cautious about transferring principles that apply to terrestrial planning to the marine environment. A spectacular example of that was the quote about there being similarities between the two contexts, in that we have housing quotas and fish quotas. My response to that is that the only similarity is that they both start with Q. Such a read-over presents dangers.

The Convener: I hope that we will be a bit more sophisticated than that.

Bertie Armstrong: I am sure that you will be.

The Convener: You have given us a good warning.

Maureen Macmillan: I know that at least one oil company is involved in a coastal partnership. Although the company does not have any installations close to shore, it still feels that it is useful to be involved.

Lloyd Austin: I endorse what Bertie Armstrong said about the difference between local planning and what I say is regional planning, which is the tiered level that is envisaged.

In response to Maureen Macmillan's question, the desire to get involved in local partnerships would be greater and getting involved would be much more attractive if the local partnerships were meaningful—in other words, if their plans and decisions were part of a statutory marine spatial planning system, rather than the partnerships being a talking shop. At the moment, there is no incentive to get involved, because even if everyone agrees, the Executive or the local authority can ignore an agreed outcome the next minute. If partnerships were part of a statutory system, there would be much more incentive to get involved.

On Rob Gibson's question about priorities, I very much endorse what Michael Scott said about marine ecosystem objectives being what should guide our priorities. The key thing that AGMACS is discussing is whether or not we should have marine ecosystem objectives, representations on which were received from its conservation work stream. The Department for Environment, Food and Rural Affairs is considering a similar measure at UK level. If that comes about in Scotland, the key thing that will determine our priorities will be the extent to which the current state differs from our desired state. If we have a series of objectives and information about what things are like at the moment, our priority will be those areas where there is the biggest difference between what we have at the moment and where we want to get to.

The Convener: I do not necessarily want to give Lloyd Austin the last word, but his point about working out what our current state is and what our desired state is, and how we can get from one to the other, is a good place to stop this discussion.

We have made a good opening to our marine inquiry. In the second half of our discussion this afternoon, we have talked about the fact that there is a system in place for renewables and that it broadly works. There are some good partnerships around the country that have come together, not because they were forced to do so, but because of local interest groups, although there are issues about bureaucracy. If I am interpreting people's comments correctly, I think that the view is that, if

we are going to have a bureaucracy to make decisions, it must be coherent and not fractured, and there must be clarity and consistency. We need to address issues about borders, but we should not be too negative. On some issues, we may actually be ahead of other countries, so we must play to our strengths and think about the gaps and priorities that Rob Gibson mentioned, and about how we can marry together the local input that Maureen Macmillan talked about with the consistent, coherent national framework to which Lloyd Austin referred.

I thank all participants for their contributions this afternoon. The committee will be taking evidence from a panel next week to follow up on today's discussions.

Before everyone starts to move and to shift their papers, I ask them to bear with me for a few minutes. We have another item on our agenda, and it would be a great help if people could stay in their seats while we go through that business.

Subordinate Legislation

Conservation of Salmon (Collection of Statistics) (Scotland) Regulations 2006 (SSI 2006/572)

Plant Protection Products (Scotland) Amendment (No 3) Regulations 2006 (SSI 2006/576)

Environmental Impact Assessment (Agriculture) (Scotland) Regulations 2006 (SSI 2006/582)

Sheep and Goats (Identification and Traceability) (Scotland) Amendment (No 2) Regulations 2006 (SSI 2006/594)

Forestry Commission Byelaws 1982 Revocation (Scotland) Byelaws 2007 (draft)

16:43

The Convener: I hope that I am right in judging colleagues' interest in the last few issues—I received no lobbying representations before the meeting. We have four negative instruments to consider. I shall read out the titles of the instruments, and the witnesses will see how the committee works. The instruments are the Conservation of Salmon (Collection of Statistics) (Scotland) Regulations 2006, the Plant Protection Products (Scotland) Amendment (No 3) Regulations 2006, the Environmental Impact Assessment (Agriculture) (Scotland) Regulations 2006 and the Sheep and Goats (Identification and Traceability) (Scotland) Amendment (No 2) Regulations 2006. We also have to consider a set of draft byelaws—the Forestry Commission Byelaws 1982 Revocation (Scotland) Byelaws 2007—that are subject to annulment as a negative instrument.

The Subordinate Legislation Committee has commented on SSI 2006/572 and SSI 2006/582, and relevant extracts from its reports are in our papers. We also have correspondence from the Minister for Environment and Rural Development in response to the questions that we raised about the Plant Protection Products (Scotland) Amendment (No 3) Regulations 2006 at our meeting on 19 December. I think that the response is pretty helpful and fills in some of the gaps that I know Eleanor Scott in particular was keen to raise.

Do members have any comments on the instruments, having considered them in advance of the meeting?

Members: No.

The Convener: It is helpful to get extra information on the Plant Protection Products (Scotland) Amendment (No 3) Regulations 2006, as we wanted to know a bit more about it before we were happy to let it go through.

If there are no other questions or comments, are members content with the instruments and happy to make no recommendation to the Parliament?

Members *indicated agreement*.

The Convener: The next meeting will be on 17 January at 10 am in this committee room, when we shall take further evidence for our marine environment inquiry.

I remind colleagues that stage 2 consideration of the Aquaculture and Fisheries (Scotland) Bill will take place at our meeting on 24 January. I have decided that the target for that meeting will be to complete parts 1 and 2 of the bill—sections 1 to 19—so amendments to those sections must be lodged by 12 noon on Friday 19 January. The target for the meeting the following week, on 31 January, will be to complete the bill. That is the target; it is up to the committee whether we achieve it. The deadline for lodging amendments to the remainder of the bill, including the schedule, will be 12 noon on Friday 26 January. I hope that that is clear.

Meeting closed at 16:45.

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