

# **RURAL AFFAIRS AND ENVIRONMENT COMMITTEE**

Wednesday 5 March 2008

Session 3

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## RURAL AFFAIRS AND ENVIRONMENT COMMITTEE

### 5<sup>th</sup> Meeting 2008, Session 3

#### CONVENER

\*Roseanna Cunningham (Perth) (SNP)

#### DEPUTY CONVENER

\*John Scott (Ayr) (Con)

#### COMMITTEE MEMBERS

\*Karen Gillon (Clydesdale) (Lab)  
\*Jamie Hepburn (Central Scotland) (SNP)  
\*Des McNulty (Clydebank and Milngavie) (Lab)  
\*Peter Peacock (Highlands and Islands) (Lab)  
\*Mike Rumbles (West Aberdeenshire and Kincardine) (LD)  
\*Bill Wilson (West of Scotland) (SNP)

#### COMMITTEE SUBSTITUTES

Bill Kidd (Glasgow) (SNP)  
Nanette Milne (North East Scotland) (Con)  
John Farquhar Munro (Ross, Skye and Inverness West) (LD)  
David Stewart (Highlands and Islands) (Lab)

\*attended

#### THE FOLLOWING GAVE EVIDENCE:

David Faichney (Scottish Environment Protection Agency)  
Chris Spray (Scottish Environment Protection Agency)  
Assistant Chief Constable Ewan Stewart (Association of Chief Police Officers in Scotland)  
Superintendent James Urquhart (Association of Chief Police Officers in Scotland)  
David Wynne (Chief Fire Officers Association Scotland)

#### CLERK TO THE COMMITTEE

Andrew Mylne

#### SENIOR ASSISTANT CLERK

Mark Roberts

#### LOCATION

Committee Room 1



## Scottish Parliament

### Rural Affairs and Environment Committee

Wednesday 5 March 2008

[THE CONVENER opened the meeting at 10:02]

### Flooding and Flood Management Inquiry

**The Convener (Roseanna Cunningham):** I remind everyone to switch off their mobile phones and other bits of electronic equipment, or at least to make sure that nothing is receiving a signal.

We have had no apologies and I have had no indication that any other member of the Scottish Parliament will join us, so we will go straight to the delegation of witness expenses for the flooding and flood management inquiry. I ask the committee to delegate to me, under rule 12.4.3 of standing orders, responsibility for authorising any witness expenses claims in connection with the inquiry. A brief explanation is given in paper RAE/S3/08/5/1, but it is not particularly controversial. Are we agreed?

**Members indicated agreement.**

**The Convener:** Agenda item 2 is oral evidence for the inquiry. The first panel is representatives from the Scottish Environment Protection Agency, which will henceforth be called SEPA. I welcome Chris Spray, director of environmental science. David Faichney is the flood unit manager.

We will not have opening statements, but will go straight to questions. Witnesses have been advised that the session might run for an hour and a half, if committee members so wish. That is a long time, so the witnesses will be glad to know that it might not actually come to that.

The written submission has been circulated to members and I commend SEPA for it. It is brilliantly clear and makes it easy for us to ask questions.

I will go straight to the first question, which is about climate change and the knowledge and impact of flood risk. We saw a pretty massive event in England last summer, and we all know that, but for a butterfly flapping its wings in Siberia, it could have taken place a couple of hundred miles further north, in which case Scotland would have been under the rain instead of England.

**John Scott (Ayr) (Con):** That is an unexpected allusion to chaos theory.

**The Convener:** SEPA's evidence points out that strategic assets were at risk in England and we must assess that in Scotland. However, I also wanted to ask what impact that weather would have had in Scotland. I ask that because, last summer, I was advised that if that amount of rain had fallen in Perthshire, the Perth flood defences would have been overwhelmed. Those flood defences are relatively new and cost a fair bit of money, so it would be interesting to know whether that is the sort of serious one-off event that could overwhelm flood defences such as those in Perth.

**Chris Spray (Scottish Environment Protection Agency):** I will start with a couple of points and, from now on, I will try to deal with the strategic level, but David Faichney is the expert, so if I make a mistake, he will correct me and I will apologise.

The Environment Agency has been very good at sharing its information with us, and the evidence is that there is a huge range of what we might call return periods or probabilities for different elements of that event. In some areas, it was a rare event, whereas in others such an event might return every five or 10 years. It is difficult to give a single picture.

A lot of the flooding in England did not come from rivers. It was not catchment flooding, but surface water and sewage backing up, particularly in Hull and Sheffield. That is a slightly different scenario, which has implications for Glasgow and its strategic drainage plan, but it would be different for Perth. With that caveat, I will hand the question over to David Faichney.

**David Faichney (Scottish Environment Protection Agency):** All areas are at risk of flooding and floods of different return periods and extremities will happen; it is just a matter of time.

Perth's flood defences are designed to a standard that will be exceeded at some point. When that will be is a roll of the dice; it could be next week or next year. When we build something, we base it on a set of probabilities and our experience, along with the information and good scientific data that we have.

**The Convener:** The figures that I was given last year say that if two thirds of that rain had fallen on Perth, our flood defences would have been overwhelmed. Is that true?

**David Faichney:** I do not know the exact figures.

**The Convener:** But in general terms—

**David Faichney:** In general terms, there was an extreme rainfall event in parts of England. In parts of the Severn valley, they were talking about a one-in-100-year event, which has a probability of 1 per cent of happening in any one year. In other

areas, it was a one-in-12-year event. It depends where you are talking about.

**Chris Spray:** Generally speaking, flood defences are now built to a return period of one in 200 years but, in the past, some flood defences would have been built to different levels. Very intense local rainfall can cause extra problems.

**The Convener:** Given that this is our fifth evidence session, it would be useful if you took it as read that we know about this stuff.

I appreciate what you say about defences, but it is not just about the Perth defences; it is about all the others that we have in Scotland and those that are yet to be built. There was an event during the summer last year in England and my question is specific. With hindsight, can you say whether the Perth defences and other flood defences in Scotland would have been overwhelmed by it?

**Chris Spray:** Overwhelming would have occurred in some areas, but I cannot say whether it would have happened in Perth. We would have to consider the detailed data.

**The Convener:** I understand that private briefings to Perth and Kinross Council advised councillors that that was the case.

**David Faichney:** The important difference to understand—and I am sure that the committee does understand it, having examined flooding in a lot of detail during the past few months—is that it is not just the rain that falls that causes the flooding, but where it lands, the underlying catchment, the drainage systems, the design standards, the activities that are taking place in the catchments and the ability of the catchment to absorb water and retain it.

**The Convener:** Since we have mentioned Glasgow, I call Jamie Hepburn.

**Jamie Hepburn (Central Scotland) (SNP):** I was going to ask about Glasgow a bit later. My first question is about flood maps; it does relate to what we are discussing.

We have discovered that, south of the border, flood maps show areas where there is a one-in-75-year risk while, north of the border, they show either a one-in-100-year or a one-in-200-year risk—I cannot quite remember which. It has been suggested that, because our flood risk maps are not as accurate, the insurance industry might not be as willing to offer insurance in Scotland. Given that your agency obviously has an interest in that, have you taken any steps to review your mapping? Indeed, how accurate are those maps?

**David Faichney:** The flood maps for Scotland, collectively called the indicative river and coastal flood map Scotland, were produced back in October 2006 to complement Scottish planning

policy 7, which informs planning on flooding in Scotland. SPP7 contains a planning framework covering floods with a 100-year, 200-year and 1,000-year return period, which are the three return periods that SEPA has mapped. The one-in-200-year map is published on SEPA's website for everyone to look at, but local authorities have the three sets of maps to allow them to base their planning decisions on the indicated level of risk.

We produced indicative maps for the whole of Scotland, because they had to provide a view on areas for the different flood risks and because they could be viewed in conjunction with SPP7 to inform planning decisions. Moreover, we enhanced the one-in-200-year flood outline by including historical data and by examining every river reach to ensure that we had one data set for planners' use that was in the best condition that we could manage.

The flood plain map for England and Wales is used for a number of different jobs. For example, as part of its remit the Environment Agency has to think about how it designs flood defences in flood risk areas. It also maps flood warning areas and produces the one-in-75-year flood outline which forms part of the statement of principles that the Association of British Insurers has agreed in England and Wales on who should receive insurance and when insurance would not be granted automatically.

**Jamie Hepburn:** Did I hear you right? Did you say that you can map a one-in-1,000-year flood? That sounds biblical.

**David Faichney:** It is an extreme flood outline that, to be honest, is more about the extent of flood plains.

**Jamie Hepburn:** You said that you have made these maps available to local authorities for planning decisions. Are they also available to the insurance industry?

**David Faichney:** Anyone can look at the one-in-200-year map on the web.

**Jamie Hepburn:** But are the more detailed maps available to the insurance industry? The concern, after all, is about insurance, not planning decisions.

**David Faichney:** The maps do not have more detail, because they are indicative. For example, they do not show households that are at risk of flooding. Instead, they show areas of what you might call bare earth that would be susceptible to flooding in a modelled flood event across Scotland. Moreover, they do not cover all types of flooding or catchments; they cover only catchments of more than 3 sq km and coastal and river flooding. Any insurer who tries to use the map to assess flood risks will see, when it is

downloaded, very clear caveats from SEPA about what it has been designed for and what it shows.

**Jamie Hepburn:** Glasgow City Council told us that

“SEPA’s flood maps do not show half the areas in Glasgow that are subject to flooding.”—[*Official Report, Rural Affairs and Environment Committee*, 19 February 2008; c 503.]

If, as you say, all the maps are available to local authorities, why would it have said that?

**David Faichney:** I am not surprised by that comment. After all, most of the flooding in England and Wales last summer happened in areas that were outwith flood plains or that were susceptible to heavy rainfall, pluvial or sewer flooding and flooding from small watercourses. Many of our urban areas are susceptible to the same kinds of flooding. The level of detail in the indicative flood plain maps for Scotland does not go down to household level and does not cover very small watercourses or the flooding that we might expect from rainfall—that is, surface water flooding.

**Jamie Hepburn:** So the maps do not show, for example, the kind of flooding that Glasgow would experience, with water coming up through the drains.

**David Faichney:** That is right. We also modelled throughout Scotland to give planners a view of the risk throughout Scotland. The level of detail is not as great locally, but we share information with local authorities where they have done more extensive modelling studies to understand the local risk. We have taken that information, uploaded it into the map and compared it against the map. Our flood risk hydrologists are reviewing the map monthly when new information comes in from local authorities. For example, the Selkirk study of the Ettrick water related to releasing the parcel of ground next to the Ettrick that is at risk of flooding. Scottish Borders Council needed a good understanding of the risk and how it could incorporate it within its regeneration plans for the area. We fed the information from the study back into our flood map.

10:15

**Peter Peacock (Highlands and Islands) (Lab):** I want to pursue some questions about Moray. Moray Council told us that it thought that in a typical flooding incident in its area, which is not heavily urbanised in the way that Glasgow is, 40 per cent of flooded properties would be outwith the at-risk area, according to the flood maps. I know that you are updating the maps, but how much can local authorities depend on them in considering the scope for future development? To what extent do your maps anticipate the potential effects of climate change?

**David Faichney:** The maps are just indicative. The idea is that local authorities and planning authorities can look at the maps and decide how they might wish to zone areas for planning. They would have to investigate further the areas where there might be a flood risk. That is what Scottish Borders Council did with the Selkirk study. The council discovered that there was a flood risk but that our maps gave only an indication of that risk. The council wanted to know at what height above the water to build, what land it might be able to build on and what land it would not be able to build on. Councils have to carry out their own studies to determine that sort of information. The purpose of the map is to raise awareness of flood risk throughout Scotland generally to allow local authorities to focus on the areas where there is a key risk that they have to understand better. Local authorities can then spend a bit more money on a flood model to get exact flood heights and so on.

**Peter Peacock:** So, your clear evidence is that, notwithstanding what your maps say, there is still a duty on the local authority to think beyond them and to consider the impact in a given area. Are you saying that authorities are required to consider that as part of their planning considerations and that they should not depend solely on your maps for that purpose? In your experience, do local authorities always do that?

**David Faichney:** They do not always do it, but SEPA is a statutory consultee in the planning process when a proposed development is likely to be at risk of flooding. When authorities flag that up, they forward the information to SEPA as part of the process and we will say whether we think that there is a flood risk. If we say that there is a flood risk, we recommend that the authority does a full flood risk assessment or puts one in place before any development goes ahead. The full flood risk assessment would be carried out by the local authority or a partner or contractor for the authority. It would then be resubmitted to the authority as evidence and would come to SEPA, which would consider whether it was a good piece of work that made sense and whether it fitted in with our understanding of flood risk for the area in question.

**Peter Peacock:** I am sorry, but I am not fully grasping all this. Your advice to the local authority would be based on your flood map, but we now know from evidence that we have heard that flooding extends beyond the areas shown on your map. Do you enhance your advice—if that is the right expression—beyond the flood map to say that if a development is proposed in proximity to a flood risk area the authority ought to do a separate study, or is that beyond your remit?

**David Faichney:** It is partly beyond our remit. We do not see all planning applications. If an

application was not brought to our attention it could go through without our ever having seen it, which means that a property could be built on a flood plain.

**Peter Peacock:** What about climate change?

**David Faichney:** We expect flooding to become more frequent, which changes the return period that we are showing on the maps. The maps give the frequency of flooding as we know it at present, on the basis of our records and the large-scale modelling that we did for the whole of Scotland. That will change over time, so the maps will need to be refreshed with new information. We think that flooding will become twice as common by 2080. So, by 2080 a one-in-100-year flood would become a one-in-50-year occurrence.

**Chris Spray:** The other thing that the maps cannot really pick up is the increase in intense localised events—local rainstorms of high intensity, which are leading to particular problems with landslides. The map cannot pick that up at all.

**John Scott:** Is it relevant to what you have just said to suggest that one-in-100-year flood mapping should be carried out? Such floods are major events that affect a lot of people. A one-in-200-year flood is a much more occasional event, but the ones that are causing damage now are probably one-in-50-year or one-in-100-year events.

**David Faichney:** I agree. We produce three flood outlines for the planning authorities: one in 100 year, one in 200 year, and one in 1,000 year. We have focused on, enhanced and made as up to date and accurate as possible the one-in-200-year map. Quite a lot of work is involved in producing the outlines and that one is of key importance to SPP7, which contains the planning policy guidelines on flooding.

It would be useful to have other flood outlines. Under the new European flooding directive, we will be required to consider other flood return periods—both more and less frequent ones. We will have to consider extreme events and ensure that they are modelled accurately, but also to consider events that happen more often. A flood that affects people every 10 years is much more important to us than one that happens only once in a while.

**The Convener:** We have heard a lot of evidence from various people about individuals' taking responsibility for things. We will come back to that, but I have a related question on the information that you publish. The one-in-200-year maps are on your website and everyone can log on and see them. The other information is not so immediately available. Is it available if people ask you for it?

**David Faichney:** Yes.

**The Convener:** So anybody who is purchasing a house, for example, can ask SEPA what the history of flooding is in such-and-such a street?

**David Faichney:** That is correct. We hope that people will do that, because we try to raise awareness.

**The Convener:** I am not certain that people are aware that they can do that, so that is useful.

**Bill Wilson (West of Scotland) (SNP):** Jumping back slightly to climate change, I wonder whether you have a view on sea level rises. It is clear that sea levels are rising, and they are predicted to rise by anything between 50cm and 5m depending on how catastrophic a scenario develops. Do you have a view on coastal inundation and the minimum height above sea level at which coastal houses should be built?

**Chris Spray:** I will start with a general comment and David Faichney will give the detail.

There are two aspects. The sea level rise itself is quite small. What concerns us—we do not have enough data on this—are the occasional sea surges that occur, particularly on the west coast. When those surges occur, there are tremendous jumps. In the most famous example, our site near Corpach at Fort William recorded a sudden increase of more than 1m above the previous record when adverse weather conditions and south-west lows combined with wet weather to give a massive change.

Such changes in sea level are far bigger than the changes that are caused by climate change, which happen gradually and are measured in millimetres. The fact that we have to consider rises that are caused by sea surges makes it difficult to answer the simple question whether we can build in an amount to cope with the gradual millimetre-by-millimetre rise on, say, the east coast.

**David Faichney:** To build or not to build is the main question that faces those who are involved in planning and tackling flooding. We do not want to increase the number of properties that are at risk of coastal or river flooding, or indeed pluvial or sewer flooding.

As a statutory consultee under the planning process, SEPA considers coastal flooding in the same way as river flooding. Our approach is based on the guidance in SPP7 and the return period of a particular type of flood. We also take into account how that might change during the lifetime of the development because of climate change, and we consider how good the data is on which we are basing our prediction. The better the data, the better the prediction.

We treat coastal flooding in the same way as river flooding. We consider the likelihood of flooding at the site and we make a recommendation to the local planning authority on that basis.

**Bill Wilson:** It is not just a matter for the planning authorities. I am trying to get your view. I appreciate that sea levels are increasing millimetre by millimetre, but in 30 years' time that gradual increase might have changed the sea level by several metres, which will change our flooding predictions substantially. Do you have a view on that? Do you say, "In 30 years' time, we might have lost 2m of coast, so we should recommend that people do not build below a certain height"? Do you have a view on recommending a specific height?

**David Faichney:** We should recommend that people do not build in areas if they are at risk. We have the guidance in SPP7, which gives us a clear indication of how we should make planning decisions while taking flood risk into account, and we are doing that. Ideally, it would be great if people did not build in any area that was at risk of flooding, but our planners need to take into account other factors, such as economic and social factors, in delivering on Scotland's housing or business needs and economic growth. We need to—

**Bill Wilson:** So SEPA does not have a specific view on building at a certain height above sea level.

**Chris Spray:** We do not have a specific view at the moment. As I said at the beginning of the meeting, our coastal data is probably the weakest that we have. As that data accumulates, we will look to improve it, but there is no standard at this precise minute.

**Bill Wilson:** Okay. You have one-in-100-year maps and one-in-200-year maps, but when it comes to pluvial flooding, Scottish Water is building sewers to cope with overflows from one-in-30-year floods, so there is a big gap there. You also said that you cannot deal with neighbourhood flooding. In other words, you accept that there are no good maps for pluvial flooding, which also appears to be Scottish Water's view. Scottish Water seems to think that we should have such maps. Do you agree and, if so, is SEPA taking action to help us acquire them?

**Chris Spray:** On your first point, we agree that we will need such maps eventually. It is clear that many of the areas with which we and Scottish Water are concerned are highly populated with very small catchments, which makes the cost of making such maps high. Ideally, we would like those maps, but I leave it to David Faichney to say where we are in that regard.

**David Faichney:** It would be a priority to fill in the gaps, if you like, where we have flood risks but no maps. SEPA's current remit is to have maps that inform planning decisions, not necessarily flood warning, flood response or civil contingency decisions.

In recent years, under the Civil Contingencies Act 2004, we have put together the community risk registers for various flooding scenarios. To do that, we have had to use the information that we hold presently. Going through that process highlighted to us some of the areas where we know there is a flood risk, but for which we do not have data. By working with partners such as Scottish Water and the city authorities in particular, we have managed to gather and hold quite a lot of information.

There is no central repository of flood risk information in Scotland. SEPA has information, Scottish Water has information and local authorities have pockets of very useful information. It is not usually until a flood happens that such information starts to come out. It would be good if SEPA's role could include actively seeking out information and holding a central repository of data that could be used by all partners to make informed, catchment-based flood management decisions.

**The Convener:** We talked about flood predictions and all the rest of it. Has SEPA done any work to establish what strategic assets are at risk of flooding, or is that not something that you regard as SEPA's responsibility?

**Chris Spray:** We have not yet done such work; we have done analysis of the Pitt report, of which I am sure the committee is aware, and we have taken a paper to the board to highlight such work as one of the critical issues. Looking forward to the European Union floods directive, that work will be of great interest and we will need to do it.

**The Convener:** So you are considering that work at the moment.

**Chris Spray:** Absolutely. In fact, we were talking to Scottish Water about some of its assets just last night, comparing notes about the Pitt report and about where water treatment works are. As Scottish Water pointed out, it helps that most of its water treatment works are on hills in this part of the world. However, we certainly need to map sewage treatment works and we have started some of that work.

**John Scott:** Is it generally the case that most of Scottish Water's assets are on hills?

**Chris Spray:** That is the case for water treatment works, which is a fundamental difference between England and Scotland because of where their water comes from—much of England's water comes from boreholes.

Sewage treatment works, however, tend to be in the lowest-lying areas and they are key. We also have to look at electricity sub-stations and the like. That would be a key and early part of a flooding bill.

**John Scott:** While you are on the subject, what about reservoir failure?

**Chris Spray:** Again, we have talked to Scottish Government colleagues about that and to Scottish Water last night. It is not a duty for us at the moment, but Scotland will have to look at it after the EU floods directive. It fits in at exactly that point—it is the hazard-mapping bit of the process that the EU directive requires. The Pitt report brought that home as a priority that we all need to tackle soon.

**The Convener:** We should probably move on to the proposed legislative changes since that is where we are heading anyway. Peter Peacock will kick off.

**Peter Peacock:** I concur with the convener's comment that your evidence is extremely clear and helpful in many respects. It also covers the question of potential legislative change. You say in your initial observations that we require

"a robust strategic and operational framework"

and you talk about the need for better co-ordination. In paragraph 2.2, you talk about the flood directive and the need to transpose it into Scottish law as a foundation stone for change.

In paragraph 2.3 you say:

"SEPA should be identified as the Competent Authority for the Floods Directive"

and in paragraph 3.2, you say:

"SEPA does not believe the creation of a single Floods Authority is required",

but if SEPA acted as the competent authority for the floods directive, it would be in a singularly powerful position in Scotland. De facto, would it not be a single floods authority? What is the distinction between a single national agency and the role that you have set out for SEPA? At the moment, I am not clear about that distinction.

10:30

**Chris Spray:** South of the border, one authority—the Environment Agency—is responsible for everything from hydrometric measurements, at the beginning of the process, through flood warnings to building and maintenance of flood defences. We see no need for Scotland to adopt that model.

SEPA does not wish to get involved in the detail of building and maintaining flood defences and has no intention of doing so, as it thinks that local

authorities are best placed to ensure local delivery, but we must look at how we can bring matters together at national level to implement the EU directive. We need a body that holds the ring, to provide consistency and to ensure that reporting on the directive takes place through the correct channels and to the appropriate sources.

The issue is not availability of resources, but ensuring that the skills that we have—which local authorities do not possess to the same extent—are available across Scotland. A body such as SEPA could ensure overall consistency of methodologies and enable early work on flood risk assessment, in particular, to be done. Such a role would link well with the catchment management approach that is set out in the water framework directive, for which we are the competent authority. We do not think that we must move to a completely different model. Local delivery, through local authorities, is still important, and we do not wish to see that altered.

**Peter Peacock:** So you make a clear distinction between the operational detail that can be dealt with at catchment level, to which I will return, and the task of providing a national overview and ensuring prioritisation—what you describe as holding the ring—between the many competing interests. You draw a contrast between your proposal and the situation in England, but do you accept that if SEPA occupied the position that you suggest it would essentially be a national floods agency holding the ring between different interests, although it would not deal with all the detail of flood management, as the Environment Agency does in England?

**Chris Spray:** I accept that SEPA would be acting as a national floods agency but, unlike the Environment Agency south of the border, it would have no responsibility for gathering resources or directing them to particular developments and flood defences, which is a key component and a major part of what the Environment Agency does.

**Peter Peacock:** In your view, if SEPA does not play the role that you envisage for it at national level, someone else will have to. Notwithstanding what you have just said about the distribution of the resources—we will come to that issue—does the role extend to creating national priorities for flooding? Should a view be taken at national level on what needs to be dealt with in the next three or four-year period and on the shared priorities that must be agreed? Might the role extend to giving guidance to catchment areas on what they need to do, monitoring activity on behalf of the nation, and reporting and giving advice to ministers? Are all of those tasks encompassed within the role that you envisage for SEPA?

**Chris Spray:** I see it developing along those lines. It is about providing national guidance,

especially at the first stage of implementation of the EU floods directive, when we must identify significant flood risk areas. If that is not done, many other things will not happen. Flood risk areas must be identified consistently across the country, using our data and data from local authorities, who have much better information at a lower level. Under our proposals, SEPA would be responsible for all the issues that you have set out.

**Peter Peacock:** In legislative terms, that would require SEPA to be given statutory powers and duties that add to and complement those that it already has. In your written evidence, you say that others will need to buy into such a change. How do you envisage that happening? Would it be done simply by placing a statutory duty on police and fire authorities, local authorities, Scottish Water and others to co-operate with you in a particular way? Is that the sort of framework that you envisage?

**Chris Spray:** I think that we would try to create a distinction between the role of the competent authority and that of the relevant authorities, as under the EU directives. The relevant authorities would be a range of bodies, including local authorities and Scottish Water as well as, perhaps, Scottish and Southern Energy, Scottish Natural Heritage and others. The relevant authorities would be under a duty to work co-operatively with each other and with us to produce the plans that we need to provide to the Scottish ministers and, ultimately, to Brussels. That is how I see the legislation working.

**Peter Peacock:** That is clear enough.

Convener, I also want to ask about local authority co-ordination, but other members might have further questions on the national issues first.

**The Convener:** Yes, I think that others are keen to ask about the national co-ordination aspect.

**John Scott:** I hear what Chris Spray is saying, although perhaps not in its entirety. Who would be the enforcer of the legislation? It is vital that there is a key enforcement authority. Some authorities are born great, some achieve greatness and some have greatness thrust upon them. Would SEPA welcome that enforcement role? If SEPA is not seeking such a role, I think that our view would be that some body would need to have that authority.

**Chris Spray:** I want to have a clear statutory framework, but I think that the ultimate authority would still be the Scottish ministers. The situation would be similar to that of the water framework directive, under which the river basin management plans are ultimately signed off by the minister but local authorities—with SEPA holding the ring, if you like—have a duty to work together and to integrate those plans with a series of other plans, including their structure plans and development

plans. That is the sort of model that we are looking at. We certainly do not see ourselves as having an enforcement role over local authorities or other bodies.

**John Scott:** I suppose that conflicts could arise, in as much as local authorities have elected members whereas SEPA does not.

**Chris Spray:** That is a key issue. The same point might be made about the water framework directive, which I think is why the plans need to be signed off by the minister. We need to work with local authorities, which have the local knowledge and the local delivery mechanisms. As you rightly pointed out, we are not elected whereas local authorities are. The priorities may need to change at the very local level.

Under the model that we have suggested for debate, the detail of the catchment management plans at the very local level would remain entirely within the hands of local authorities, which would be able to work out their own priorities in their areas. That plays to the fact that, as members discussed earlier, local authorities have much more interest in, and much more detailed knowledge of, hydrological interests. For example, they have details of catchment return periods and localised flooding that we will not, and could not, have at national level. That is the sort of mix that we are looking for.

**David Faichney:** Our target is to keep the benefits that can be achieved through that approach while gaining the benefits of having, for the first time, a national approach to flood risk management so that we can prioritise the areas that require a new flood warning or flood defence scheme.

**John Scott:** My concern is that an upstream local authority that could provide mitigating effects might conclude that doing so would provide no real benefits for its council tax payers. Why should an authority act for the greater good of the community downstream, which is outwith its area?

**Chris Spray:** We recognise that that is a significant challenge and I am not sure that I have an answer to your question. The minute local authorities are linked with different expenditure priorities, such issues—quite understandably—become quite a challenge. As relevant authorities, local authorities would have a duty to co-operate with each other, but I guess that the issue is the extent to which they would do that. We do not wish to be the person in the middle, telling them what they must do. Ultimately, that is for ministers, working with local authorities.

**David Faichney:** There is no doubt that flooding solutions need to be at a catchment scale. To enable that to happen, we need to work together. Some joint working has been demonstrated in the

metropolitan Glasgow strategic drainage plan, which involves more than one local authority as well as Scottish Water. Although all the different funding streams may not be in kilter, the authorities involved have managed to pull together to secure improvements to the drainage problems in that area.

**The Convener:** We will probably come back to some of that, but I want to ask a general question. We heard evidence from Professor Crichton and WWF Scotland in which doubts were expressed about SEPA's ability to take on a flood management role, as opposed to its present role.

Professor Crichton identified a conflict of interest between your responsibility to protect the water environment and any future additional responsibility that you might have for flood management, which could result in your having to say that works that would affect the water environment must go ahead. WWF Scotland said that because your expertise is in flood warning rather than in flood management, you would, in effect, be taking on a new area of expertise. I appreciate that you indicated that you partially agree with WWF when you said that, rather than get involved in the nitty-gritty of flood management, you want to take a more strategic approach.

Will you respond to those comments about a possible internal contradiction between two aspects of SEPA's work in respect of the water environment and your ability to take on a flood management as well as a flood warning role?

**Chris Spray:** I will start with the second point. David Faichney will no doubt chip in.

We play a key role in flood warning and we have a major resource as regards flood management—not in terms of flood defences and engineering, but in terms of our ability to understand flows. We have some 80 hydrologists. That number is increasing, although hydrology is a difficult area in which to recruit people at the moment. We might come back to the resources that are available for that in Scotland.

We are the hydrometric authority for Scotland, which means that we have the measuring system and that we understand flood flows. Flood defences are not our specialism, but I do not see why we cannot work with folk on that. Any answer, particularly at the catchment level, must be based on sound science and technical knowledge, especially when it comes to the effectiveness or otherwise of some of the sustainable solutions that need to be examined.

As regards Professor Crichton's point, I can see where the perception that there might be a conflict of interests comes from, but I do not think that there is a conflict of interests because, in carrying

out all its duties, SEPA must balance environmental factors with economic and social ones. That does not apply only in the context of the water environment. Under the water framework directive, for example, we must consider the benefits of hydro power schemes and weigh up the economic aspects against the environmental costs. We have done and will continue to do such work.

Under the current legislation—the Water Environment and Water Services (Scotland) Act 2003—we have a duty, as have local authorities and others, to promote sustainable flood management, so there is not such a conflict of interests as there might appear to be.

**The Convener:** After Peter Peacock and Jamie Hepburn have asked questions, we will move on to discuss the planning aspects.

**Peter Peacock:** I want to press you on the relationships between local authorities, which John Scott asked you about. I readily understand your reluctance to say what local authorities should do, but I ask you to put that to one side for a moment. If we end up with a system that is partly dependent on good working at catchment zone level—which everyone seems to say is the case—surely it is not good enough to leave it to local authorities to work together. Ultimately, there must be someone who says that, in the interests of human safety, the environment and so on, such-and-such must happen. I accept your reluctance to appear to be lecturing, but do you agree that there must be a final authority who forces local authorities to work together?

**Chris Spray:** I agree. We are looking at the issue on a catchment scale—we are trying to find the totality of the answer to flooding, which is about not just the flood defence at the bottom end, but how we manage a catchment at the top. To use a scientific analogy, that is about how the water goes from the source through the pathways to the receptor. If we are to do that, someone must hold the ring.

One can understand that a local authority has a number of priorities that its elected members and its constituents want it to meet, which at any one time might be out of kilter with the priorities of other local authorities in the area, with Scottish Water's quality and standards III or Q and S IV development priorities or with the development plans of private bodies such as electricity companies. There must be someone who holds the ring. We think that, ultimately, that person is the minister. I am still extremely concerned about the weakness of that approach, which is why we said that there must be a statutory framework. We do not think that we can rely on good will to make the system work because, for all sorts of very good reasons, it ain't always gonna be there.

10:45

**Peter Peacock:** Let us take that a bit further. Your written submission deals with advisory groups, and we have heard some evidence about that. I might say that some of that is a bit wishy-washy. It is nice to have people sitting round a table talking to one another, but it is critical to know who makes the decisions and who is responsible for them. It seems to me that the system for sorting things out will have to be firmer than an advisory group. I think that you are saying the same.

**Chris Spray:** Yes.

**Peter Peacock:** Would some sort of statutory joint arrangement between local authorities—and indeed with other public authorities—be required for a catchment area? I am thinking about police boards and fire authorities: the arrangements for them are firm and have legislative rigour attached. Have you thought about anything else, in between?

**Chris Spray:** The model is built partly on our experience of the water framework directive. The difference is that the advisory boards that one might select must be very small. They must be made up of the people who can make the decisions, and who have the necessary resources, responsibility and elected power to do so, rather than—with due respect—everybody with a personal interest in the catchment area in question. The arrangements need to be much tighter than those under the water framework directive model.

**David Faichney:** If there is to be a group of people round a table, their work has to be tied together somehow, and they have to be given some piece of legislation that gives them the power to drive things forward and to make things happen. We think that local authorities are central to that, because the people who will deliver the plan for what is required in a catchment area to make a difference with flooding impacts will not be SEPA; they will be the people who build the flood defences and change the land management. SEPA might deliver flood warnings and raise awareness of flood issues to encourage behavioural change, but it will not be SEPA that builds the flood defences and makes the physical changes. It is important for local authorities to be wrapped up in the process—the planning process in the catchment, and implementation and delivery.

**Peter Peacock:** I have got your point about that now—I think I understand it. Presumably, some kind of catchment area plan will have been agreed. Would you see that as a statutory document, like a structure plan or local plan, which, as well as the body itself, would have some force?

**Chris Spray:** Yes, we would.

**Jamie Hepburn:** In your written submission and in your oral evidence today, you have cited the metropolitan Glasgow strategic drainage plan as an example of best practice. I was going to ask what role your organisation might have as the lead authority for flooding and for preparing urban drainage plans, but I think that you have answered that already.

I have another question. Mike Rumbles, Des McNulty and I had the pleasure of visiting Glasgow last year to learn about the approach to the drainage plan and the informal cross-organisation body that has been set up between the local councils, SEPA and Scottish Water. It is an interesting approach. I will ask you a question that I asked Scottish Water but unfortunately did not get the chance to ask the witness from Glasgow City Council. Do you think that such an organisation should be guaranteed by legislation? Should it, and similar organisations, be set up in statute, or is the loose, informal approach okay?

**Chris Spray:** I would like something more than the loose, informal approach. The arrangements in Glasgow are testament to some far-sighted thinking by a number of key people, and I am sure that they could occur elsewhere. We view urban areas as small catchments in themselves, but with different challenges. We spoke earlier about the problems of surface water flow and sewerage. That is a different challenge from some catchment problems, for example Perth, which is at the bottom end of a catchment. We need more of a statutory framework for such bodies.

Scottish Enterprise is involved in the arrangements for Glasgow, which indicates the economic development needs and the potential barriers that would be created by not dealing with the matter. A pretty well-worked-out statutory grouping is needed, and our model identified a number of key areas.

**Jamie Hepburn:** Why do you favour that approach?

**Chris Spray:** For the reasons you were suggesting. It would buy people in. This is not only about spending a lot of money; it is a long-term issue. The benefits will not necessarily be felt by the people who live where the work is done. We need a greater vision to understand the situation and to take things forward.

**David Faichney:** I see the urban areas as sub-catchments of other areas. Glasgow has problems with flooding from the Clyde, but it also has localised problems within the city boundary. It is difficult to look at those problems in isolation because of the way in which they interact. The key role that we have in relation to the flooding directive is in conducting the preliminary flood risk

assessment, which enables us to identify the areas that we have to focus on because they have a significant flood risk. We have to think about how we parcel up those catchments and sub-catchments.

We will not have plans for all of Scotland; we just have to consider the areas that have the most significant risk. We should be thinking about robust ways of addressing the risk in each of those areas. If the urban areas can be included in the same sort of framework as the larger catchments, that is all to the good. Integrated urban drainage plans should be part of the catchment flood management plans and closely tied in with the development plans for that area, to ensure that regeneration maximises the opportunities to reduce the flooding impact and does not expose additional people and businesses to flood risk.

**Jamie Hepburn:** Mr Faichney mentioned, and we were told on our visit to Glasgow, that difficulty with the different funding streams is one of the problems with the informal approach. Would that be changed if there were a more formal approach? Would such an approach save money?

**David Faichney:** If we could tie all the funding streams together—not for ever, but for particular projects in certain catchments—that would be helpful. Some of the solutions are achievable only over perhaps 50 or 60 years. It would be good if the cycles of funding for Scottish Water—the four-year cycle and the eight-year cycle—and some of the local authorities' funding cycles could be tied together better. I do not know how that would be done. Perhaps money could be sliced off various sources and put in a pot for a particular catchment project. If there were a way of doing that through statute, that would be welcome.

**The Convener:** That is a useful point at which to move to consideration of the role of planning, land use and building regulations.

It is inevitable that the evidence-taking session will last until 11:30. I say to committee members that if we are to get through everything we want to get through today, we will have to move a bit more quickly.

**Mike Rumbles (West Aberdeenshire and Kincardine) (LD):** Last year, we saw on our television screens flooding in England. One of the most remarkable things that I saw were pictures of new homes—ones that were in the process of being built—being flooded.

In your very good submission, you say:

"Controlling development through planning is perhaps the most powerful tool available to manage flood risks."

I agree, and I have a general question and a specific question. My general question is this: do you think that we have a robust planning system

that is capable of preventing that sort of situation in Scotland, given that SEPA does not get involved in applications until a local planning authority has requested advice from you? My specific question concerns the most recent example of that that I can think of, which involved SEPA objecting to a housing development but then removing its objection. I am thinking about Aviemore. Can you give me an exact reason why you did that?

**The Convener:** I do not want us to become involved in a discussion about the Aviemore planning situation.

**Mike Rumbles:** I have asked a legitimate question and I would like an answer.

**The Convener:** I appreciate that you have asked a question, but we need to move on and we are not going to get sidetracked into the work of another committee.

**Mike Rumbles:** Convener—

**The Convener:** Mike, I am ruling that—

**Mike Rumbles:** That is not right.

**The Convener:** I do not want these two witnesses to have to become involved in a discussion about the situation in Aviemore.

**Mike Rumbles:** I used Aviemore as an example.

**The Convener:** Yes, I know you used Aviemore as an example. I want to avoid dragging these witnesses into that discussion in front of this committee.

**Mike Rumbles:** I want the information. We have an inquiry on flooding and the most recent example of this—

**The Convener:** I am ruling that we are not moving into a discussion about the Aviemore planning scenario in this particular inquiry.

**Mike Rumbles:** Well, I am not going to continue with this, convener. It is a disgrace.

**The Convener:** I ask the witnesses to respond to the general question that has been asked.

**Chris Spray:** We feel that a plan-led system is absolutely what is required. We provide spatial development strategies that take account of flooding and we have been liaising more and more with planning authorities as early as at the structure-plan level, because that is the level at which we can get the most reward for our work. We have been heartened that inspectors in planning inquiries have supported us in that. It is undoubtedly the route to take.

An issue that we come up against time and again is that of permissions that have already been given. They cause a lot of problems.

**David Faichney:** We have to educate planning authorities so that they understand that building on a flood plain is not a good idea. Of course authorities have to take economic growth factors into account, but—because of climate change and future risk of flooding—it is not a good idea to build on a flood plain.

Chris Spray mentioned land allocations in plans that have been put together in the past few years. Those plans come back in a five-year cycle and we can refresh them and encourage local authorities to zone their land better. SEPA tries to do that as often as it can, but there are so many planning applications that require an assessment of flood risk that we cannot be as proactive as we should be. To raise awareness of the areas that are at risk of flooding, it is much better if such areas are zoned.

**Chris Spray:** SPP7 presumes that there should be no building on flood plains, but there are exceptions and there always will be.

**David Faichney:** In most Scottish towns, an awful lot of the existing housing stock is on a flood plain. Mike Rumbles spoke about stuff that has been built in the past few years, but there may also be stuff that was built 300 years ago.

**The Convener:** Or 1,000 years ago.

**David Faichney:** Yes. We have a lot of buildings by rivers that get flooded.

**Chris Spray:** And they clearly need defending.

**Karen Gillon (Clydesdale) (Lab):** Leaving aside historical building on flood plains, do you feel that SPP7 is sufficiently robust to protect development and to ensure that development does not happen on flood plains? Do decisions taken against your advice enhance or diminish your role as the national flood warning agency?

**Chris Spray:** I will deal with the second question and let David Faichney deal with the first one.

We provide technical advice. Many issues come down to technical advice. We start at a broad level with structure plans, but there is always a need to consider the details. Our flood maps are available so that people can see the details and get another hydrologist study that goes into very great detail, saying whether, for example, three houses and four factories can be built on one particular part of the flood plain while acknowledging that the overall area is potentially at risk of flooding. SPP7 is about potential flood risk and about building in the overall area.

We do not feel that our decisions are being trampled on. We need to give information, which has to be put in the context of the need for social and economic developments in the area.

**David Faichney:** SPP7 is good; it is an improvement on national planning policy guideline 7, which came before. It allows developers and planners to consider whether land raising is appropriate within the flood plain. If we say that a development might be at risk of flooding, developers and planners can think about raising the land. They would have to provide what we call compensatory storage: they would have to offset the amount of land raised. There would be a buying and selling of bits of land, and the pluses and minuses would have to balance out. It is difficult for us to say whether compensatory storage works or is a good idea, but SPP7 exists and that is how it is used.

It is important for local authorities to understand risk and to know the areas within their boundaries that are good or bad for development. They have to know the areas that definitely should not be developed. There should be a plan-led approach to flooding. Developers should not say that they want to build on piece of ground and then go through hoops using SPP7, land raising and compensatory storage to get around problems; planning authorities should know their needs for economic growth, they should know where they need housing, and they should make progress on a plan-led basis rather than wait for a developer to knock on the door and say, "I've got a bit of ground and I want to build 200 houses. How can I do that?"

11:00

**Chris Spray:** Ideally, our expertise would be used to look for solutions. It does not help to move the debate forward if we are just viewed as the body that says no, although that might have some validity. As I said, a lot of areas have important historical, economic, social and environmental aspects. We ought to consider solutions and working with them—that might mean alternatives.

**Karen Gillon:** Is there any merit in having to have a flood risk assessment, and having to find and develop a solution, before a development is given consent? Currently, a development can be given consent before a flood risk assessment has been undertaken and before any solution has been found, and if those things are not done, the power to change the planning decision is negligible.

**David Faichney:** That fits well with what we said earlier about the strategic nature of SEPA's flood map, and how it can highlight to planning authorities areas in which strategic flood risk assessments should perhaps be carried out.

Dumfries and Galloway has carried out a strategic flood risk assessment, and compared it retrospectively with its development and structure

plans to see where, for example, it was right in zoning ground. Some areas that were zoned for new housing developments showed up as being at risk in the strategic flood risk assessment, so they are being reviewed. That is a good starting point for local authorities. Very detailed flood risk assessments should be carried out for areas of ground within city boundaries that need to be regenerated, such as brownfield sites next to rivers—along the Clyde, and the riverside at Dundee, for example—prior to the granting of planning consent.

**Karen Gillon:** Would it be helpful if that was a statutory requirement under any new legislation?

**David Faichney:** Yes.

**John Scott:** Many witnesses have told us about the lack of available data to enable them to consider implementing sustainable flood management plans and, in particular, natural flood management plans. Some have suggested that a series of pilot projects should be undertaken to study their effectiveness.

I have three specific questions on that. What knowledge and data beyond what are already available are needed to implement sustainable flood management? SEPA might have captured the market in hydrologists. What is the availability of hydrological expertise in Scotland, and, if there is a shortage, as we have been led to believe, what can we do about it? What is the timescale and resourcing of pilot projects to investigate natural flood management techniques?

**Chris Spray:** I will try to answer those questions. I am a big fan of natural flood management methodologies, which are a key part of looking at catchments—we ought to bank that. It concerns me that the data to allow us to go forward with that are not available. In Hawick, for example, there are no data to determine the height to which a wall should be built if x, y and z have happened in the catchment. A suggested height of 1m has been published, but I do not know where the data came from to prove that. I am also concerned that walls should be maintained, and have a standard, an owner and a lifetime.

Catchment management plans that involve planting trees or digging ditches rely on a set of people who are not at risk of being flooded and are not responsible to electors or electees for that purpose—they have other pressures on them.

We are talking about lifetimes of 20 to 50 years, but the science on how all those things combine is inexact. The worst floods tend to happen in very extreme events, and I am not aware of data that show that, in such cases—for example, rain falling onto a sodden catchment—plans will impact enough to give reassurance. I am talking about the sort of thing that happened in Boscastle. We need

evidence that allows us to move forward with confidence.

Sustainable flood management does, however, have a whole series of good attributes relating to access, recreation, fisheries, landscape, biodiversity and economic development. I know that various members of the committee have been to the RSPB reserve at Loch Insh, which is a fabulous example of what can be achieved. I am a big fan of it, but if I was the owner, the manager or the councillor responsible for the flood defences downstream, I would be concerned about whether I really knew what I was dealing with.

There is already evidence. Other countries, such as Denmark, have done a huge amount of work on rewilding rivers. It almost comes back to the reference in Gerard Manley Hopkins's poem to "wildness and wet", which is on the outside wall of the Parliament building. The Danes in particular have investigated catching water at the top of catchments and holding it there, so we can learn from elsewhere.

The timescales are difficult, because for any management project for the top of catchments that starts now it will be at least five years before any data emerge. Projects need to keep going for a long period, which worries me. We ought to set up some pilots. We could introduce them alongside other initiatives, for example the water framework directive work on habitat restoration—the government has given money for that to go ahead—the work on monitored priority catchments and diffuse pollution, and a whole range of other work that can be brought together. The key point is that that would enable us to get multiple benefits rather than benefits only in relation to flood prevention.

We definitely face a challenge in getting good-quality hydrologists. We are recruiting now, but the number of applicants is small. Some practical steps could be taken. A number of universities in Scotland have good backgrounds in the subject. For example, the University of Dundee has proposals for an MSc. We have talked to the university about the extent to which SEPA could influence that MSc and perhaps even provide bursaries. The University of Stirling is another example. It would help if the Scottish Government examined that. A small amount of seedcorn money could be provided to take people who are general water level scientists, give them expertise in hydrology and then hold them within SEPA, consultancies and local authorities—not only SEPA needs such expertise. That would be a really good, pragmatic step. The University of Dundee and the University of Stirling are good starting points—I am sure that there are others.

**The Convener:** Would Peter Peacock like to come in now? John Scott is still asking questions.

Is your question on this specific point, or do you want to wait?

**Peter Peacock:** I will follow John Scott.

**John Scott:** I was going to go on to the next questions.

**Peter Peacock:** In that case, perhaps I can ask my question, which is on Chris Spray's point about the fact that people upstream have a role to play but do not have ownership of the problem downstream, so why should they play ball?

Paragraph 5.6 of your submission states that we need to do more about

"reconnecting rivers to their floodplains",

which implies that many rivers have been disconnected from their flood plains. Are you explicitly saying that a power needs to exist for somebody—perhaps the catchment area body, whichever that is—to be able to say to landowners and land users that the barrier that they built 20 or 30 years ago has to come down and that the land will be flooded in the interests of what happens downstream? Are you going that far?

**Chris Spray:** We have to do that, because alternatively we have no method of ensuring flood protection. There are methods, such as the single rural payment and the new agricultural grant systems, to help fund flood protection. Essentially, unless you have some way of ensuring that capital flows back upstream, so that managers at the top of catchments are paid—because essentially the costs fall there but the benefits fall at the bottom—why in heck should they change, and what will keep them there after five or 10 years? There has to be a mechanism for that.

**John Scott:** What funding sources should we use to incentivise land managers? In addition, how should local authorities be resourced to carry out soft engineering and water management in the upper reaches of catchments?

**Chris Spray:** If we are talking about farm land, we can look, for example, to the money that goes through the Scottish rural development programme tiers 1, 2 and 3.

**John Scott:** That is easy to say, but there is no budget in the SRDP for that. If the money is used for such purposes, it will not be used for anything else. I do not disagree with you but, notwithstanding the size of the budget, it is for seven years and it is limited, given the existing legacy schemes.

**Chris Spray:** I take your point. I was looking for an alternative future source. I am aware of the pressures on the SRDP at the moment.

The alternative perhaps addresses your second question. In the cost benefit analysis for any flood

scheme, we need to consider the costs and benefits at the top of the catchment in relation to what happens at the bottom. Money for flood defence schemes should not be regarded simply as money for flood defence barriers; it should be seen as money for sustainable flood management in its totality over a 20-year period, and the budget should reflect that. It might well be better not to build a wall at the bottom of a catchment but to have an upstream area that can be flooded and put to good economic use in all sorts of other ways, for example wildlife, shooting or fisheries. That would be a flood defence scheme and sustainable flood management. It would be the best methodology.

**John Scott:** Is your agency keen to promote that sort of solution and drive it forward?

**Chris Spray:** Yes.

**David Faichney:** As part of a basket of flood risk management measures.

**The Convener:** Bill Wilson has some questions about drainage.

**Bill Wilson:** Just one. The other one has been answered.

Several written submissions have referred to the use of sustainable urban drainage systems, but there is doubt about who is responsible for their maintenance. In addition, one witness noted that, although some organisations agree to use porous material to reduce the speed of run-off, reduce overflow and protect water quality, there is often no inspection to ensure that porous material has been used—and sometimes it is not. I am curious to know where you think that responsibility for that should lie and whether SEPA could take on some of the inspection role.

**David Faichney:** I will have a go at answering that. It is a tricky question, because sustainable urban drainage systems cover a pile of different things—porous pavements, land realignment, careful landscaping within new housing developments and so on. Some of them are put in place by builders and developers, some are handed over to local authorities, and Scottish Water takes responsibility for some of them.

As you say, it is difficult to know how such measures will be maintained in the future, especially at the local level—even down to the level of individual houses. The issue can be the house owner's contribution to reducing the run-off from their curtilage—the water that leaves their patch of land. Tracing that responsibility back to the individual house owner is fine, but it is difficult to do that for shared areas in housing schemes.

The simple answer is that I do not know. There are a lot of challenges.

**Chris Spray:** Scotland moved very well and much further than the rest of the United Kingdom early on by identifying Scottish Water as a key player in such maintenance. We should build on that and include the responsibility as one for local authorities in their delivery of integrated urban drainage plans. It is part of the responsibility of planning authorities to say what methodology and what type of materials should be used, so it should be up to them to follow that up.

**The Convener:** Let us return to the funding and resources issues that John Scott began to touch on. Peter Peacock has some questions.

**Peter Peacock:** I will try to link the issues of funding and resources back to the national framework that I discussed with you earlier and the notion of national priorities. In flood management matters, you sometimes take a 30, 40 or 50-year view of investment needs. We have received evidence from local authorities that the new funding mechanism that the Government has introduced is helping them to offset the costs that they have to meet in preparing flood management schemes at their own risk, which is a good thing. However, there is also anxiety about whether the flow of cash will arrive when they need it and in the volumes required to undertake some big works.

Thinking about catchment zones and the statutory framework that we talked about earlier, is there a case for some of the national cake to be distributed at the catchment area level, notwithstanding the fact that it might then be distributed to local authorities within that catchment area to spend, so that we have a catchment zone view of how the money should be spent? Would that be a legitimate funding method?

**Chris Spray:** Certainly, a variation on that should be developed. You are absolutely right. Part of our responsibility under the EU floods directive is to identify significant flood risk areas using a common methodology, which will provide us with a high-level view across Scotland of where those areas are. That might dictate where the slice that you are talking about should go. It might refer to urban areas in Glasgow, Dundee and elsewhere, but it might also refer to rural catchments.

11:15

**Peter Peacock:** So we should retain at a national level our capacity to impact on the big strategic issues over investment periods. Money also needs to be available locally for other matters and, no doubt, to be held nationally.

**Chris Spray:** That is true. A good example comes from coastal schemes, which—

understandably—tend to be adopted as the result of recent disasters. A strategic overview is not taken to prioritise where the next six schemes—A to F—should be. Instead, if a flood has happened recently, the area jumps up a level. We need to take an overview, and the proposal would be a good way of helping to promote one.

**John Scott:** I will develop that point. Who would be responsible for creating that priority list? Would you be responsible for it?

**Chris Spray:** SEPA could play a key role.

**John Scott:** You would advise ministers on the creation of such a list.

**Chris Spray:** Absolutely, but we would work with local authorities to develop it. That is a good example of where a consistent and strategic overview could be taken.

**John Scott:** Notwithstanding the Government's policy intention to give local authorities money to spend as they wish—I appreciate the reasons for doing that—do you subscribe to Peter Peacock's view, which is probably the committee's emerging view, that the basis should be catchment zones?

**Chris Spray:** We see significant advantages in that.

**John Scott:** Would catchment zones be prioritised?

**Chris Spray:** Prioritisation would be done nationally.

**David Faichney:** Organisations have different roles in flood risk management—SEPA deals with flood warnings and local authorities deal with flood defences, for example. A centrally available amount of money would smooth those differences and allow us to balance better the basket of measures for flood risk management in catchments.

**John Scott:** Have you costed any proposals? I presume that you have thought about catchment-area solutions before coming here—in fact, for much longer.

**Chris Spray:** We have not considered matters such as flood defence solutions for catchment areas, which are outwith our expertise, as members have noted. However, we have examined the resources for which we might have to look to deliver requirements of the EU floods directive, such as the flood risk maps that we talked about. We think that we can integrate much of that with work that we have done on the water framework directive, for which we received significant resources. We have made a bunch of assumptions, which I will jump through without too much comment. If we assume that about 10 districts will need such catchment flood management plans, 20 to 30 members of staff

might be needed at the front end to deliver all that, although they might be able to be dropped down later. Obviously, local authorities will also need their own resources. We might be looking for such a resource to bring everything together, so we are not talking about major developments.

**John Scott:** I want to ask about a specific point. I am afraid that I might have cut you off when you talked about funding land managers and farmers. I declare an interest as a farmer, although my land is not likely to be flooded.

**Karen Gillon:** You never know. Check the maps.

**Bill Wilson:** Do not forget those one-in-1,000-year events.

**John Scott:** Thank you for that advice.

If land managers were compensated for allowing part of a flood plain to be flooded to protect somewhere such as Perth, what compensation level would be appropriate?

**Chris Spray:** This is dangerous territory. The short answer is that such a system has been used south of the border, so I would examine experience there. There are examples, particularly around Lincoln, of that idea being developed.

**John Scott:** I was not aware of that.

**Chris Spray:** Compensatory flooding and setting aside upper parts of catchments mean that farmland is less productive, so payments have been made.

**John Scott:** Is information about that freely available for the committee?

**Chris Spray:** I am sure that it is—we can obtain it from the Environment Agency. As I said, the Danes have done a huge amount of work on the idea, as others must have done. I am sure that we could learn from that.

**The Convener:** We have only 10 minutes left, so we will have to gallop through the remaining questions.

We have received various pieces of evidence about the warnings that ordinary people feel they need, and SEPA has flagged up the use of text messages and websites. What do you think about other communication methods, such as national and local TV and radio stations? In Elgin, we heard about the possibility of using neighbourhood volunteers or street captains. Would SEPA be on board for a discussion about how extensive we could make the flood warning system? Have you thought about those issues?

**David Faichney:** Yes, we would be on board.

**Chris Spray:** We have learned from our flood warning dissemination that some of the most

unlikely methods of communication work exceedingly well.

**David Faichney:** Community engagement is key.

**The Convener:** So you have assessed the effectiveness of existing flood warning systems.

**David Faichney:** We look into that. As you know, we do not disseminate flood warnings to end users. They go to local authorities and the police, whose action is dictated by the drafting of their flood plans.

The key message about flood warning is not the technical solution of getting the warning to the customer but establishing the action at their end. It is a matter of encouraging people to understand that they are at risk of flooding, to know what to do when they receive a warning, to know that the warning is for them, and to take appropriate action.

**The Convener:** In Elgin, we heard from some key businesses that they had developed their own ad hoc systems of flood warning. I do not know whether you read the *Official Report* of the evidence, which was remarkable. Will you give us a brief reaction to that evidence and a wee comment on what it implies about how flood warnings are getting through and people's confidence in them? It sounded to me as if folk were bypassing your warnings because the farmer up the road with a well was a much more effective measure.

**David Faichney:** People will always do that. The point to get across in SEPA's defence is that, in the 1997 and 2002 floods in Elgin, flood warnings were given well in advance to local authorities and the police. The issue was with how that information got to the people on the ground. I am not criticising partner organisations, but it is how people perceive those warnings and act on them that is most important.

**Chris Spray:** We have the opportunity to make progress on the issue as the money that the Government has given to us for a new flood warning dissemination system will be used to address the whole question. It is not just about a piece of kit. It is far more important to me that organisations such as local authorities, the police and other services buy into a system and get the information that they need. Businesses would be another key element of that. We are considering that issue in the project that we taking forward.

**The Convener:** We should also briefly discuss the coastal flood warning. Peter—do you want to come in on that?

**Peter Peacock:** My question is on radar.

**The Convener:** Okay, John can ask about coastal flood warning, and then Peter can come in on radar.

**John Scott:** There is a danger that coastal flooding is becoming the poor relation in the discussion and investigation. What are you doing to fill in the gaps in the historical data on coastal flooding? What are you doing to plan better for coastal flooding? As Bill Wilson mentioned, the risks attached to it may be greater.

**David Faichney:** There is no doubt that we have a significant coastal flood risk in Scotland. The indicative flood plain maps and the work done by the previous Scottish Executive geographic information service identified about 30,000 properties at risk from coastal flooding in Scotland. They are focused in the areas that we would expect—Glasgow, Leith, Inverness and parts of Aberdeen—but beyond those places, and beyond Ayrshire and the Clyde coast, the properties are dispersed and in small numbers. It is difficult to provide flood warnings for individual areas and small communities around the coast.

Following the tragic events in 2005, SEPA installed a flood watch system for the whole coast of Scotland based on the storm tide forecasting service. It splits Scotland into nine coastal zones and gives coastal flood watch alerts when tides are higher than normal—that involves astronomical tides and some storm surge. We work closely with the Met Office to do the best that we can.

Scotland's coastline is long and complex, especially in the west and north and around the islands. It is difficult to understand the localised effects of flooding and coastal surges. Chris Spray mentioned Corpach, Loch Linnhe and so on. Because of the funnelling effects of the Scottish sea lochs, it is difficult for us to provide accurate flood warning for those areas, although we are developing flood warnings. We have flood warning for the Firth of Clyde and the Scottish Government has funded a Scotland and Northern Ireland Forum for Environmental Research—SNIFFER—project that is coming to a conclusion and which reported at the SNIFFER conference last week. That is a coastal scoping study for Scotland that is investigating areas of Scotland that are at risk. It examines and characterises historical flood events to find out where the biggest issues are. The project is similar to the flood risk assessment that we are doing to consider where the biggest problem areas are.

The next step is to put together options for mitigating the flood risk. I imagine that much of that work will centre on flood warning, rather than coastal protection. Raising awareness of risk and flood warning are the first steps.

**John Scott:** Obviously, if you have difficulty assessing the flooding risk, we have a great deal more difficulty, because you are an expert. It has been suggested to us in evidence that we cannot use the events of the past to predict the future. However, we have to create legislation that will stand the test of time, or which at least will be the basis of investment decisions for many years hence. However, the further into the future we get, with 20, 30 and 40-year timescales, the less predictable the risk becomes. How do you advise us to proceed?

**David Faichney:** The first thing that we need to do is to start to understand our coasts and the risks round them a bit better. That involves monitoring and modelling. Modelling should be done for areas in which there is a significant flood risk, including modelling of the hazard of the flooding and the impact on communities or critical infrastructure. We need to identify the coastal areas in which we have the biggest problems, think about how we will monitor and measure the problems and carry out modelling to predict the problems. That will probably be based on the output from the storm tide forecasting service.

**The Convener:** The Met Office suggested in evidence that it would like to work with SEPA to create a joint weather and flood forecasting centre for Scotland. Can I get a brief reaction to that?

**Chris Spray:** Meteorology is key to understanding flood risk. For example, meteorological forecasting is the key to our flood forecasting down the line. We already have an excellent working relationship with the Met Office, which has been established through close working over several years, particularly with the Met Office's Aberdeen base. We give the Met Office a lot of data and vice versa—we run a lot of rain gauges and have other contracts. Anything that can tie the two organisations together would be welcome and we would like to explore that. Enhanced radar would give us great forecasting advantages, particularly for some of the pluvial events that we have talked about.

**The Convener:** So that is a yes—you would like to consider that.

**Chris Spray:** We are happy to work with the Met Office, although I do not know whether there needs to be a formal model.

**The Convener:** In the dying minutes of the session, Peter Peacock has a question on radar, which has been well telegraphed.

**Peter Peacock:** The Met Office evidence indicated that advances in technology mean that it can now get much finer predictions with the latest radar. As Chris Spray said, that might help predict pluvial events more accurately. Is extra radar cover of the kind that is potentially available a

significant priority that we ought to consider in Scotland? How much of a priority do you rate that to be?

**David Faichney:** On sewer and pluvial flooding, we need to consider two issues. The accuracy of and detail in Met Office forecasts are improving—it is going from a 4km model down to a 1.5km model in the near future, which will be useful. We can combine that with the weather radar, which tells us what is actually happening and what rain is falling. That is the key point, because the forecast can be quite good for largish to medium-sized areas, but the small areas are best picked up by the weather radar imagery, because we can see where the rain is actually falling. That can give us some lead time to allow mitigation of the impact of a rainfall event, particularly in urban areas.

**Peter Peacock:** Could we go further on that?

**David Faichney:** The weather radar network in Scotland has been useful in the past. As the network has developed, it has given us better coverage—there were three radars in the past, but now there are four. Improving the coverage again would be welcome.

**The Convener:** I do not want to leave out Bill Wilson on pluvial flooding.

**Bill Wilson:** At present, no body is specifically responsible for giving warnings on pluvial flooding. Should SEPA do that and, if not, who should?

**Chris Spray:** I think that SEPA should do that. We need a single warning authority. As a category 1 responder under the Civil Contingencies Act 2004, we have a role to play. Such a measure would simplify the situation. From discussions with colleagues in the Association of Chief Police Officers in Scotland and the other blue-light services, it is apparent to me that we need clarity of information and command. We see ourselves having that role.

**David Faichney:** Pluvial flooding will happen in a river catchment, and catchment flooding may happen on the same day. How those two things link up is important.

**The Convener:** Paragraph 7.5 of your written evidence suggests that consideration should be given to creating a power for a body to enforce mitigation measures where risk assessments that are carried out under the Civil Contingencies Act 2004 identify significant flood risks. What would be the vehicle for creating such a power, given that the Scottish Government has given no indication that it intends to alter arrangements under the 2004 act?

**Chris Spray:** I am glad that you left that question until last.

**The Convener:** Perhaps you could take the question away and come back to us, if that would

be helpful. We are looking for only a general opinion. It looks as though such a measure will not be in the forthcoming flooding bill, but that does not mean that the issue is not covered in the inquiry.

**Chris Spray:** We value very much our civil contingency relationships with organisations such as ACPOS and find them useful. The close working relationship with those organisations is the way in which we would probably want such a measure to be progressed.

**The Convener:** Do you want to consider the question and get back to us in writing?

**Chris Spray:** We will do that.

**The Convener:** I thank the witnesses.

I suspend the meeting for five minutes to allow a changeover of witnesses and so that people can get a bit of a break.

11:31

*Meeting suspended.*

11:36

*On resuming—*

**The Convener:** We move on to evidence from organisations that are most actively involved on the response side: the emergency services. Assistant Chief Constable Ewan Stewart and Superintendent James Urquhart from Grampian Police represent the Association of Chief Police Officers in Scotland; and David Wynne from Dumfries and Galloway Fire and Rescue Service represents the Chief Fire Officers Association Scotland. Members have copies of the witnesses' written evidence.

I will kick off by asking a compare-and-contrast question. The third paragraph of the ACPOS submission, which is dated 20 November last year, said:

“As you may be aware, responding to a flooding event is not the primary responsibility of the Police.”

Nevertheless, the CFOAS said, in the second paragraph on page 2 of its supplementary submission:

“The Police role in coordinating the emergency phase of any major flood emergency is well established and clearly defined within Scottish Coordinating Group arrangements.”

I know that the statements are not exactly the same because the core function of the police is policing, but there seems to be a different emphasis between what the police feel they are doing and what the fire service feels the police are doing. Given the evidence that we have had about the confusion that exists after a flooding event in terms of the emergency response, I thought that it

would be interesting to get the view of both services on just how those two bits of written evidence knit together. The police witnesses can go first.

**Assistant Chief Constable Ewan Stewart (Association of Chief Police Officers in Scotland):** For me and for ACPOS, it is clear that the police service has a key responsibility, so I would not want the convener or the committee to think that we do not have that responsibility. Essentially, we view ourselves, with the strategic co-ordinating groups, as being responsible for the co-ordination of activity at strategic, tactical and operational levels. The ACPOS written response was coming from the point of view that there are aspects around flood prevention that are not the responsibility of the police. Specifically on rescuing people, I do not think that that is a police responsibility. Other agencies are better equipped and better prepared to provide rescue services.

**The Convener:** Right. I am curious about that because you are presumably saying that the fire service is the agency that would rescue individuals.

**Assistant Chief Constable Stewart:** I see the fire service as having a role in doing so, although it depends on the specifics of the situation. Other organisations, such as the Maritime and Coastguard Agency, also have responsibilities in that respect. Agencies and organisations such as the Royal National Lifeboat Institution and the British Red Cross, rather than the police service, have responsibilities for specific types of rescue.

**The Convener:** So from your perspective, the police do not have a role in rescuing people.

**Assistant Chief Constable Stewart:** That is correct. That is my perspective.

**The Convener:** I asked all police authorities and all fire and rescue services about that in connection with a slightly different matter. There seems to be confusion about precisely who has front-line responsibility for rescuing people. The perception appears to be that the police should co-ordinate such rescues, but there seems to be confusion about precisely who is meant to be in charge.

**Assistant Chief Constable Stewart:** I do not seek to cause confusion. Undoubtedly, the police have a role in co-ordinating efforts, including joint efforts. However, I do not think that the mechanics of rescuing people in flooding situations should be the responsibility of the police service. We are not best equipped or trained to rescue people. That is ACPOS's position.

**The Convener:** Who should rescue people?

**Assistant Chief Constable Stewart:** Obviously, Mr Wynne will offer a view on that. Possibly, the

fire and rescue services are better equipped and prepared for rescues in fast-water and flooding situations, and for calling on other agencies such as RNLI in a co-ordinated way. Military aid to a civil authority may be required. The question whether military resources should be made available should be asked. Those would all be part of an overall co-ordinated response, although I am not for an instant saying that the police do not have a role in such a response.

**David Wynne (Chief Fire Officers Association Scotland):** Confusion might have arisen as a result of the use of the word "co-ordination". It is clear that the police have a role in overall co-ordination when dealing with flood management in its widest context in an emergency phase, which is what I was trying to say in our submission. In June and July last year, when there were floods in England, there was a lack of co-ordination of the rescue services. Rescues were undertaken primarily by the fire and rescue service, but they were also undertaken by the RNLI and a range of other agencies. I made the point in our submission that the Government should designate an agency to take responsibility for co-ordinating the rescue element of a response. The fire service stepped in to fulfil that role when there were floods last year. We believe that the fire service's command-and-control structures and the fact that we already provide an aspect of water rescue capability mean that we are well placed to deliver that role.

**Superintendent James Urquhart (Association of Chief Police Officers in Scotland):** It is possibly worth while stating that generic arrangements are in place for dealing with major incidents of all types, including flooding. It is clear that the police service will co-ordinate the multi-agency response to a crisis and to the consequence management issues that arise, but the actual delivery of the search and rescue effort during a crisis normally sits with the fire and rescue service. At an aircraft or fire disaster scene, the fire and rescue service will co-ordinate the search and rescue effort in the inner cordon, and the police service will co-ordinate the overall multi-agency response to the incident. We are saying that the scene of a flood is no different from other disaster scenes.

**Bill Wilson:** Mr Stewart, you referred to the British Red Cross as one of the agencies that can be involved in rescuing people. The British Red Cross is, of course, staffed almost entirely by volunteers, as is the St Andrew's Ambulance Association. I am curious about the extent to which you use voluntary bodies to deal with a flood disaster. Although the staff of those organisations may be trained in first aid and nursing, they are not trained in flood disaster relief.

11:45

**Assistant Chief Constable Stewart:** I appreciate your point, which is crucial. I do not believe that the police service in Scotland is best placed to say whether the British Red Cross, for example, should deal with flood disasters. The body that has most responsibility for overseeing water rescue must ensure that the British Red Cross meets the necessary training, equipment and risk assessment standards. However, I understand that the British Red Cross and other organisations may be willing to assist agencies in flooding and rescue situations.

**Bill Wilson:** Does that not suggest a slight lack of clarity? The police are the co-ordinating body, but you say that the body responsible for water rescue should decide whether assistance from the British Red Cross and other voluntary bodies is suitable. Is there not some room for confusion in how voluntary bodies are used, if a body other than the co-ordinating body makes such decisions?

**Assistant Chief Constable Stewart:** Again, I appreciate your point. However, as James Urquhart pointed out, the police have a generic co-ordination role when responding to major incidents. Part of our role is to identify the body that is best placed to deal with the situation, which is often the fire and rescue service. We ask our colleagues in the service, as experts in the field, to tell us how best to tackle the rescue—what equipment and personnel they require and what techniques they need to use. The police service has an overall co-ordination role, but we do not deliver the response—we act as a facilitator. Apart from the investigation of crime, that facilitation role is, in many instances, our day-to-day business. ACPOS believes firmly that the technical aspects of flood rescue should be dealt with by the people who are best qualified to do that.

**David Wynne:** Agencies such as the RNLI and the Maritime and Coastguard Agency did not have the infrastructure to deal with flood events on the scale that England experienced or to sustain services over a long period. We found that different agencies can bring added value and provide services in a particular context, but the fire service took responsibility for ensuring that emergency responders were safe and properly accounted for and that deployment was co-ordinated and appropriate to risk. I do not think that a conflict arises, but we need to designate a lead agency to take responsibility in flood events.

**Peter Peacock:** I want to get a clearer picture in my mind about what happens when there is a flooding incident. The difference between flooding, a plane crash and a fire is that you get some advance notice—four, six or eight hours—of a flood. Once you are in the bunker, who calls the

shots? Is the chief constable or the chief constable's delegated officer the person who says what measures should be put in place, or is that the role of the local authority chief executive?

**David Wynne:** The system does not work that clinically. In reality, the first indication that a response is needed is usually a 999 call. Fire units and police and ambulance officers are deployed at that stage.

I have limited experience of flood disasters, but I dealt with the Yorkshire floods in 2000 at both gold and silver levels.

**The Convener:** Can you explain the meaning of gold and silver levels? We are not familiar with some of the terms that you normally use, so you will have to translate them for us.

**David Wynne:** The terms relate to the system that underpins emergency response, under the Civil Contingencies Act 2004. At gold level, senior officers from a range of agencies, including the police and the fire service, come together to take strategic decisions on deployment issues. Silver level tends to be at the sharp end of an incident and involves the co-ordination of responses. In most, if not all, circumstances, the chief constable will take responsibility for the gold command of any major incident.

**Assistant Chief Constable Stewart:** Perhaps I can illustrate Mr Wynne's comments with the example of a flooding incident in Elgin. When Grampian Police became involved in the situation, the local superintendent and chief inspector were, in a sense, the police commanders and, with the local authority, the fire and rescue service and SEPA, put in place the response plan. Discussions were then held with the SCG and the local authority.

The decision to be made is whether the situation should be managed operationally by the local commander—the person in charge of policing in Moray, for example; whether it should be moved up to the SCG, which would assume a more tactical role; or whether the full-blown system of strategic, tactical and operational command should be initiated. The benefit of that framework for managing incidents is that that is how the emergency services conduct their day-to-day business, so we well understand its mechanics.

**Peter Peacock:** So in the incident room you have the chief superintendent—or whoever it might be—the fire officer, people from the Red Cross and St Andrew's Ambulance—

**Assistant Chief Constable Stewart:** You have whoever is needed.

**Peter Peacock:** The meeting is chaired by the representative from the police service, who says, "We need this from the local authority and that

from you, and we want it in place in the next half hour." Is that how it works?

**Assistant Chief Constable Stewart:** Yes. However, I should point out that, with incidents such as those in Elgin, although the senior police officer chairs the meeting, he is still reliant on the experts around the table. In this, as in so many other issues, the police are not founts of wisdom.

**Superintendent Urquhart:** I was present at the most recent flooding incident in Moray. In the early stages of an event, when a flood warning or severe flood warning has been issued, the SCG will come together as a tactical multi-agency group. In that pre-crisis stage, it could be chaired by the local authority. In fact, in most escalating incidents, the early stages will be chaired by other agencies—depending, of course, on the nature of the event.

**Peter Peacock:** But the rules of engagement are clear.

**Superintendent Urquhart:** They are exactly the same. The chair will pass formally from the local authority, say, to the police when the group starts to discuss the possibility of evacuation.

**The Convener:** In its supplementary submission, the CFOAS says:

"For the majority of inland water rescue incidents, the Fire and Rescue Service will be called to respond to deal with any incident"—

which I take to include flooding incidents—

"and to work with other agency commitments as they are made available. Where a response extends beyond the Fire and Rescue Service it is suggested that the Service should be given the lead coordination role for specialist water rescue resources, with overall coordination of the emergency response arrangements being undertaken by the Police under Strategic Coordinating Group arrangements".

Are you saying that you would like that change to be made to the existing system?

**David Wynne:** No. All I am saying is that that does not happen at the moment. No agency has the lead responsibility for the specific co-ordination—

**The Convener:** You are suggesting that your service

"should be given the lead coordination role"

in those circumstances.

**David Wynne:** Yes.

**The Convener:** So you are recommending to us that you would like the fire and rescue service to fill certain gaps.

**David Wynne:** Yes.

**John Scott:** That is very helpful.

On our recent visit to Elgin, we were dismayed by the perception that residents receive very little warning of floods. For example, no one goes around in loudhailer vans or knocks on people's doors. Regardless of whether that is no more than a perception, do you think that the police could do more to warn people before an event occurs?

**Assistant Chief Constable Stewart:** I am not sure whether when you were in Elgin you heard about FrontWorks, which is a system that operates in the Moray area.

**John Scott:** Is that the system that was introduced in 2005?

**Assistant Chief Constable Stewart:** Yes. It was introduced after the two floods as a result of some of the lessons that were learned. It allows the information from SEPA to be sent out electronically to mobile phones and to telephone subscribers, provided that they have registered—there is obviously an issue with the fact that people have to be registered to receive the information. However, we can get the information out quickly. My force and three other forces are not keen to go knocking on doors in flooding situations. We believe that the information should be disseminated by the body that holds the information. That is the principle to which we subscribe.

**John Scott:** Should SEPA disseminate the information in such cases?

**Assistant Chief Constable Stewart:** Yes. In my view, SEPA owns the information. I say that because it is an issue of resources. How would we get that information out?

**The Convener:** How would SEPA get it out?

**John Scott:** Indeed. The police are likely to have more people on the ground than SEPA in such a situation.

**Assistant Chief Constable Stewart:** Our view of how to get the information out might be different from SEPA's evidence. It would be useful to implement a system solution, such as FrontWorks. The Environment Agency has a similar system in England and Wales. Such systems could be used in not just flooding but wider emergency situations. It is particularly challenging for the police service to warn of flooding. Yes, we will have people on the ground, but, in the event of a major incident, they will be doing other things. We are quite limited in how we would get the information out. It is virtually impossible for us to make phone calls to people—that would be very challenging. It might be possible to use vehicles and tannoys, but that is not fantastically effective. It would be useful if we could come up with a national system similar to FrontWorks, whereby in flooding and other major incidents, such as counter-terrorism incidents, the

holder of the information is able to pass it on to the holder of the FrontWorks system, through which it would be disseminated to the public.

**John Scott:** I hear what you are saying. Since we visited Elgin we have received a letter from Moray Council, which states:

“Currently there are 242 Local Authority housing tenants, 46 private homeowners, 15 commercial properties, 26 Council Members, 62 senior Officers and 15 emergency service recipients”

who are connected to the council's system. Obviously, that is where the system falls down—a very small proportion of the people of Elgin are connected to it and people have to apply to get on to it. Perhaps the system is just not working. There is a problem with the small number of people who have registered, despite the lessons learned in 1997 and 2002, and with the fact that people have to have their mobile phone or computer switched on to get the information.

I respectfully suggest that it would not incur a huge cost to have someone go round with a loudhailer van saying that there may be a flood in 12 hours' time and advising people to prepare themselves—word would soon get round that the police were saying that there might be a flood. I do not think that the FrontWorks system is sufficient to deal with the elderly or people who do not have their phone or computer switched on or who are having a nap. I do not mean that as a criticism; I am offering advice, which I hope is constructive.

**David Wynne:** I was interested in your discussions with SEPA about similar issues. I am aware that following the floods in Gloucestershire last year, the fire service, police and local authority worked much more with communities on signing up for warning schemes, on what people do with a warning when they get it and on what communities can do to assist themselves—not necessarily through flood management schemes but through other practical measures. I do not know whether you will go into that area later, but it seems to me that, for all the reasons that have been outlined, the issue is about not only the warning scheme but what people do to help themselves after the warning is given.

12:00

**Superintendent Urquhart:** As we said in relation to the Elgin floods, there is a pre-flood situation shortly before a crisis. The police service will do the warning and informing when we know that a crisis is imminent, and protection of life is uppermost in our minds. Today, however, we are trying to highlight the pre-flood situation. There are better systems in place and it is the role of other agencies, which are also category 1 agencies under the Civil Contingencies Act 2004, to inform

and warn of impending floods, so that, in the final crisis, we can spend our time picking up the elderly people who are in their homes and who have not received that message.

**The Convener:** So when the water is running down the street, the guys in the yellow jackets will be there. However, you are saying that there is a problem 12 hours before the waters arrive.

**Superintendent Urquhart:** No. When we get the severe weather warning, which lets us know that flooding is imminent and evacuation is likely to take place, the police can go out with the loudhailers and knock on doors, because there is an issue of the protection of life at that point. We are saying that other agencies are better placed to deal with the early warnings. There is no point in waiting until an hour before the Lossie floods, for example. For a considerable amount of time prior to that, SEPA and the local authority would be in a position to get warnings out to people.

**The Convener:** The difficulty is that every agency will say what you have said about resources, manpower and so on.

**Superintendent Urquhart:** The issue for the police service is that we are an emergency responder. Before the start of the emergency, other agencies have to take responsibility for warning and informing.

**Bill Wilson:** I think that it was Mr Stewart who said that the police cannot call people, and I appreciate that a police officer cannot call everyone. However, some political parties have, in the past, used automated call systems for political campaigns, and it occurs to me that it would be perfectly possible and, I presume, fairly easy for the police to set up a system that could call most of the houses in an area.

**Assistant Chief Constable Stewart:** That is what the FrontWorks system does.

**Bill Wilson:** People have to sign up to the FrontWorks system. I was thinking of an automated system that would call all the landlines in a risk area.

**Assistant Chief Constable Stewart:** I gather that we need people to sign up to the system because of data protection issues. However, it is important to state that, in the run-up to the crisis point—when the water spills over—it takes the police some time to respond. We need timely information from SEPA because we need time in which to marshal our resources. In areas such as the Moray region of the Grampian Police area or in the Dumfries and Galloway Constabulary area, there are not a lot of people available, which means that resources must be brought into those areas. As James Urquhart said, that time could be best spent using other systems to get material out.

At the moment, forces have service centres or call centres. However, they are not geared up or resourced to make the calls that you describe. There is an identified gap there that we need to fill.

**John Scott:** I think that the committee agrees that it must be filled. In Elgin, it was known that the flood was coming 20 hours beforehand. It is a shame that the local authorities or the people in the strategic command group were aware of the information for such a length of time but people were still surprised when their homes were flooded because the information was not disseminated. The matter needs to be addressed seriously.

**Assistant Chief Constable Stewart:** I believe that there are opportunities for us to give more information to members of the public to make them more aware of the whole flooding scenario. There is also an opportunity—we have had a brief discussion about this—to give people in areas that are affected by flooding information packs that tell them what they can do to help themselves. In addition, people must take some responsibility by signing up to a notification scheme such as FrontWorks or whatever. They must be made aware of those measures, so there is a community education aspect to the issue as well.

**Peter Peacock:** Notwithstanding how you warn people, what do people ask you to do on their behalf when there is an incident? Do they ask you to get a boat and rescue them? Do they ask for help in taking their furniture upstairs? Do they ask for help in stacking sandbags?

In your experience, when people have been warned and have taken whatever actions are appropriate—leaving aside the question whether they know what to do—what difference does that make to the rescue effort? If people are well prepared, does that allow you to cope with the bigger tasks and to deal with the incident more effectively?

**David Wynne:** If it is unpredicted flooding or flash flooding—which is predictable to a degree, but only within a very short timescale—we tend to be inundated with calls and to prioritise those cases in which there is a risk to life or in which people require to be rescued. When the demand for those services reduces, we start to help people remove furniture or to help businesses—we do a range of things.

It is not easy to describe the exact process that we go through because we are a reactive service. We take intelligence from the Met Office and from flood watch and other flood warning systems. We also take intelligence from what we are doing on the ground in deciding what action to take and how best to cope with the situation.

I do not know whether that adequately explains how it feels for the fire and rescue service. We go

from a period of reactivity to one of proactivity. When we are in the proactive period, we can start to build up strategies and use volunteers and others.

**Peter Peacock:** In your experience, are people generally extremely poorly prepared for such events?

**David Wynne:** Yes.

**Peter Peacock:** Is there a sense that they do not know what to do to prepare for such events?

**David Wynne:** That is what I was trying to say earlier. If communities and individual households that are at risk understand the nature of the risk and some of the measures that they can take to mitigate that risk, that makes it much easier for the emergency services to deal with the situation.

**Peter Peacock:** You advise the public on fire prevention in the home. Do you advise on how people can protect their homes from flooding?

**David Wynne:** No, we do not. The point was raised recently by Dumfries and Galloway joint fire and policy authority. They asked whether we could undertake that role, and I think that there is scope for and merit in our doing so.

**Peter Peacock:** You believe that, if people were better prepared, there would be fewer demands on your service, you would be less distracted from the key tasks in dealing with the emergency and it would be easier to manage the situation.

**David Wynne:** Yes.

**Peter Peacock:** Is it worth investing in that? Is that the right way in which to look at the problem?

**David Wynne:** Yes. In my view, it is.

**Peter Peacock:** Okay. Thank you.

**The Convener:** We have run slightly over time, but I would like some brief comments on the training for dealing with flood emergencies. There was a tragic case in England in which a circumstance could not be resolved and somebody lost their life. Allied to the issue of the training that is required is the matter of the resources that are available in respect of the various bits and pieces of equipment that must be brought into play. Do you have a view on how those resources are shared between the various services? Do you feel that some services get more resources but play less of a role? Should resources be allocated on a differential basis?

**David Wynne:** I am not sure that I can comment on the latter point.

**The Convener:** I know that everybody wants more money all the time. We understand that and take it as read.

**David Wynne:** From the fire service's perspective, I argue that people who take on activities that involve entering fast-flowing water are putting themselves at higher risk and therefore need more training, personal protection and specialist equipment. Whether or not we have a duty and a role to deal with floods, we are called to deal with them, including making individual and multiple rescues. The Chief Fire Officers Association of Scotland believes that the public demand that of the fire service. In managing the risk to our staff of discharging that duty and role, we are keen to ensure that we do the work correctly, with the proper training and so on. We do not have a statutory duty to do the work, albeit that there is a halfway position in Scotland. The matter is being considered at United Kingdom level by Sir Michael Pitt, who is keen for a statutory duty on the fire service and other responders to be clarified.

**The Convener:** It is fair to say that the matter is controversial. There are circumstances in which the emergency services do not go in and circumstances in which individuals do go in but are breaching their employment guidelines. There is confusion about what is and is not expected and required. Both witnesses are saying that it would be better if we had a clear indication of precisely who is responsible for what in such circumstances.

**David Wynne:** Yes. If we have a duty, we can make provision to discharge it properly and safely. I know that the matter applies to the police as well, albeit in a different way—we clearly got our act together before we came.

**John Scott:** That is helpful.

Earlier in our inquiry, we heard that, during pluvial flooding, manhole covers come off and danger points are created, presumably for your staff even more than for others who are out and about. That was a revelation to me, and it concerns me. People could drop down a manhole and into a sewer because the cover has been lifted off. SEPA made the point in its evidence that there is poor understanding of pluvial flooding. Do you agree that additional pluvial mapping would help you to do your job and reduce the risks?

**David Wynne:** I will answer honestly. I am not sure that the risks that are associated with those circumstances occur in known flood areas. More often than not, they occur in areas that are not subject to flooding but where flash floods occur when there is significant rainfall. When a risk is known, it is relatively straightforward to deal with and manage through pre-planned activities, but often we find ourselves dealing with areas where we do not know the risks, only that there is water there. It is important to know what the risks are and to take decisions on the day in real time.

**John Scott:** So additional mapping would benefit you and help you and your staff to do your jobs more safely.

**David Wynne:** We already use SEPA's risk maps for generic purposes and we consider local risk circumstances through historical trends to help to improve our response.

**Superintendent Urquhart:** From experience on the ground, I would say that mapping and the improvement of data are essential. Again, it is a matter of trying to prevent a crisis. The earlier we have the data, the more able we are to identify the risks.

Again, I use Moray as an example. The flood project in Moray has provided the multi-agency consequence management group with accurate data on where the River Lossie, for example, is likely to spill over and the communities that are likely to be flooded. We can therefore focus our evacuation efforts on those areas rather than having to do a carte blanche evacuation of Elgin. The data in the Elgin project have been almost 100 per cent accurate for the past few years.

**The Convener:** Thank you all for coming along and giving evidence. As always, I extend the opportunity. If there is anything that you wish we had asked you, or something about which you think we should have more information, please feel free to communicate it to the committee clerks and we will take it on board. We are not finishing our flooding inquiry today—not by a long shot—so you might want to watch what we have to say when the report comes out.

## Subordinate Legislation

### Environment Act 1995: The UK Strategy for Radioactive Discharges—Draft Statutory Guidance (SG2008/13)

12:15

**The Convener:** We have two items to consider under agenda item 3.

The guidance is not actually a Scottish statutory instrument, but it is subject to the normal negative procedure. A letter from the cabinet secretary is with the papers, along with an extract from the Subordinate Legislation Committee's report, although it did not identify any significant points. No concerns have been raised in advance by members, and no motion to annul has been lodged. Are there any comments or concerns?

**Members:** No.

**The Convener:** Do we agree not to make any recommendation in relation to the guidance as detailed on the agenda?

**Members** *indicated agreement.*

### Sea Fish (Prohibited Methods of Fishing) (Firth of Clyde) Order 2008 (SSI 2008/29)

**The Convener:** Members have a letter from the cabinet secretary about the order, which came into force on 14 February and broke the 21-day rule. The letter sets out the reasons for that and the cabinet secretary has asked officials to investigate means of avoiding that situation in future. Notwithstanding that, no member has raised any concerns, and no motion to annul has been lodged. Are there any comments or concerns?

**Members:** No.

**The Convener:** Do we agree not to make any recommendations in relation to SSI 2008/29 as detailed on the agenda?

**Members** *indicated agreement.*

## Petitions

### Lamlash Bay (No-take Zone and Marine Protected Area) (PE799)

12:17

**The Convener:** We move on to consideration of petitions. Members have a paper before them outlining developments in three petitions that have been referred to the committee.

PE799 seeks to establish a no-take zone and marine protected area in Lamlash bay. A consultation is on-going in the general sense that one is being conducted on the subject of a community marine conservation area in Lamlash bay. The petitioner has asked the committee to keep the petition open while the consultation is undertaken and the legislation prepared to ensure that the promises are delivered. We have to decide today whether to close the petition in light of the cabinet secretary's announcement or keep it open, as requested by the petitioner.

If we keep the petition open, we will have to keep bringing it back on to the agenda. In view of the cabinet secretary's letter, it might be more appropriate to close the petition. When the proposed marine bill comes to this committee, it might be of interest to look back at the experience of this petition and, indeed, of those that we will talk about next. Do any members have a view?

**Jamie Hepburn:** I do not feel strongly about it either way, to be honest.

**John Scott:** I am happy to accept the conveners' recommendation.

**The Convener:** I suggest that the petition be closed, but that we register with the clerks the relevance that the issue might have to the marine bill discussions that we will have in the future.

**Jamie Hepburn:** I assume that we will communicate that to the petitioners.

**The Convener:** Yes, that would be appropriate; we should thank them as well.

### Ship-to-ship Oil Transfers (Firth of Forth) (PE956 and PE982)

**The Convener:** PE956 and PE982 relate to ship-to-ship oil transfers in the Firth of Forth. The petitions fall into the same category as the one that we have just discussed. On 1 February, Forth Ports plc announced that it was not proceeding with an application for ship-to-ship oil transfers in the Firth of Forth. The petitioners have asked that their petitions be kept open until new UK legislation is in place. Again, we have the same options: we can close the petitions in light of that

announcement and the promise of legislation; or we can keep the petitions open until the legislation is delivered.

The second option is so open-ended as to be almost pointless, and in those circumstances I recommend that the petitions be closed, that both petitioners be thanked, and that we look back at the situation in the light of any marine bill that the Scottish Government introduces. Are we agreed?

**Members** *indicated agreement.*

**Des McNulty (Clydebank and Milngavie)**  
**(Lab):** It might be worth writing to the cabinet secretary and highlighting the fact that, in closing the petition, we are expecting the issue to be addressed in the context of any marine bill.

**The Convener:** Okay. I do not know whether there is any point in writing to the UK Government in the same terms, but it will not do any harm.

I close the public part of the meeting.

12:21

*Meeting continued in private until 12:41.*



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