

Annual General Meeting of the Alde and Ore Association Saturday 6th April 2019

GUEST SPEAKER'S PRESENTATION

John Curtin, Executive Director of Flood and Coastal Risk Management at the Environment Agency, gave a presentation on "2019 - The Year we Took Climate Change Seriously?"

His talk was from a national, indeed global perspective and he said he wished to show that climate change was still underestimated as a threat and had become the biggest challenge for our and future generations. He produced a [Chart](#) showing how the temperatures of all countries in the world had become increasingly warmer over the past 130 years and were all now without exception much warmer. He next showed a film video [Chasing Ice](#) made by two young filmmakers who had captured dramatic and disturbing film of calving glaciers in Greenland over a period of 75 minutes showing ice on a comparable, if not larger scale, to Manhattan shooting 600 feet and more into the air. He noted that the ice in the huge glacier featured had retreated more in the past 10 years than in the previous 100. The situation was the same in both the Arctic and Antarctic and every 1 per cent loss of ice from ice sheets on land means an additional 1 metre sea level rise. (Ice melting in the Arctic from bergs floating in the sea did not affect sea level in the same way.)

John Curtin then showed the accelerating rate of natural disasters globally over the last 40 years with summer droughts increasing and winter floods four times as common and indeed noted that some 2.2bn people world-wide were now vulnerable to flooding. As far as the UK is concerned, every fourth summer can now be expected to be as dry as the summer of 2018, and winter rainfall can be expected to be 35 per cent heavier, with sea level set to rise around the coast by 0.4m to 1m over the next 50 years and that, even if there were no more carbon put into the atmosphere, what are high tides for now will be low tides in future. By 2050 there will be double the number of houses in the UK currently at risk of flooding – already one in six houses is at risk. Bearing in mind that most of Britain's cities, as a result of our being an island trading nation, are on the coast or in estuaries, Britain is uniquely vulnerable. Further, with homes and businesses reliant for their energy on grids where the energy is produced being on sites close to the coast, Britain's energy production is therefore also particularly vulnerable. Britain's vulnerability to disasters has, surprising to say, been recognised much longer than may be thought. It was mentioned by Lord Waverley who had been appointed to report on the lessons of the 1953 East Coast floods and had noted that there had been a progressive increase in the number and frequency of floods over the previous 100 years and recommended this were taken into account in future planning even though he was not aware of the concept of climate change.

John Curtin then turned to review the impact of recent surges. The 2013/14 surge reached a similar height as 1953 and it was to be noted that the works undertaken on the river walls after 1953 had avoided in 2013/14 the worst effects experienced in 1953 when there had been 1200 breaches and , in the absence of an system of

warnings, 307 deaths. By contrast, things had come a long way since 1953, though he mentioned that the use of a Chinook helicopter to transport materials to strengthen barriers costs £83,000 an hour. In 2013/14 the Hull barrier had protected 19,000 properties holding back a tide of 5.3m. The Somerset Levels, an area of 600 square kilometres of land below sea level had been particularly vulnerable in 2013/14 though with flood protection only 65 sq. kilometres had in fact been flooded and less than 100 houses in total. He mentioned that at the same time in Boston, Lincs 490 houses were flooded but only 5 were insured but this had received little press attention. But in total 1.4 m people had been protected by the warning system in 2013/14. So there was greater resilience than in 1953 even though the jet stream in 2013/14 had got stuck bringing 12 successive waves of heavy rainfall over Britain. The 1953 East Coast Floods had set planners thinking about barriers and in particular the Thames Barrier which in 2013/14 had held back the highest tide ever. It is remarkable that the Thames Barrier was operated only as few as 8 times in 1980 but in 2013 was operated 50 times. John Curtin had a slide taken from space which showed the enormous amount of soil that had been swept out into the North Sea as a result of the floods.

The 2015/16 floods included Storm Eva, the record breaking Storm Desmond and Storm Frank which involved a jet stream from the mid-Atlantic reaching the North Pole and temporarily warming temperatures at the North Pole by 30 degrees. The Honister Pass, Cumbria had 341.4mm of rainfall in one day sending down through the River Eden 17,000 cubic metres of rainwater per second, which John Curtin estimated as equal to filling the Royal Albert hall in 50 seconds.

He turned to the flood warning system. There were 7.2m visits to Environment Agency flood warning sites during this period including half a million from the United States and many tens of thousands from places as far afield as Australia and Nigeria, no doubt involving visits by many friends and relatives of those affected. However, this has alerted the authorities to the risks of cyber-attacks compounding the ordinary risks of flooding. The 2015/16 floods damaged some 890 flood defences and cost £270m in recovery.

John Curtin also drew attention to other risks, including the problem of the 1,264 coastal landfill sites which are gradually eroding under the ravages of flooding and coastal erosion and may lead to the exposure of harmful and noxious material. In the North West there are vulnerable sites with 'very nasty stuff' indeed that may be exposed.

John Curtin said he felt the public had been misled about the extent of climate change because of the 'stationality' assumptions of all climate change calculations. The slides of huge volumes of water being held back by the Thames and Humber barriers, unnoticed by passing traffic on the sunny days after the surges they occurred, also showed how people could be unaware of the real problem. All the estimates of projected climate change over the next 100 years were based on records of the past 30 or 40 years so they did not reflect the increasing pace of change. Floods really are getting worse and higher.

However, an opportunity now presented itself following Theresa May's recent announcement in the context of the 25 Year Environment Plan that the government "will update the national flood and coastal erosion risk management strategy". John Curtin said we had the opportunity to make our voice part of this consultation beginning in the summer of 2019 which will look to the 100 year horizon and explore all aspects of flood protection, whether methods, appropriateness of legislation to ensure that the future infrastructure can more resilient and 'climate ready'. What the consultation leads to remains to be seen but it must offer an opportunity to strengthen our planning for natural disasters and the way protection is delivered.

John Curtin then kindly answered a range of questions from the floor.