

**Chartered Insurance Institute members only video August 2012.
Transcript with slides (37,641KB).**

Written and presented by David Crichton. Running time 34 minutes.

[Image 1, Title. Then fade to Crichton]

Professor David Crichton

“Floods and Flood Plain Speaking”
August 2012
A training video for the Chartered
Insurance Institute.

Well, what do you think about this weather? Practically every month last year was weird and this year is worse. We've had the driest March in fifty years, the wettest April in a hundred years, and the coldest May in three hundred years, with floods, hailstorms and tornadoes. April to June twenty twelve has been the wettest second quarter in the UK since records began in nineteen ten.

In twenty twelve we had the wettest start to a British summer in over a century and flood insurance losses have so far been over half a million pounds, the highest since summer two thousand and seven.

But it's not just the money.

Hello, my name is David Crichton and over the last twenty years I've talked to hundreds of flood survivors. I don't call them victims, because they have shown great courage to get their lives back on track. I never fail to be moved by their terrible experiences. I really care about what's happening to these people, especially people in places like Upton upon Severn, the most flooded town in Britain. It has flooded seventy eight times since nineteen seventy.

[2. Flooded house]



This picture shows a photo I took in Hull in two thousand and seven. I am told that at least twelve people from Hull killed themselves by stepping off the Humber Bridge after the floods. They are the true victims.

The thing is, what really saddens me, is that a lot of these flood losses could have been prevented easily and at very little cost.

[Crichton]

So I now think it's time for some plain speaking.

In my opinion, insurers have messed things up a bit. In attempts to please governments and property developers in England, they have prevented market forces from discouraging building in flood hazard areas for more than fifty years. They have also made life really hard for those members of the public caught up in the nightmare of flooding and having to pay increased premiums as a result, usually through no fault of their own.

Cosy chats with senior civil servants or moaning about flood defences will not solve the problem, nor will papering over the cracks with a flood levy. It is time that insurance professionals by which I mean CII members, got involved in actually reducing the risk. As professionals we really need to be much more pro active about managing flood problems because hardly anyone else seems to be doing it properly. Years ago, insurers should have been talking directly, face to face with local planners, property developers, and communities to warn them of the folly of building in flood hazard areas. Local authorities can be persuaded to stop building in flood risk areas and to get on with sustainable flood management. I have been talking to them since nineteen ninety five, in nineteen Flood Liaison and Advice Groups, or "FLAGS" from Shetland to the Scottish Borders. I am a founder member of every FLAG, covering ninety four percent of the population in Scotland, and believe me, it works: ...- Once you earn their respect. Unfortunately I am the only insurer to have attended FLAG meetings and there are no FLAGS in England.

I want to cover five aspects in this video:

[3. Five sections]

Five Sections

- The causes of flood losses.
- The ABI Statement of Principles.
- The problems of vulnerable people.
- What can you do to help?
- Public health problems.

I'm going to try to deal with all of these in a very short video, with lots of pictures. If I go too fast, remember you can always use the pause button if you want to study a slide for a bit longer and you can find more details on all of these subjects in the Flood Fact File on the CII web site and in the articles I'll show you at the end of this video.

[Crichton]

So, let's look at the first topic, the causes of flood losses.

The amount of new build in flood hazard areas varies enormously in different parts of the country as government figures show.

[4. Percentages]

Percentage of new buildings in areas at risk of a 100 year flood by selected government office regions

| Year | South East | Yorkshire and Humber | London | Average for England | Average for Scotland, Wales, and N Ireland |
|------|------------|----------------------|--------|---------------------|--|
| 2007 | 5 | 14 | 16 | 8 | 0 |
| 2008 | 5 | 14 | 23 | 9 | 0 |
| 2009 | 9 | 10 | 21 | 11 | 0 |
| 2010 | 5 | 11 | 21 | 9 | 0 |

Source: Land use changes. Table P251 published by the Department of Communities and Local Government, 2011.

The first column shows figures for the South East of England. You might expect this area to have a high incidence of flood plain building, due to the shortage of building land and pressure for new development, but the amount of new development in their flood hazard areas is now lower than the English average. So it can be done and perhaps all my meetings with council officers in Kent and Sussex have helped a little.

The figures for Yorkshire and Humberside, (in the second column), on the other hand are worrying. They have a higher than average percentage of high risk development despite the fact that they have much more building land available on high ground. Clearly their planners need some education about insurance issues. I have worked with North Yorkshire council and planners in Bradford and Sheffield, but a lot still needs to be done in the rest of Yorkshire and Humberside. Unfortunately there's a limit to what I can do on my own without any support from the insurance industry and this area is going to be a real problem for insurers in the future.

London figures are high, but much of this development is replacing older buildings and does not necessarily mean an increased exposure for insurers. In areas such as Docklands, the ground floors of new apartment blocks are often designed for use only for car parking and upstream of the Barrier, London is well protected.

Use the "pause" button to study this table and consider its implications.

Note the last column. Scotland, Wales, and Northern Ireland, like almost all of the rest of Europe, do not of course allow any building in areas of flood risk.

[Crichton]

The differences are clearly down to the attitudes taken by different local authority planning departments, and the local circumstances. If you work for an insurance company, perhaps you could find out your own company's claims ratios by region? This would give you a good idea of where your Company's problems lie.

If we now compare the different countries of the UK, you can see how the differences have already built up between them.

[5 Flood exposure]

Flood exposure by country in 2011.

100 year return period river, coastal and surface water, excluding dam break.
(Scottish figure for 100 years is negligible so 200 year figure is shown.)

| Country | At-risk households (000) | Proportion of existing properties at risk | Proportion of new build in flood hazard areas (average) |
|------------------|--------------------------|---|---|
| England | 5,200 | 23.1% | 11% |
| Wales | 357 | 27.9% | 0% after 2004 |
| Scotland | 109 | 4.54% | 0% after 1995 |
| Northern Ireland | 46 | 5% | 0% after 2006 |

Sources: Office for National Statistics, the Environment Agency, DCLG, the Welsh Assembly, the Scottish Government and the Northern Ireland Rivers Agency. Scottish figures exclude the county of Moray. The Welsh Assembly has now instructed planners to resume flood plain development despite the 2004 planning rules.

This table shows the percentage of properties at risk of a one hundred year return period flood.

The North of England has suffered particularly badly from floods in recent years, especially Yorkshire, Humberside, Cumbria and Morpeth.

Again, use the “pause” button to study this table and consider its implications.

[Crichton]

At the Northern Flood Conference last year hundreds of flood survivors from these areas and three local Members of Parliament gathered to discuss flood insurance issues. I was the only person from the insurance industry who bothered to accept their invitation to speak to the delegates. I explained to them why the insurance industry was increasing their premiums by seventy per cent on average each year and why premiums and excesses would keep going up. I answered many questions from the audience and the MPs. It was tempting to say that if only they could move a few miles North to Scotland most of their flood problems would be solved.

So what is the solution?

In my article “Flood Plain Speaking”, I set out a simple, five point list of common sense measures by which the government and insurers could solve England’s flood problems at no cost to the taxpayer or the insurance industry.¹ Three of the

¹ A quick, simple, popular and cheap five point plan.

(Not part of the script, copied from ‘Flood Plain Speaking’ and inserted for information):

1. Remove the immunity against legal actions for negligent misrepresentation. Apply legislation along the lines of s101(1) of the Law Reform (Miscellaneous Provisions) (Scotland) Act 1985. This should reduce the amount of new build in the flood plain and ensure that those occupying new build in the flood plain do so knowing the risks. By enabling insurers and flood survivors to recover their costs from those experts who failed to warn of the risks or misrepresented the location as being safe, premiums should rapidly reduce to more affordable levels for new and recent build.
2. Revise building regulations for new build along the lines of the Scottish building standards to make properties more resilient and resistant to flood damage. Enact legislation to make the new building regulations apply retrospectively after flood or storm damage so that the costs of

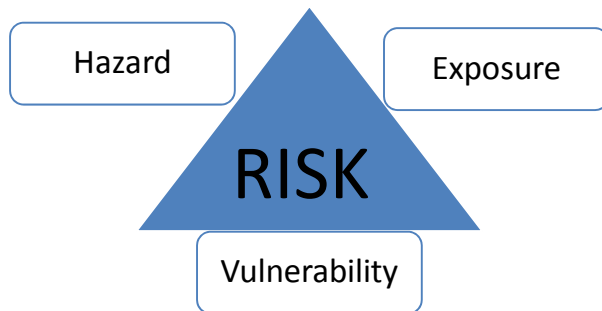
measures have already been adopted in Scotland and the other two are being blocked by the insurance industry itself.

Assuming that these common sense measures will not be implemented in England, we need to look at some alternatives.

Insurers and governments around the world have found it useful to think of risk in terms of what I call the “Crichton Risk Triangle”.

[6. Risk Triangle]

The “Crichton Risk Triangle” (© Crichton, 1999)



This suggests that “risk” has three elements, hazard, exposure and vulnerability. If you picture them as the three sides of an acute angled triangle, then the amount of risk is represented by the area of the triangle. If you can reduce any one of the sides you can reduce risk. - It doesn't matter which side, just pick the ones that are easiest and cheapest to reduce. So let's start with Hazard.

[7. Risk Triangle - Hazard]

Controlling hazard using flood defences can be the most expensive and difficult way to reduce risk. It is strange therefore that so many often see this as the only solution.

resilient reinstatement are borne by insurers and existing stock is made flood and storm resilient. (The author has discussed this with senior managers from all the major insurers and they are happy for this to go ahead as long as there is the level playing field of legislation.)

3. Create statutory duties on local authorities to clean and maintain watercourses, gully pots, culverts, SuDS installations etc at least once a year (as in Scotland) and make them legally liable if they fail to do so adequately and a flood results (as in Scotland).
4. Require housing associations and public landlords to provide automatic “free” insurance with rent cover on domestic contents unless the tenant opts out. The premium would be built into the rental figure. Opting out should not result in a reduced rental. Such a scheme would avoid adverse selection and thus keep premiums low.
5. Require all owners of reservoirs greater than 25,000 cubic metres in volume to hold public liability insurance with a limit of indemnity of at least £1million, and where people live or work in the dam break danger zone, require reservoir owners to install transponders for Permanent Scatterer Synthetic Aperture Radar Interferometry (PS InSAR) monitoring of movement in dams or embankments. This should detect sub millimeter movement and give early warning of failure. This should save lives and help to prevent premium increases for the million or so people currently at risk of dam break floods. Transponders cost less than £100 each.

None of these measures would require additional funding from the taxpayer. Spending on cleaning and maintenance would be recovered from reduced flood repair bills. Benefits are not limited to new properties. Even older properties should benefit because floods of those properties are often due to flood plain development upstream or a failure to clean watercourses. Owners or insurers of such properties would therefore still be able to claim recovery of their costs.

Flood defences can spoil the character of a town and can block the view of the river, unless they are made of glass.

[8. Glass flood defence]

New flood defence in Keswick

Source Keswick Flood Action Group



... Preferably self cleaning glass as in Keswick.

[Crichton]

Flood walls can give a false sense of security, retain surface water and stop it draining away. They are also expensive to maintain and pose a heavy burden on future generations. It can often be cheaper to have a “buy back and relocate” programme as in Scotland, USA, and Canada, where at risk buildings are bought and demolished, but there is no funding for this in England so it can't even be considered.

There are alternatives.

1. First restore the flood plain wherever possible by having tight control on building there.
2. Remove flood embankments and land drains protecting agricultural land and parks upstream so they can act as flood storage.

[9, River Dee]

Agricultural Practices



River Dee at Maryculter, November 2002
Source: Aberdeenshire Council

For example, in Scotland and Wales some local authorities have persuaded farmers to agree to their flood embankments being breached to restore floodplain storage. Farmers and landowners have found that this is a cheap way to fertilise their land from flood waters. In this aerial photograph you can see the remains of the old flood embankments. This flood storage helped to save the city of Aberdeen from any subsequent flooding. This was achieved at almost zero cost; the council simply lent

the farmer an excavator for a few days. The council deliberately decided to use the caravan site as additional flood storage.

[Crichton]

Surface water or heavy rainfall floods are becoming more common with climate change and this hazard can be controlled simply and cheaply. There are a number of measures which can be taken.

1. Regular cleaning of debris and weeds from watercourses and culverts.
2. Maintenance of drains and sewage systems including regular cleaning of gully pots.
3. Ensuring that sewage and drainage systems are not overloaded by new developments.

In Scotland, new developments are not allowed unless there is adequate sewage capacity but mistakes can still happen.

[10 Dundee.]

Centre of Dundee, 16th August 2004



A new waste water scheme was opened in Dundee to meet the EU Bathing Water Directive, but engineers are not infallible and the system had insufficient capacity. The result was raw sewage rising up through the gully pots in the centre of the city. This has now been resolved by more engineering.

[Crichton]

Many local authorities are now using SUDS, that is, Sustainable Drainage Systems, because they are cheaper than traditional drainage pipes.

On behalf of the ABI, I helped with the preparation of the national manuals for SUDS installations but the problem is that maintenance issues are still unresolved, and many SUDS schemes are badly designed, sabotaged by local residents, and located in unsuitable places.

Some councils such as Oxfordshire even see SUDS as a cheap substitute for flood defences despite the fact that often they can make flooding worse.

The existence of a SUDS installation is a material fact and should be declared by the proposer. Most insurers know little or nothing about SUDS and don't even ask about SUDS on their proposal forms, but they should. If a SUDS installation is present it could make the flood risk severe and should be treated with extreme caution.

In Scotland, you do not need to worry about SUDS.² All new developments have SUDS but these are designed to strict government standards and are well maintained by a Scottish Government agency. I helped to write award winning guidance on drainage impact assessments which is now used throughout Scotland.

[11, SUDS basin.]

Sustainable drainage systems (SUDS)
A SUDS pond complete with trolleys and rubbish.



The picture shows that supermarket trolleys and rubbish can be a problem with SUDS ponds. In this example, after I discussed it with the council, they persuaded Tesco to remove trolleys and rubbish regularly from this SUDS pond which is beside their car park.

[Crichton]

EU Directives are often transposed into UK legislation without considering the consequences. The EU Waste Directive results in fly tipping into watercourses, the EU Habitats Directive is often used as an excuse to fail to clean watercourses, and the EU Water Framework Directive forbids the enlargement, dredging or other modification of watercourses to cope with climate change.

I should mention that none of these are a problem in Scotland where local authorities have a statutory duty to clean watercourses regularly. Thanks to concerted lobbying by myself and several environmental NGOs all working together, Scotland is the only country in the EU where sustainable flood management takes priority over the Water Framework Directive. Incredibly the rest of the insurance industry showed no interest in this critically important legislation and it remains illegal to modify rivers and lakes in England, Wales and N. Ireland to adapt to the increased rainfall from climate change. There might be a case for insurers establishing some organisation to keep an eye on future legislation so it can lobby Parliament to protect the industry's interests.

Let's look at another side of the risk triangle.

With river, coastal and dam break floods, the hazard zones can be mapped relatively easily, and the risk can be reduced by controlling exposure.

[12. Risk triangle - exposure]

² Crichton, D., 2006. "Floods and SUDS in Scotland and elsewhere. 44 frequently asked questions." 46pp. <http://www.ilankelman.org/crichton.html>

We have already seen how little exposure control there is in England. Between two thousand, and twenty ten there was an average of eleven percent of all new properties each year built in flood hazard areas.

[Crichton]

Building in flood hazard areas is not only hazardous for the newly built properties; if there is building in flood plains this can also increase the hazard upstream or downstream for existing buildings by removing flood storage. That is why exposure control using land use planning is so important.

For surface water floods, the best solution is hazard control and vulnerability control:

[13. Risk Triangle - Vulnerability]

Vulnerability can be expensive to manage; it means making building regulations more resilient for new build as in Scotland. Again this is where the insurance industry could make a difference by providing claims data and favourable rates for flood resilient buildings.

[Crichton]

To assist with claims validation and estimation and to establish the costs and benefits of resilient reinstatement, with the help of the ABI, I established the British Flood Insurance Claims database in 1995 at Dundee University. This is now probably the biggest flood insurance claims database in the world, containing claims data from the twenty five leading insurers. These insurers receive free analyses of aggregate data to help them with pricing and reinsurance decisions. These data have also been used by the Audit Commission to assess the value of flood defences.

An approach which addresses all three sides of the risk triangle is now adopted in many parts of the world and is known as “Sustainable flood management”. It is taught in secondary schools in England as part of the A level Geography syllabus. England is falling behind the rest of the world in terms of sustainable flood management. This is partly the fault of property developers and insurers. The “Statement of Principles” has distorted the insurance market.

- Sustainable flood insurance is not possible without sustainable flood management.
- Sustainable flood management is not possible without sustainable flood insurance.

England has neither and this is largely due to the existence of the Statement of Principles.

The ABI’s “Statement of Principles” runs out in June twenty thirteen, ending a fifty two year arrangement in the non Lloyds insurance market which started with a “Gentleman’s Agreement” in nineteen sixty one. During this time, non Lloyds insurers have agreed to accept commitments to insure properties in flood hazard areas, in return for a request (not a commitment) a request for UK government to

1. Control flood plain development,
2. Make building regulations more resilient, and
3. Spend more on flood defences.

In England

1. Planning guidance has been loosened,
2. Building regulations have been relaxed, and

3. Flood defence spending has been reduced.

The Statement of Principles has not only allowed property developers to continue to build in flood hazard areas in England, it has resulted in traditional composite insurers having to use premiums from safer areas to subsidise flood plain risks.

Table seven in the Flood Plain Speaking article lists no fewer than forty two ways in which the flood risk is lower in Scotland than in England, which means that property owners in Scotland pay a disproportionate share of the subsidy. Only a few of the cleverer insurers recognise the lower risks in Scotland, Wales and N. Ireland and can cherry pick profitable business by charging lower rates, and why not? If they've done their homework they deserve to benefit over the insurer which regards each country as the same.

The ABI has spent two hundred and fifty thousand pounds on looking for alternatives to the Statement of Principles, enough money to have funded FLAGS across the whole of the UK ten times over. If they had encouraged FLAGS in England and Wales, they could have actually reduced flood risks and advised local authorities on sustainable flood management. I hope you bear this in mind when looking at the ABI proposals. The options are all summarised in Flood Plain Speaking.

It does seem inevitable that England will have to face the prospect of “blue lining” areas where flood insurance will be unavailable. That might make the UK government take action.

No one seems to want to talk about the “elephant in the room”, the recent publication of dam break inundation maps which will at a stroke add thousands of households and businesses to the list of those in flood hazard areas.

On behalf of the insurance industry I was the ABI representative on the steering committee which reviewed methods of calculating the risk of reservoir failure and this gave me an insight into a great deal of secret information about the safety of UK reservoirs. I am not at liberty to give details, but I can say that I am very concerned as a result of this information and my subsequent research. There are over two thousand six hundred large dams and reservoirs in the UK. Most are over a hundred and ten years old. Sixty nine per cent of dams in England and Wales have housing built in the danger zone. This housing could be swept away if the dam fails.

[14. Dam wall.]

New houses just below a dam



I took this photograph standing on a dam wall. I am not going to say which dam, but it had a lot of cracks in it! You can see how close the houses are.

If you are asked to insure property which appears within a dam break inundation zone, I would advise that you find out who the dam owner is, whether they have public liability insurance, and whether the limit of indemnity is enough to cover the value of all the properties in the danger zone. Many dams are not insured for public liability at all, so property insurers may not be able to make a recovery from the reservoir owner should the dam fail. In such cases you might be better letting someone else quote!

Public liability insurance for dams is not compulsory. The Scottish Parliament recommended it should be, but surprisingly, the non Lloyds insurance market objected. It is not clear why. Perhaps it was not so surprising because such a change would benefit their competitors Lloyds who write most of this business. If so, this crude attempt to limit more business for Lloyds could make thousands of homes in dam break inundation danger zones uninsurable.

[Crichton]

Property developers have already learned that if a site is at risk of flood, there is no point in building housing for private owner occupiers because insurance will be too expensive. Instead they are increasingly using the high risk sites for social housing for low income families such as single mothers with young children, or pensioners. In other words the highest risk housing is going to the most vulnerable. That leads me to the next point, vulnerable members of society.

I recently helped the authors of a major report for the Joseph Rowntree Foundation, dealing with the social justice issues raised by flooding. I also helped them to present it at the annual conference of the National Flood Forum in London. You can download it from the Rowntree Foundation web site. They quite rightly highlight the problems caused by a lack of affordable flood insurance especially for low income families.

Vulnerable people in rented homes need insurance for their domestic contents. Insurance with rent schemes can help and I hope you will encourage them if you get the chance. They are covered in some detail in the Flood Fact File.

I now want to talk about what you, as expert insurance underwriters and claims handlers can do to reduce the risks of flood in your area and reduce the suffering of the public caused by the threat of flood.

New bodies are currently being set up across the UK called "River Basin Management Boards". They are obliged to consult with stakeholders. Why not find out the address of your local River Basin Management Board and ask if you can attend one of their meetings? That will give you the chance to explain to planners and others the concerns of insurers.

I only have time left for a brief mention of the public health implications of flooding and why this is important to us as insurers and as members of society.

[15. Health impacts]

People are vulnerable

Table: % of flood survivors reporting health effects from flooding
Physical Effects **Mental Effects**

| | | | |
|---------------------|----|---------------------|----|
| Stiffness in joints | 23 | Anxiety during rain | 80 |
| Respiratory illness | 21 | Stress | 67 |
| Gastro-intestinal | 20 | Depression | 56 |
| Weight loss | 20 | Sleep problems | 51 |
| Skin irritations | 16 | Panic attacks | 27 |
| Muscle cramps | 16 | Anger attacks | 24 |
| High blood pressure | 14 | Nightmares | 18 |
| Sprains/ strains | 14 | Suicidal thoughts | 9 |
| No physical effects | 36 | No mental effects | 6 |

Source: extracts from a table produced by Professor Dennis Parker, Middlesex Flood Hazard Research Centre

The effects on health are really important yet they are hardly ever noticed by insurers. I mentioned earlier the spate of suicides after the two thousand and seven floods in Hull. As you can see from this table, the consequences for physical and mental health are significant and widespread. I can vouch for the high percentages of people suffering stress and anger. I have often met them during my meetings with flood survivors. Insurers should be sending all front line claims staff and loss adjusters on training courses on how to deal with people who are stressed and angry. I know that The Samaritans do a particularly good training course at a reasonable cost.³

As long as flooding losses continue, the health of an increasing proportion of English society will suffer. The question is whether this is too high a price to pay and what will be the effects on social cohesion? Again there is more information in my "Flood Plain Speaking" article including a list of various waterborne pathogens to be found in the UK.

[Crichton]

I have not had time to go into the issues of claims fraud and looting which are also important, but you can find lots of information about this in the Flood Fact File including descriptions of each of many different scams to be found. If you come across any new ones, do let me know.

Looting is a comparatively recent problem and in widespread floods, the police cannot be everywhere to prevent it.

[16. Policeman]

³ See http://www.samaritans.org/your_emotional_health/skills_training_for_business/listening_and_questioning.aspx



I must say I find this picture a little reminiscent of the story of King Canute trying to hold back the sea. Current approaches in England seem to be not much more effective and it is a pity that government and the insurance industry seem so reluctant to look at the approaches used so successfully in Scotland and currently being taught to children in school. Perhaps we shall have to wait until these children grow up.

[Crichton]

So I have now talked a little about five important aspects of flood insurance. I hope it has given you an interest in finding out more and looking at new approaches with an open mind.

Insurers could do much more to help local authorities by providing advice on best practice, data and flood modelling. With a better understanding of the problems they will be better placed to use selective premium incentives to help society to manage flood risks better. If they did offer such help they could be repaid with “a seat at the decision making table”, greater influence on government policy and better control of the risks.

Unfortunately, with a few notable exceptions insurers do not seek to help society in this way. Too often they seem to concentrate on complaining about a lack of spending on flood defences, defences which can simply make matters worse in the longer term. Many insurance managers and insurance industry representatives these days are not CII qualified and neither know nor care that Scotland leads Europe in sustainable flood management and has a lower flood risk than England in at least forty two ways. Perhaps you as an insurance professional will be able to educate them?

I hope this short video has given you a better understanding of the problems and solutions. For more information, see the articles listed on the screen.

[17. References]

- For more information

- “*Flood Risks and Insurance Fact File*”. Chartered Insurance Institute, London, 21st edition, January 2012. <http://www.cii.co.uk/knowledge/factfiles/>
- “*CII Thinkpiece 73: Is it Possible to Have Sustainable Flood Insurance without Sustainable Flood Risk Management?*” Chartered Insurance Institute, London, April 2012. <http://www.knowledge.cii.co.uk/resource/cii-thinkpiece-73-it-possible-have-sustainable-flood-insurance-without-sustainable-flood-ri>
- “*CII Thinkpiece 73: Is it Possible to Have Sustainable Flood Insurance without Sustainable Flood Risk Management? – Reflective Questions*” Chartered Insurance Institute, London. http://www.knowledge.cii.co.uk/system/files/TP73_Reflective_Questions_7.pdf
- “*Flood Plain Speaking*” Second edition. 56pp. Chartered Insurance Institute, London, May 2012. <http://www.cii.co.uk/knowledge/claims/articles/flood-plain-speaking/16686>.
- “*Climate Change and Insurance Adaptation.*” Pp39-47, CII Report on Future Risks Related to Climate Change and Energy Security. Chartered Insurance Institute, London, June 2012. <http://www.cii.co.uk/knowledge/policy-and-public-affairs/articles/future-risk-climate-change-and-energy-security-global-challenges-and-implications/19188>
- **Or write to David@Crichton.sol.co.uk**

All these articles are available on the CII web site. If you download and read them they can be counted towards your CPD points. Do please let the CII know what you think of them and whether you have found them helpful.

If you have any specific comments or queries, feel free to email me at the address on the screen.

Thank you for listening.

Goodbye and stay dry!!

[Leave image on screen for one minute then end]