



Science and Technology Committee

Oral evidence: [Marine science follow-up](#), HC 700

Monday 14 October 2013

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Members present: Andrew Miller (Chair); Stephen Metcalfe; Stephen Mosley

Questions 1-60

Witnesses: **Simon Reddy**, Executive Secretary, Global Ocean Commission, and **Professor Alex Rogers**, Professor in Conservation Biology at the Department of Zoology, University of Oxford, gave evidence.

Chair: Gentlemen, welcome. We are a very select committee this afternoon. There are so many other things going on in the House that some of my colleagues have been required to do other things. Can I first invite you, just for the record, to introduce yourselves?

Simon Reddy: Thank you very much for inviting us here today. My name is Simon Reddy. I am the Executive Secretary of the Global Ocean Commission.

Professor Rogers: I am Professor Alex Rogers from the Department of Zoology, University of Oxford. I advise the Global Ocean Commission on scientific issues, as well as carrying out research on marine biology.

Q1 Chair: What is the role of the commission, and what do you hope to achieve over, say, the next year?

Simon Reddy: The commission was set up as an independent entity based at Somerville College at Oxford. We are assessing the drivers of decline in the ocean and working to come up with a set of recommendations or findings in order to reverse that decline. The mandate of the commission is focused on overfishing, habitat and biodiversity loss, monitoring of compliance and governance. We have had two meetings of the commission and our third is in Oxford in November, so we are now at the stage of looking at areas where we feel interventions could be made and assessing what options the commission could recommend. The idea is to report in May of next year with a view to feeding into the UN GA in 2014.

Q2 Chair: What was the reason behind setting it up? Was it simply the failure of Rio+20 to deal with matters to do with the oceans?

Simon Reddy: It is not just Rio+20. I worked on ocean issues in the UN 10 or 15 years ago. Ocean issues tend to be addressed at a very low committee level; they are not getting to the top table to be discussed. That has been ongoing. The idea of the commission is to give some of the issues a lift to ensure that we can come up with a to-do list for leaders to put on the top table.

Why now? We are finding that, first, there is a lot more scientific evidence showing us the importance of the ocean as part of the fundamental Earth system, and that the decline is increasing and we need to start addressing this. Secondly, with the technological advancement in terms of access to the ocean, this is obviously increasing. We are getting increased technological advancement and possible exploitation at the same time as the science is beginning to show us that there are fundamental issues that need to be addressed in terms of decline and the role that the oceans play in the planetary system, which, science is showing us, is far greater than we had previously thought.

Q3 Chair: The various interest groups concerned with the ocean—it should be all of us—range from industries such as transport, mining and fishing to the world of climate measurement and a whole range of people like that. Is the commission approaching the task purely from a conservationist perspective?

Simon Reddy: No. First, the commission is consulting with NGOs, businesses and Governments. Secondly, we never came into this with the view that the oceans should become some sort of marine park. We recognise that with 3 billion people wanting to become middle class, there is pressure on the resource in the oceans. The issue is how do you exploit that resource in a way that is effective, efficient and sustainable? At the moment the gaps we have mean that that exploitation could continue in a wild west-type scenario, where people are not looking properly at the implications in terms of the health of the oceans. For us, it is about trying to understand the system better and to ensure that the processes and governance are in place so that there is sustainable exploitation, and knowing where the boundaries are that you should not be crossing.

Chair: Before we move on, I warn our witnesses that there is the possibility of a couple of Divisions this afternoon. If we hear the bell go off, we will suspend the sitting for enough time for the team to go and vote and get back.

Q4 Stephen Metcalfe: In your report the commission identified a number of gaps in the way the oceans are governed. Which of those do you believe is the most serious? You said you had a to-do list. How is that list prioritised? Are there things that you think are more important and those that are of lesser priority?

Simon Reddy: We are in that process at the moment. We have only had two meetings of the commission, and we are going through that process. We have identified some of the key drivers of decline. Number one is demand for resource; number two is overfishing, which is both an effect and cause; then habitat and biodiversity loss, and lack of governance. Of those drivers of decline, we are looking at the areas where we need to intervene to reverse it. Governance is very important because, at the end of the day, it is multilateral governance that hopefully will bring nations together to focus on what it is we need to do.

We have looked a lot at UNCLOS, which has been described as a constitution for the oceans. It is a great achievement in terms of multilateral governance, so it is not something we want to unpick, but, as with all constitutions, it needs to evolve. UNCLOS was initiated in the '60s, negotiated in the '70s and signed in the '80s. Since then the science and technology has progressed. When UNCLOS was originally set up, the focus was on EEZs and on freedom of navigation. At that time little was known about the high seas and the technology did not allow access, so it was not high on the agenda. Now that is becoming a reality, we like to think in terms of the need to evolve UNCLOS.

To give just a few examples, UNCLOS has no formal mechanism or current system of governance to protect biodiversity; there is no mechanism to enforce regulations or establish any high seas marine reserves; there is insufficient geographical coverage; and management is too limited to a fisheries perspective. What management there is is not systematic; it does not look at it from a systems perspective but from an individual species or resource perspective. Also there are no penalties for non-compliance. These would be top-line gaps in the governance system.

If you look at a map of the governance system, there are many different agencies all having a little piece but with no apparent overall co-ordination. Clearly, you get situations whereby there are different parts, whether it be regional fisheries management organisations or UN agencies; they are each looking at a little bit, but no one is trying to look at it from a systems perspective. That is the crucial point: we need to look at oceans from an oceans perspective, not with a piecemeal, bit-by-bit approach.

Q5 Stephen Metcalfe: Having said that you want to see UNCLOS evolve to perhaps address some of those, it sounds like you have some significant challenges. You gave a whole list of stuff that is not in there. Is it capable of being evolved in that way? Is there enough structure to bolt all those things on to, or are you going to have to unpick it and start again?

Simon Reddy: I am not sure that unpicking it is an option. Is it a political reality to try to unpick UNCLOS? There is a large question mark over that. The commission realises that it will not come up with all the answers by May of next year. The key thing we want to do is to raise some of the issues so that they are on the table and are starting to be debated. We see the commission as phase one. First, let's flag up what the problems are, what the science is, what the drivers of decline are and what interventions we need to look at. We are not going to resolve this in a short period, but we are also looking at what we call short, medium and long-term measures. What measures could we start implementing now that will have an effect on some issues, such as IUU fishing or marine protected areas? What are the longer term measures that we need to start looking at? Obviously the modernising of the governance.

Q6 Stephen Metcalfe: Are you going to be suggesting who might take responsibility for these various gaps?

Simon Reddy: Not at this stage. At the moment people are still at the stage of not really understanding where the gaps are.

Q7 Stephen Metcalfe: At this stage it is really a question of getting a clear map of the gaps, understanding them and then worrying about what to do next.

Simon Reddy: And how we are going to start to address them. The commission is first about raising the alarm bells as to what some of the issues are, coming up with a set of recommendations and then building a coalition for change. That is the initial objective of the commission.

Q8 Stephen Metcalfe: You said there would be a list of recommendations, although you are not going to say who should take those on, so the recommendations would be more about what needs to happen rather than who should take responsibility for it.

Simon Reddy: It is about some of the key drivers. You can look at some of the commissions of the past—for example, the Suarez commission. We did a survey of a number of commissions and what worked and did not work. A lot of commissions carry on for an awfully long time and come up with 40, 50 or 60 recommendations. That does not mean that some of those commissions were not extremely good; they were extremely good, but they tend to produce a wonderful report that sits on a shelf. We are looking to come up with not 40 or 50 recommendations, but eight to 10 recommendations on real top-level stuff that, hopefully, we can get on to the top table so that the debate starts happening. Trying to be all things to everyone at this stage and to come up with a game plan that will sort everything out has been shown in the past to not always work.

Professor Rogers: There are obvious gaps. There are large areas of the ocean where fishing is basically unregulated. Regional fisheries management organisations do not cover the whole of the oceans, and where they exist there are significant problems in their operation. We have to recognise that some of these issues go way beyond the immediately obvious. Illegal fishing, for example, often comes with a raft of other issues, including transnational crime and problems associated with human rights and safety. Many of these vessels are pretty unseaworthy.

Looking at a new implementing agreement for UNCLOS might be the type of direction in which the recommendations could go to bring about change. I do not think renegotiating any of the existing UNCLOS implementing agreements would be on the table, but certainly a new implementing agreement might be.

Q9 Stephen Metcalfe: It would be an additional layer on top of what is already there.

Professor Rogers: Yes. This has been shown to work previously. There were implementing agreements associated with establishing the International Seabed Authority, for example, and also the 1995 UN fish stocks agreement, which dealt with trans-boundary stocks.

Q10 Stephen Mosley: You described some of the problems associated with overfishing, but what action can be taken to try to reduce it?

Simon Reddy: On IUU fishing especially, we are also trying to look at some of the economics behind it. Lack of governance is usually economic loss. How can we try to improve governance that will also benefit us economically? If you take illegal, unregulated and unreported fishing as a good example, lost revenue is calculated to be between 13 billion and 27 billion a year. One in every five fish is caught illegally. As to what you can do to address this, there is a combination of measures. The things that the commission is looking at—they are not yet our recommendations because we have not reached agreement—include the need for vessel monitoring. At the moment fishing vessels are exempt from carrying transponders. If you come across a merchant vessel on the sea, you can track it; you can put in its unique identification number and it will tell you its name. There is an iPhone app called Vessel Tracker; if you put in the name of the vessel, you will find out who it belongs to, where it is coming from, where it is going and what it is carrying. Fishing vessels are currently exempt from carrying unique vessel identifiers or transponders. We just call it ship tracking. First, we need to agree internationally and accept that fishing vessels should not be exempt. There should be a mandatory requirement that fishing vessels carry transponders and trackers.

Secondly, there are issues over where fish is going, if it is being caught illegally. There is an agreement called the ports state measures agreement. It has been agreed but has never come into force because not enough countries have ratified it. There is an opportunity to see that agreement successfully ratified. It gives powers to ports to seize cargoes coming in that they know to be illegal. You can also look at market measures to track fish, and market measures to ensure that the market takes responsibility for knowing where their fish is coming from and who is catching it. Those are just three examples in relation to IUU fishing.

Professor Rogers: There are some other outstanding issues as well in terms of over-capacity of fishing fleets related to the size of resource they are fishing. There is still a major issue with too many fishing boats chasing too few fish. Coupled with that, there is the problem of capacity-enhancing subsidies. I believe there is a vote in the EU over the next week related to subsidies. These are particularly damaging, especially if they are fuel subsidies because they allow fishing fleets to pursue stocks that have been fished down to the point where normally they would no longer be profitable to fish.

Another thing that would make a huge difference to fisheries management is more transparency about how decisions are made and where the interests are in terms of vessel owners and so on. This has been identified as a particular issue with regional fisheries management organisations.

Q11 Stephen Mosley: I have a bit of evidence in front of me from the UN Food and Agriculture Organization, who say that one of the root causes of IUU fishing is lack of effective flag state control. You have not mentioned the flagging of vessels within the list of problems that you highlighted. I am particularly interested in flagging not so much on the fishing side but the cruise ship side. I have had situations with British passengers and crew on non-first world flagged vessels—to put it that way. Would the flagging of fishing vessels have any impact?

Simon Reddy: Flagging is an issue in terms of transparency. You end up with situations whereby someone in country A can register a vessel in country C with a holding company

in another country and you never understand who the owner of that vessel is. In terms of transparency of flagging, if you do not know where the fishing vessels are going and you cannot track where they are fishing; irrespective of who they are flagged to, you still cannot control it. It is a combination of many measures, not just one.

Q12 Chair: Listening to some of your answers, I fully understand how difficult it is going to be to get the buy-in we need from international bodies and nation states. When we were looking at marine protection zones in coastal waters we saw there was enormous difficulty in getting all the stakeholders to agree to what the experts said was necessary in the area. When it comes to the high seas, you get a slightly different dynamic. There was an event about three weeks ago when HMS Lancaster boarded and “arrested” a vessel in the Caribbean that was carrying cocaine. The legal basis for that exercise is questionable, but the public acceptance in this country and most western countries is very clear. We do not have that in the field of conservation; there is not the same degree of buy-in, so how is the concept of marine protected areas in the high seas going to be enforced?

Simon Reddy: There are two things. One is that how you frame the debate is important in terms of why we should be addressing some of these issues. Putting aside marine protected areas for one minute, when we look at overfishing we need to move away from it being just about a fishing discussion. It is actually a food security discussion. When we look at large-scale habitat and biodiversity loss, where MPAs would play a role in protecting, it is about threats to global resilience. If we do not have protected areas and biodiversity, it undermines our resilience to things like climate change. As we are finding out, the oceans produce over 50% of our oxygen and they absorb over 25% of our CO₂ emissions. The IPCC recently said that they absorbed over 90% of the temperature increases associated with climate change, and that system will be more resilient the more protected it is. The more we undermine it by exploitation, the weaker that system becomes.

When we look at lack of effective monitoring compliance, this is a global security issue, because the vessels that carry out IUU fishing are the same ones that also carry arms and, in some cases, terrorists, and trade people and drugs. When we look at deficiencies in global governance, it is an equity and resource conflict issue, because the countries that are exploiting the high seas are predominantly the developed ones; the countries not exploiting them are the ones that do not have the technological know-how or investment to be able to get there. It is first about framing the debate. If we look at how we frame that debate differently, hopefully there will be a greater will to address some of these issues rather than just looking at it from a fisheries perspective.

Q13 Chair: I can understand it in terms of issues like people trafficking or piracy off Somalia. Eventually, there was general acceptance that it had to stop and fairly heavyweight measures were taken by some navies, I suspect—I am not an expert in this field—with some questionable legal basis. That was accepted. When it comes to environmental issues, I cannot see us being anywhere near having the buy-in that would result in enforcement occurring.

Simon Reddy: Do you mean in terms of the resources to be able to police the areas?

Q14 Chair: The belief that it is going to be necessary for that kind of action, in the absence of a United Nations treaty. Historically, if you look at areas like telecoms, it is difficult to enforce treaty breaches. When it comes to things that people cannot see and touch immediately, it is very difficult to get enforcement. How is it going to happen? What process do you see occurring?

Simon Reddy: I see what you are getting at. The problem the high seas have suffered from is that if it is out of sight it is out of mind. Why should people care about what happens there when they are already dealing with issues such as poverty and social issues at home? A lot of that relates to what the science is showing us. If the oceans are producing over 50% of our oxygen and they are under threat from the issues we have discussed, is there not an imperative for nation states to take action to ensure that that biodiversity is protected?

Q15 Chair: You and I might agree with that, but there is very little evidence of it actually happening. Which countries are in the lead in driving forward this conservation message?

Simon Reddy: The US is very interested in these areas; Europe is as well. A lot of the OECD countries have a high profile in this area. A lot of the G77 countries are concerned about this area. There seems to be general consensus. I do not see it as quite that uphill struggle. There is rising awareness that we need to take dramatic action because of the consequences of not doing so. It is not just about the environment. There are fundamental economic issues. If our oceans are acidifying and our oxygen supply is threatened, these issues have to be addressed.

Professor Rogers: Science is now moving towards showing us the value of the goods and services provided by the wider oceans, in particular the high seas. This area of science has lagged way behind similar work being done on terrestrial ecosystems and coastal ecosystems. It is key to some of these arguments. As an example, we are currently looking at the role of the high seas in the carbon cycle. That shows that, in locking away carbon, the high seas as a whole are markedly more important than the coastal zones.

Q16 Chair: This I understand, but—correct me if I am wrong—even in areas like the Antarctic, where there is a significant scientific presence from a wide range of countries, the Commission for the Conservation of Antarctic Marine Living Resources has found it difficult to resolve the issue of marine protected areas, as I understand it. If it cannot happen in places where there is that high level of science engagement, how is it going to happen in the middle of the Indian ocean, or some obscure place where few people have any obvious engagement?

Professor Rogers: The Antarctic is a very interesting case where we are seeing almost a clash of philosophies on how the oceans should be used. Essentially, should we simply mine the oceans for as many resources as we can get with little heed to what is left for the future, or should we try to manage those resources and the goods and services that the ocean provides in a way that is sustainable and will be there for future generations? That is the argument we have to make. There is no doubt that there are states there who at the moment do not accept that argument. We are seeing a relatively small number of people or interests, mainly from the developed world, who are gaining advantage through the status quo. There are major issues of inequity as well as unsustainability.

Q17 Chair: It comes back to why I made the observation about HMS Lancaster. In that case, whether it be China, Russia, the US or Europe, major powers accept that it is not a good idea to have cocaine trafficked in our communities. You get instant buy-in without any regulatory structure, but we have not got it for these conservation issues.

Professor Rogers: This partially arises from lack of recognition of the value of what the oceans are providing for us both directly in terms of food and food security but also in the wider context of the earth system.

Simon Reddy: One analogy you could draw here is with the campaign on CFCs and the ozone hole. The consequences of inaction for the oceans are as serious as they were in relation to CFCs and ozone. There is a need to create that urgency by communicating what we are up against in terms of ocean decline so we get that reaction. I share your scepticism about how to do that, but we have had instances in the past whereby the penny has dropped in terms of the seriousness of the situation and you find that multilateral governance pulls together and comes up with a solution. This is what we need to achieve in relation to the oceans, because it is that serious.

Q18 Stephen Metcalfe: Can I change tack slightly and talk a little about deep-sea mining, which we have been discussing in Parliament relatively recently? What are the commission's main concerns about deep-sea mining? Do you see it having as great an impact perhaps as the other areas you have been discussing?

Simon Reddy: On deep-sea mining there are two things to say. One is that we are not carrying it out on a large scale at the moment. We have certainly moved ahead in the last 10 to 15 years. Technology has advanced; accessibility is there. You have seen a massive increase of licences in the last few years, though there is some scepticism as to whether those licences would be economically viable in the current circumstances.

Having said that, we see some gaps in the mining codes. There are concerns over best practice and whether that is being used within potential mining operations; there are gaps in the pollution regime. We have very strict pollution regimes within some of our regional forums, such as the OSPAR Commission or the London Dumping Convention. Should that be replicated and applied to activities beneath the sea? One of the key areas of concern is strategic and environmental planning in relation to mining. The tailings from seabed mining will clearly be enormous. What is the impact of that, and how do you look at that from a spatial planning and strategic environmental perspective to ensure you minimise the damage? Finally, one area we are interested in is whether there should be a liability fund for compensation for any damage that does occur. Those were four key areas.

Professor Rogers: One of the important things to recognise is that there are several different types of mining that can potentially take place: seabed massive sulphides; cobalt crusts and seamounts; polymetallic nodules; and phosphate deposits. All those types of mining have different impacts; they are geographically different areas and need to be considered individually. Rather than taking a simple finding from one of these areas and applying it to all, they have to be treated separately.

The other issue is multi-sectoral management of activities in the oceans. We have seen cases where areas that have been protected from, say, deep-sea fishing are now subject to mining licensing. There is a lack of cross-talk between sectors, and that is a major problem in protecting the functioning of the ocean in more general terms.

Q19 Stephen Metcalfe: Taking your point about the four separate types of mining, do you think a balance can be struck that allows mining to take place in a sustainable way while addressing some of the concerns about conservation of the seabed?

Professor Rogers: These mining operations have to be taken almost on an individual basis, but at the moment I see no reason why, if it is done in a precautionary way and we make sure that best practice is followed and that the right deposits are looked at in terms of sourcing these minerals, it cannot take place. You have to balance these marine mining operations with the ecological and human impacts of mining on land as well, which might be the types of choice you are faced with. These are all very complex questions, but I am hopeful that we can manage these mining operations in a sustainable way.

We should also be looking at things like set-aside. If we mine one area, can we compensate for that by setting aside another? Even restoration may be the type of thing we consider following mining operations. All the things we do in the best types of terrestrial mining are principles we should really be applying to marine mining.

Q20 Stephen Metcalfe: Following on from that, do you think that the Bill passed by Parliament in September will effectively regulate the UK's involvement in deep-sea mining?

Simon Reddy: We haven't looked at it. Our focus is very much on the high seas and the international area. As a commission we have not looked at the specifics relating to the national jurisdiction.

Q21 Stephen Metcalfe: Is it something that you would look at, or is it just not on your agenda at the moment?

Simon Reddy: It is not on our agenda at the moment.

Q22 Stephen Mosley: The recent IPCC fifth assessment report confirmed that climate change is having an impact on the oceans. Does that report go as far as confirming your assessment that climate change is a major threat to ocean life?

Professor Rogers: I do not think there is any doubt about that at all. For example, at the moment I am looking at evidence that warming is having an influence on marine life. It is pretty clear that almost everywhere where there are observations we are seeing major shifts in the distribution of populations of marine organisms. In the late 1970s we saw almost the crossing of the tipping point with the first instances of mass bleaching of coral reefs in the tropics. That is now recognised as the prime threat to that ecosystem. When you couple that with the threat of ocean acidification and hypoxia in the oceans, without a doubt those are major threats, one, to biodiversity in that they have a direct impact on species, but, two, to the functioning of marine ecosystems as well.

Q23 Stephen Mosley: You also say that the biological consequences of climate change on the oceans are hard to predict with confidence. Are your concerns speculation, or are they backed up by scientific evidence?

Professor Rogers: Not at all. This is one area where we are already seeing dramatic impacts. For example, in 1997-98 a single warming event killed 16% of the world's coral reefs. That was a single unusual warming event which occurred possibly because of the superimposition of climate warming with natural variation in the oceans. We are seeing a broadening of what is called the oxygen minimum zone in parts of the ocean. That has already been demonstrated to compress the habitat of fast-moving marine fish like marlin. We are starting to see the first effects of acidification in terms of evidence of impacts on shelled fauna.

Chair: Hold that question in your head. We will remind you of it. We will suspend the sitting until 18 minutes past. I think there will be only one vote.

Sitting suspended for a Division in the House.

On resuming—

Chair: Professor Rogers, you were responding to Stephen Mosley's question about the IPCC. I believe he has some follow-up questions.

Q24 Stephen Mosley: Throughout the course of this session we have heard about several threats to ocean life. How important is climate change compared with the others we have discussed?

Professor Rogers: Up till now the largest cause of extinctions in marine ecosystems has been over-exploitation. Climate change is probably going to overtake that, coupled with other human impacts. All of these impacts interact in some way. In terms of warming of the oceans, models predict that we will see a shift of species pole-wards, and extinctions taking place mainly in the tropics and polar ecosystems as a result of changing environmental conditions. As a paper two or three weeks ago indicated, present observations are that species shifts in distribution are broadly following what the models are predicting.

Along with that, we are likely to see major shifts in things like ocean primary productivity. This is the result of warming of the oceans causing increased stratification—in other words, a decline of the mixing of nutrient-rich deep water with shallower waters, which basically encourages primary production by algae. We are already seeing changes in the timing of events in marine ecosystems and so on. Along with that is the threat of ocean acidification. We are starting to see the impacts of this on shelled fauna, particularly in polar ecosystems. They are particularly vulnerable to this effect because colder water absorbs more CO₂ and therefore acidifies quicker than warmer water. As species are moving away from warm water and shifting pole-wards they are faced with increasingly acidic or less base water coming from the poles, as it were. It is almost a squeezing of environmental envelopes.

In terms of direct threats to marine ecosystems, coral reefs are probably the best understood in terms of climate change effects. We have already seen mass mortality in coral reef ecosystems as a result of warming. Mass coral bleaching, which has been the cause of this mortality, is predicted to become an annual event in most regions where coral reefs occur by the middle or end of the century. At that point we believe those ecosystems will cease to exist as we know them today.

I do not think there is any doubt at all that climate change is a major threat to species and entire communities and ecosystems in the marine environment. It is not so much about the absolute levels of CO₂ that we are seeing; it is the rate of CO₂ increase that is a particular problem. Levels of CO₂ now are probably higher than they have been for the last 15 million years, perhaps as long as 34 million years, but the rate of CO₂ increase may be the highest that has been seen on Earth for perhaps 300 million years. That gives you an idea of how the current climate change event is so different from past events.

Q25 Chair: Before we move to the final point I want to raise, help me with the science. Following your point about CO₂ being absorbed more rapidly in colder waters, does that mean that corals in colder waters are under greater threat, or is it a different set of issues?

Professor Rogers: It is a different set of organisms. We have modelled the impact of acidification on cold water corals which occur in deep water. That predicts a major impact on the available habitat for those particular corals. It will have a potential impact on those systems. The problem for us as scientists is that so little is understood about the distribution of these cold water coral ecosystems. In particular, I am talking about deep-water coral reef frameworks and other coral habitats.

Q26 Chair: The broader perception of coral reefs is that they live in a tropical environment, but we are talking about all corals being at risk, and possibly even greater risk for some of the deeper ones in colder waters.

Professor Rogers: For deeper corals we have looked specifically at the threat of acidification. Shallow water corals are affected potentially by acidification and certainly by warming, in that excessively warm water causes shallow water corals to eject their symbionts, which are algae that live in their tissues and provide the corals with all their nutrients. Deep water corals do not have those, because they live in absolute darkness, so they are not faced with the same combination of threats.

Q27 Chair: Moving on to what happens next, as I understand it you are expecting to publish recommendations just before the UN begins its discussions on high seas biodiversity in 2014. What are you hoping to gain from the UN in terms of response?

Simon Reddy: Rio+20 set a time line that worked well for the commission in terms of the debate on biodiversity, beyond national jurisdictions as one area that the commission can feed into. The sustainable development goals are also another area the commission is looking at. What was clear to us coming out of Rio+20 was that there certainly seems to be more appetite than we have seen in the past for nation states to address issues related to the oceans. The commission sees it in different phases. Many commissions are funded

only until the day they report. Our commission will be funded past that, so while we will report in May or June 2014, we have funding to take forward some of the recommendations, using our commissioners to push that agenda and the direct dialogue we have already had with the UN secretary-general in relation to the recommendations, and trying to work with industry, NGOs, business and countries to raise the profile around some of the recommendations.

Q28 Chair: Is there any hint at all that people are looking at it so seriously that recommendations might be transposed into legislation?

Simon Reddy: After the UN oceans compact, there is an appetite to look at different inputs as to how we address oceans. That is the work the commission has to do. We need a set of recommendations that are politically feasible and people feel they have an appetite for; we need to reach our objective in order to be able to communicate the ocean issues to the top table, so to speak; and then for our commissioners to work with businesses and NGOs to try to create that discussion and debate, obviously with the view to achieve the change that we feel is necessary.

Q29 Chair: You really want to start off by encouraging policymakers to take the matter seriously and then help them towards creating the right framework.

Simon Reddy: Yes. As one of our commissioners put it, in a nutshell the commission is about raising the alarm bell, coming up with pragmatic arguments and building a coalition to make sure those changes happen. It will be a waste of time if it is a report that just sits on a shelf and is forgotten post-May 2014.

Chair: Gentlemen, thank you very much for your attendance this afternoon.

Examination of Witnesses

Witnesses: **Joan Edwards**, Head of Living Seas, The Wildlife Trusts, **Dr Jean-Luc Solandt**, Senior Biodiversity Policy Officer, Marine Conservation Society, and **Liam McAleese**, Member, North Sea Marine Cluster, gave evidence.

Chair: Welcome. I am pleased to say I do not think we are going to be interrupted by any further votes; at least that is the plan, but you can never tell in this place. It would be helpful if you would be kind enough to introduce yourselves.

Liam McAleese: I am Liam McAleese, representing the North Sea Marine Cluster.

Dr Solandt: I am Dr Jean-Luc Solandt, representing the Marine Conservation Society.

Joan Edwards: I am Joan Edwards from The Wildlife Trusts.

Q30 Chair: I welcome you here this afternoon. Some months back, we made a number of recommendations regarding the process for selecting the first set of marine conservation zones, and we waited for a long time to get any real response. Has the selection process progressed at all in the last few months?

Joan Edwards: No. We have not been told when an announcement will be made. During the summer it was hinted that we would get an announcement this week.

Chair: This week?

Joan Edwards: This week. But obviously there has been a reshuffle and we have heard nothing yet. We have been told that perhaps there will be fewer than 31 designated, which is a crying shame, but we have also been told that we are likely to get a timetable for the second tranche, which is very good news.

Q31 Chair: So you were getting closer to the first tranche being identified.

Joan Edwards: When we were going into meetings with DEFRA officials, the atmosphere was that we were going to get an announcement and they would be phoning us soon. They were preparing us for an announcement. It just feels that this week it has gone very cold.

Q32 Chair: What more, if anything, should the Government be doing? Do you think sufficient priority has been given to this issue? Clearly, from your previous answer you don't, but expand a bit.

Joan Edwards: We have been waiting a long time for this. A few of us were involved in lobbying for a marine Bill many years ago. It took a long time to get Royal Assent to the Marine and Coastal Access Act. One of the main objectives of that Bill and Act was to get national marine conservation zones, and we are still waiting. We have been through numerous consultations. We lobbied and got cross-party support for a Bill and then an Act; we got cross-party support for a network of marine protected areas. The whole process seems to be slowing down as we go into the future. We have done a lot of work, collected a huge amount of evidence and involved over a million stakeholders. It just feels that we could do this quite easily and it would not create a lot of cost to industry but would provide it with certainty.

Dr Solandt: It is unfortunate. As time has stretched, the impetus to get the job done, to which Joan has alluded, goes away; it dissipates. Many things are based on momentum, especially hard decisions. Those decisions might have been hard two years ago; they are getting harder with every month that progresses, and they go past the public consciousness at the local level at which there was a form of agreement—not total consensus. What worries us as a sector and perhaps industry, as Joan alluded to, is that as things take a longer time we still do not know what is going to be done. That is not good for UK plc, the marine environment and the nuts and bolts that give us the ecosystem, as Alex Rogers said, to provide the goods and services that we need to persist. It is a crying shame and an indictment of what has happened.

Liam McAleese: Perhaps I may first make a declaration of interest. Although I am representing the North Sea Marine Cluster here today, my company has worked for

DEFRA, Natural England and the MMO on issues that are touched upon in this inquiry. I thought it would be wise to mention that.

To build on what Joan said about uncertainty, I would hope that the forthcoming announcement is very clear and ambitious on a second tranche of MCZs. In its evidence, Cluster said that it particularly wanted to see clarity alongside any announcement as to how management measures would be taken forward. One of the issues about the earlier phases was that not looking at management measures alongside it was a difficulty, and the Committee picked that up in its report.

Q33 Chair: You have seen our report and, I guess, the Government's response to it. What did you think of the Government's response?

Liam McAleese: I noted that the Government agreed with your recommendations on management measures and that they should set out what they are going to do. I have not seen them do that yet. I do not think that has been published.

Q34 Chair: It is not the words but the action you are looking for.

Liam McAleese: Yes.

Q35 Stephen Metcalfe: You have made it pretty clear that you are unhappy with the speed of progress that has been made with the second tranche of MCZs. One of the possible reasons for the delay is that, apparently, the Department fear there may be judicial reviews. Do you think that is a well-founded fear, or are they being overcautious?

Liam McAleese: In short, I do not know. My understanding of judicial review is that it will look not at levels of evidence, for example, but at whether the process has been followed and people have acted reasonably, which I am sure has been the case. I am not quite sure about the reticence.

Dr Solandt: The point is really the one Liam has just made. It is about process. If we wanted a process that involved people in allowing them to be consulted adequately and representatively, all the boxes have been ticked. Evidence might be the reason espoused for delaying many of the sites going forward, but we will never get adequate evidence for some stakeholders; for others we have a huge amount of evidence. For me, it is about political will. I spoke to the director of the Great Barrier Reef Marine Park protected area. They went from 3% no take to 30% no take in a five-year process, which was a very difficult one, but there was a great deal of understanding on the part of the leader of that decision-making process in Parliament at the time that it was for the good of Australia to do this. I feel that link is lacking here.

Joan Edwards: This has probably been the most transparent process in which I have ever been involved in my history of working for marine conservation. The lack of transparency is the final decision, so it could be that some other people might be thinking about judicial review. We might turn round and say, "We have taken part in this process all the way through. We have provided evidence; we have been at every meeting. Why hasn't there been a decision?"

Q36 Stephen Metcalfe: You do not think that the lack of management measures placed beside the proposed MCZs is a potential area for challenge.

Joan Edwards: No, because the Act says that the Secretary of State may designate; it does not say that you must put management into place. I totally agree with my colleagues here that it might have been a good idea to do that, but that is not the wrong process; that is how the Act was written.

Q37 Stephen Metcalfe: During our earlier inquiry The Wildlife Trusts in particular expressed concern that, while there were all these delays, some of the sites were deteriorating, further damage might be done and so on. Do you have any evidence to back up that that is actually happening and they are deteriorating?

Joan Edwards: We have not seen any further evidence, possibly because we do not have the capacity to be out there looking for evidence, but our feeling is that, if people do not know where they are, they will not know they are doing damage. A lot of people in industry want to do the right thing. If they had clarity on where these marine conservation zones were and what they were and were not allowed to do, most people would do the right thing. While they are there, they are our policemen. DEFRA, the MMO, the IFCA and ourselves do not have the capacity to police and manage all these sites, but other stakeholders could help us. This is an opportunity for all of us to work together to make sure we have a healthy marine environment.

Q38 Stephen Metcalfe: Where there have been proposed zones, although no decisions or announcements have been made, is there any evidence that the key stakeholders who are most involved in that local environment are already taking steps to mitigate their impact, or are they just carrying on as if this is a process that is not going to happen?

Dr Solandt: As you might be aware, after 20 years of managing damaging fishing in European marine sites there is a process going forward. It is possibly 20 years too late, but at least it is happening now at the same time as the MCZ process is going forward. Where there has been overlap of designation, the sensible IFCA have taken it upon themselves by their own best management practice to ensure those MCZ beaches are protected at the same time, but unfortunately those are very small sites rather than potentially areas that are vulnerable now. I had a report from colleagues in the eastern Isle of Wight area about a possible scallop jetty in and around a potential MCZ around Bembridge cliffs. You hear of these activities but you do not have confirmation of them because it is very hard to get it. This is a long way offshore. There are potential measures to put local byelaws in place to protect some sites, but we are not achieving a network here.

Q39 Stephen Metcalfe: You want an announcement and want them implemented as soon as possible.

Dr Solandt: Yes. Let's get on with it, for goodness sake.

Q40 Stephen Mosley: So far in the session your focus has been on the UK Government and what is happening in England basically. Can we expand that to include the devolved Administrations of Wales, Scotland and Northern Ireland? In Wales 10 conservation zones were put forward and the last Government rejected all of them; in Scotland at the moment they have put forward some proposals and are consulting on it; and in Northern Ireland they are still at the strategy stage. All three devolved Administrations and the UK Government are taking a different approach. What are the benefits or disadvantages of each of those four approaches? How do they compare?

Joan Edwards: Although it has had its faults, the England bottom-up approach did involve stakeholders and people were involved in the decision-making process. We are stuck with the Government making a decision. In Wales it was top-down and people on the ground did not know that their area was going to become a marine conservation zone, and there was a massive public response. In Wales they have taken a big step backwards because they have gone back to the drawing board. Scotland is a bit of both. They have 33 proposed marine protected areas—their MCZs are called marine protected areas. The consultation is out now. We are very pleased with it, but, similar to all countries, we are trying to get a coherent ecological network of marine protected areas in all parts in the UK. We do not have any marine protected areas for mobile species, so we do not have any for basking sharks or dolphins. We believe that you cannot be ecologically coherent without having sites that are important for them.

Liam McAleese: North Sea Marine Cluster has focused mainly on the process in England and particularly the net gain, so the only observation I would offer is, first, what Joan said about Wales. The good thing in England is that the stakeholder consensus remains. That has not happened in Wales. The other observation is that Scotland has consulted on its approach to marine planning and renewable energy at the same time. I wonder whether people seeing all the issues together may find it easier to respond.

Q41 Stephen Mosley: You say that the North Sea Marine Cluster is focused in England, but you did make comments about the Welsh process, did you not? I know that you have suggested—let's put it that way—that the Welsh Government rejected the marine conservation zones because of economic concerns. Could you expand on that a bit, please?

Liam McAleese: I am not aware that we made that suggestion. It was not in our written evidence, and we have not taken any public position on that—certainly not one that I am aware of.

Q42 Stephen Mosley: I have a quote here from the North Sea Marine Cluster: “But some might surmise that the Welsh Government were also uncomfortable to find themselves in the vanguard on MPAs to the extent that they risked disadvantaging the Welsh marine economy and facing disproportionate costs.”

Liam McAleese: Sorry; my apologies. That quote was from a news update that we circulated. That was just a view as to why the process might have changed in Wales. It was just speculation and commentary rather than a particular position.

Q43 Stephen Mosley: In terms of the UK Government, what can we learn from what is happening in Scotland, Wales and Northern Ireland?

Dr Solandt: I think we can learn that we all came from different starting points. I do not know whether the panel is aware that Wales had protected about 36% of its waters in European marine sites already, whereas England had only protected about 5% or 8%. There were already different starting points and assumptions about what marine protected areas were. It is difficult to communicate new processes which are meant to achieve one end, which is what the UK network is. It appears that three different processes were adopted because of the starting points being different, and they have had varying levels of success. It is unfortunate that Wales has stalled to the point of stopping, but they have a great basis to go from, which is that 36% of their waters are protected under European marine sites. They just need to finish that job to have in place a really good network. That is what they should do.

Q44 Chair: Ms Edwards, can I go back to your comment about the English system being a bottom-up one? It was a bottom-up one that was applied in a variable way around the country, was it not? Can you be more precise and give us an example of where you think really good practice was?

Joan Edwards: The Isles of Scilly would be a very good example. It is much easier because obviously it is a set of islands and everybody knows each other. In the Isles of Scilly the group that determined where the MCZs should be had everybody round the table: offshore renewables and all the different types of fishermen—they did not have a representative of the fishing industry; they had the industry there—and then you had the Nature Conservation people and the Duchy. Everybody was involved in the conversation. I sense that at the end of the day they felt they had made some very difficult decisions but it was something they were willing to back. Where the English process fell down was that, quite often, the fishing industry would be present in a stakeholder meeting but it would be a representative of the industry. It might be somebody in Plymouth who was from Newcastle, so they did not know the local fishermen and therefore did not have that local information.

The lesson we must learn is that, when you are carrying out local stakeholder engagement, you must involve local people and local communities. If we are going to improve the MCZ situation, where there are misunderstandings and you hear people locally saying, “We don’t want one; it’s going to stop us doing what we want,” we have to engage with those local communities and make them realise why MCZs are important and why they should be proud of having one in their local area. I think we have missed that. It has happened in some places and in some places the opposite has happened. For example, in north Devon the local community was very involved in the stakeholder process. They loved their MCZ but it was not in the 31 and they do not understand why. Quite often, The Wildlife Trusts get phone calls from people asking, “What have you done with our MCZ?”

Q45 Chair: You mentioned the Isles of Scilly; we did not go there, but we went to the Fal estuary in Cornwall and met a good cross-section of the stakeholders. There was clearly confusion in the minds of the stakeholders about whether they were going through a genuine consultation, so that when they contributed, “If you do that, it will do this to my interest,”

whether it be racing, sailing, fishing or whatever it might be, they felt they were being told what was going to happen, as distinct from being consulted about it. Was that down to the individuals who were responsible, or was that a flaw in the process?

Joan Edwards: I think it is a mixture of things. In part it was down to some individuals, perhaps a bit of mischief, but at the time the Falmouth MCZ was being discussed there were very sensitive discussions about European marine sites in that area. Two processes were happening at the same time: the MCZ process, which is about stakeholder involvement and people being involved in decisions, and a very top-down process of European marine sites, where you are told what you can and cannot do. They were happening at the same time. I do not blame anybody if they got confused about which system they were in because it is the same place. You could have an MCZ within a European marine site, so it was a very confusing time and it would be very easy to misinterpret what was being said.

Q46 Chair: Turning to the Marine Science Co-ordination Committee, there was a review of its structure in 2012. What do you think of the outcomes of this review? Have you noticed any difference in the way that the MSCC operates today?

Liam McAleese: The MSCC review seemed to pick up the key recommendations of the Committee and also the evidence that was submitted. One of the key recommendations was about an industry representative. That has now happened. The other recommendation was about a closer link between the growth agenda and working with industry on marine science issues. The key recommendation, which is yet to emerge in the public domain, is the development of an implementation plan. That will be absolutely critical to judge how far the MSCC is going to reflect the issues picked up in the review.

Q47 Chair: Has the inclusion of industry representatives had an impact on the North Sea Marine Cluster?

Liam McAleese: It just so happens that the marine industry representative on the MSCC was elected from the Marine Industries Liaison Group. To be clear, he is a colleague who is represented on the North Sea Marine Cluster. It has had an impact. One of the things that the industry representative has been able to bring to the MSCC is to identify areas where there can be closer commercial collaboration. One work strand that is starting to take off is the opportunities associated with marine autonomous vehicles and systems, which have the potential to be both an opportunity for UK industry but also reduce public sector monitoring costs. There has been some work looking at research vessel efficiencies, and collaboration with commercial interests has enabled areas of potential future work to be identified. Those are two key areas where we have noticed progress.

Q48 Chair: Are you finding that having the industry representatives round the table is improving trust between the various stakeholders? Does the fact that they are all round the table discussing it help?

Liam McAleese: I think it does help. As I understand it, there have been only two meetings with the industry representative, because the MSCC meets only periodically, but

that has started a greater awareness of where industry can play a role in the various MSCC sub-groups and working groups. There has been a difference. We want to see that reflected in the implementation plan when it comes out.

Q49 Chair: You are happy with the way the MSCC has responded to the review, but you want to see it driven more rigorously. What is the missing bit as far as you are concerned?

Liam McAleese: We are happy in that we have already seen encouraging signs of progress in engaging industry. We really want to see an ambitious implementation plan that is properly resourced and makes good links to the growth agenda. That is what is missing at the moment, and we would like to see the Department for Business, Innovation & Skills play a stronger role in that.

Chair: That leads neatly to the next question, I think.

Q50 Stephen Metcalfe: One of the new major functions of the MMO is to produce marine plans. I think you said that the first plan had slipped somewhat, although the MMO has confidently said that it will not affect future plans. Why do you think it has slipped? What are the challenges in getting the first one produced?

Liam McAleese: Marine planning on this scale is a huge undertaking. It is ambitious; it is quite comprehensive; there are challenges on evidence base. There is also an element of the MMO feeling its way. The original post-Marine Act timetable did slip a bit, but I think that is sensible, because the MMO has taken a pragmatic approach and realised that it needs to take time and work with stakeholders to get this right. Although the marine plans themselves are still being developed, the marine planning system started two years ago with the publication of the Marine Policy Statement. It started immediately, if you like, but plan making has taken a little longer in the east than originally envisaged. My sense is that the MMO is speeding up a little. It is learning lessons and currently is developing south plan areas.

Q51 Stephen Metcalfe: Do you think part of the problem could be lack of evidence or enough available evidence on which to base the plans?

Liam McAleese: The evidence is an issue and I think the MMO has been quite clear about that. It has a strategic evidence plan where, at strategic level, it has highlighted where some of its key gaps are. They are gaps familiar to the Committee through discussions on MCZs—things like seabed habitat maps. It has also responded quite quickly to tactical gaps. It has looked at marine socioeconomics and various data-gathering activities to plug some of the most immediate gaps in data. Some of the evidence gaps are slightly larger, such as seabed habitat mapping and understanding the impacts of cumulative effects and displacement. That will take a long time, but there is a plan in place to address this.

Q52 Stephen Metcalfe: Do you think they are doing enough quickly enough?

Liam McAleese: They are doing enough within the resources they have. Some of the evidence gaps are not specific to the MMO; they are across the marine science

community, and that is why greater co-ordination at the MSCC level is required to ensure that resources are there to meet those priority evidence needs.

Q53 Stephen Metcalfe: Some of those gaps could possibly be filled by better or greater data sharing.

Liam McAleese: Yes.

Q54 Stephen Metcalfe: Do you think the Government are doing enough to encourage wider data sharing?

Liam McAleese: There has been a lot of progress in this area. Colleagues may want to make their own observations. The MMO has been leading some work on this. It has contacted my company and others in the sector to see what can be done about data sharing. Under the MSCC there is another group called the Marine Environmental Data and Information Network—MEDIN—which plays a really important role in ensuring there are common standards and cataloguing data, so you can discover that. That is currently being reviewed and, I hope, strengthened. A little note of concern is that the Environment Agency have withdrawn their funding for MEDIN. At a time when we are trying to encourage greater data sharing—MEDIN is a platform to facilitate that—there is concern that the Environment Agency have withdrawn their funding.

Q55 Stephen Metcalfe: Have they given you any indication as to why they have withdrawn their funding?

Liam McAleese: I am not sure. It is in the public domain.

Q56 Stephen Metcalfe: It is in the public domain that they have withdrawn funding, or the reason for withdrawing funding?

Liam McAleese: It is just that they have withdrawn funding. I am not aware of the reason.

Q57 Stephen Mosley: Can I turn to the Marine Strategy Framework Directive? How well do you think the UK is progressing towards getting good environmental status for its waters?

Dr Solandt: As far as our organisation is concerned, the major exciting area of the MSFD is sea floor integrity. We perceive the ability of marine ecosystems to repair themselves if you manage them correctly and stop the damaging activities to be something that would have been achieved in an MCZ network that covered about 127 sites. You can see that we are lacking because we have only about 30 on the table at the moment. One of the key areas of habitat that is going to be lacking in UK sea bed protection is soft sedimentary habitats. I mentioned this at the evidence session last year. It will be even further lacking now that we have 31 rather than 127 sites. Therefore, we will not achieve MSFD because we will allow towed fishing gear and all sorts of human activities over large-scale areas of the sea bed. We have protected large areas of rocky reef habitat, but we have left a large part of the functional ecosystem open to exploitation probably beyond sustainable limits.

If we do not up our game, we will not achieve the legal obligations under the directive to deliver that objective in UK waters.

Joan Edwards: For good environmental status there are eight indicators, of which sea bed integrity is one. We were consulted about a year and a half ago about what the Government were going to do with the eight indicators. The general feeling in terms of the UK is that we are not going to do anything more than we are doing already, and that will not give us good environmental status. We seem to be taking a very minimalistic approach to it. That is not particularly strategic and forward-thinking, because when we get to 2016, 2017 and 2018 we will have to prove good environmental status. We do not seem to be on the journey to achieve it, so there is a future problem.

Q58 Stephen Mosley: The Wildlife Trusts' evidence did criticise the initial assessment and proposals as lacking ambitious targets. What sort of targets do you think the UK should aim for?

Joan Edwards: To give you an idea, there is a target around noise. The UK response or consultation on that issue is, "We don't really know very much about noise, so we won't do anything." That is not very ambitious. Other countries are a lot more ambitious. Our concern is that we are approaching it in a very minimalistic way. We are not looking for solutions to some of the questions; we are just hoping they will go away. One of the most frightening parts of the whole process is that different parts of a Department wrote eight chapters on each indicator and they were not talking to each other. There was no integration of the strategies that you might put in place to implement MSFD.

We have identified the MMO as very small and new. It does not really talk about MSFD in the marine plan, but it is responsible for the monitoring of MSFD. At what point is it going to be able to achieve that monitoring, and where is that expertise going to be? One of our concerns about the MMO is that it has only about 200 staff and very few marine ecologists within it. There are planners but not marine ecologists, and yet MSFD is about marine biology and marine ecology. Somehow we have to get some of this expertise into the planning process.

Q59 Stephen Mosley: Mr McAleese, what are your thoughts on the MSFD?

Liam McAleese: The Cluster has not taken a view as to the level of ambition on the objectives, but it has noted that in some of them there are difficulties about evidence. Noise is a good example. Impulse noise, such as that from seismic surveys or piling, is relatively easier to measure, but ambient noise is a real challenge. For example, as to one of the descriptors of invasive species in areas, there is a need for a sensible approach to understand how those important issues can be tackled. Those are areas where there could be potential costs to industry.

Q60 Stephen Mosley: The North Sea Marine Cluster say in evidence that MSFD is "the curved ball that industry is not expecting." What sort of unwanted surprise do you think might be in store?

Liam McAleese: Joan has just said that in 2017-18 we could find ourselves not on track to meet good environmental status. That will potentially require new management measures. My sense is that DEFRA has been working with industry quite well on the process and looking at the development of targets and indicators, but there is still a lot of uncertainty. For example, in the scenario Joan suggested where it was clear we were not on track to meet good environmental status, there could be additional requirements on noise or new measures that would need to be put in place. Although I have not been close to it, from experience of implementation of the Water Framework Directive, which has similar characteristics, I understand the process was quite complex and some of the costs and benefits were poorly understood at the outset.

Chair: That has been intriguing. We are very grateful for your time, and thank you for your continued support of these important inquiries.