

Yorkshire & Humber Climate Change Adaptation Study

Recent Weather Events - Further Details on: Erosion and Landslips

February 7th 2003

- The coastal erosion is threatening a cliff top where Yorkshire Water built a £30M sewage treatment work for Scarborough only 3 years ago.
- In 1999 the area was regarded as low risk but the instability problems started to occur after the storms of November 2000.
- The cliffs were being weakened by the waves, which was causing landslips to occur and was also threatening to destroy a section of the Cleaveland Way footpath.
- The cliff top recession is expected to continue and the Cleaveland Way route will end up being lost.
- The Yorkshire treatment works are not expected to be under serious risk for another 60 years.
- Council plans to stabilise the slopes, improve the drainage, retain the soil to stabilise the cliff tops and defend the base of the cliffs to prevent undermining.

February 9th 2003

- Storms and violent seas damaged sections of Scarborough's Marine Drive where work was going on to install the resort's new £33M sea defences
- The heavy seas breached the new "accropode" and rock armour protection and destroyed the fencing that separated the construction area from the public and traffic. Even some stretches of the area that did have rock armour and accropode protection had the sea crashing over on to the path and the road.
- 3 stretches of railings which were unprotected were ripped up and would be replaced by new 3 feet high wave return walls
- Damage didn't put residents at risk as the Drive was closed to the public

February 12th 2003

- Ongoing debate about whether a 3 feet high wall should be built along the sea front road to reduce impact of waves
- The Marine Drive was shut for almost a week after waves topped concrete sea defences and rock armour, damaged a compound area and knocked over fences and barriers that had been used to keep pedestrians and traffic away from construction.
- All indications are that global warming will cause sea levels to rise and the force of the waves would increase. This means that the defence scheme would have to be designed to deal with heavier seas than the current ones.
- The existing sea wall had been taken down over 100 yards below the rock armour so it wasn't a surprise the sea was coming through

September 26th 2005

- North Yorkshire Council is investing in a £300,000 scheme to deal with the landslip problem on the main link from Skipton to Grassington
- Landslip at Tyke Hill on the B6265 was causing problems for motorists as the road was beginning to depress.
- Temporary repairs carried out to keep the worst effected parts of the road safe.
- Consultants recommended a piled solution to support the road which would cost £300,000 and would take 3months to construct.
- Road will be kept open during construction with traffic signals put in place to keep vehicles away from vulnerable areas. At risk areas would also have to be sealed to stop water from getting to it.
- Site monitored during winter, work starting in April.

January 18th 2007

- £10M redevelopment plan put into place for one of the East Coasts biggest caravan parks, which has been subjected to cliff erosion.
- Some facilities and the parks entertainment centre at Sand-le-Mere near Tunstall have now become considerably close to the cliff edge.
- Since the year 2000 3m of the cliff has been lost to constant erosion.
- The erosion rates on the Holderness coast was initially 1.5m on average but now the erosion rate at Hornsea Coast has increased to 2m on average.
- Council has granted planning permission for private sea defences that stretches 150m stretch at the front to protect the sewage treatment plant.

June 16th 2007

- Torrential rain caused flooding with North Yorkshire being the worst affected.
- 5 schools across the county was shut
- Trains on East Coast Main Line were delayed.
- Roads affected by standing water
- A1 closed in both directions at Catterick because of standing water.
- Delays at the A61 at Ripon to Harrogate
- York horse track closed due to water logged course
- Landslip at Blubberhouses near Skipton which trapped a couple in their car
- Residents of Borage House Care Home, Ripon, had to be evacuated to Allhallowgate Community Centre when the River Skell burst its banks and flooded.
- 50 people in Borage Road area had to be evacuated.
- Barefoot Street, Bondgate Street and Boroughbridge Road also suffered heavily from the flooding.
- Riverside Caravan Park in Knaresborough had to be evacuated.
- Villages of Hunningore and Cattal near Ripon were issued with flood warnings and told to evacuate if flood waters rose any further.
- Flood warnings at River Swale at Brompton-on-Swale caravan park and Topcliffe Mill
- Flood warnings on River Ure at between Bishop Monkton and Roecliffe near Boroughbridge and at Aldwark Bridge
- Businesses and homes flooded and had to be pumped at Catterick Garrison, Colburn, Bedale, Ripon and Harrogate
- Barricades against flood waters required at River Ure and the coast at Bridlington
- Bedale High School, Filey Secondary School and primary schools at Burneston near Bedale, Coppice Valley near Harrogate and Hackness near Scarborough, were all closed.
- Fountains Abbey and Studley Royal Park near Ripon were both closed
- Flood warnings for several Yorkshire rivers including River Skell in Ripon, River Swale at Catterick Bridge and Topcliffe Mill and the River Ouse in York

June 21st 2007

- Heavy rain reported across the country and more expected
- In Yorkshire Bingley had the most rain, with almost half an inch recorded
- Businesses in Castleford were flooded and needed to be pumped
- Water had to be pumped from Castleford Tigers Rugby ground in Wheldon Road
- Fire fighters in South Yorkshire received 70 calls for help in 2 hours
- Problems restricted to an area around Swinton and Rawmarsh in Rotherham, extending to Elsecar in Barnsley
- At one point half the county's fire fighters were needed to pump water away
- 3 rail services between Leeds and Kings Cross and Bradford and Kings Cross were cancelled
- A house in High Cote, in Riddlesden, Keighley was struck by lightning and set alight
- A house in Windmill Approach, Belle Isle, Leeds was also hit by lightning and set alight
- Fountains Abbey was damaged after the River Skell exposed masonry from the ruins which has not been seen in centuries
- Landslide at Kex Gill between Harrogate and Skipton caused the A59 to be closed

July 17th 2007

- Rail services on West Yorkshire commuter route were hit by a land-slip
- Tons of earth fell onto the Leeds-Ilkley railway line at Springs Tunnel, Guiseley.

September 3rd 2007

- The A61 Penistone access road into Sheffield suffered a landslip after part of the ground subsided in the June flooding
- The foundations supporting the road were greatly damaged and the road had to be closed for a number of months as opposed to weeks as initially thought.
- Detailed surveys have shown that extensive underground work would have to be done to stabilise the road so that it would be able to accommodate the volume of traffic that was considered normal.
- The A6102 Middlewood Road in Sheffield also suffered two landslips and was expected to remain closed till the following year.

September 18th 2007

- Since the 18th century more than 200 houses have become casualties of erosion at Robin Hood's Bay despite a 50 foot high concrete sea wall being anchored into the cliff in 1975 to defend the landing, which is a section of cliff between the village slipway and Ground Wyke Hole.
- By 2000 only 6 feet of ground was left between the cliff edge and the only entrance road to the lower part of the village- leading to the protection works between the Quarter Deck and Victoria Hotel being carried between 2000-2001 Scarborough Council were told defending the lower part of the village wouldn't be enough as long as the upper part of the village, Mount Pleasant, was still without defences.
- The threat of Mount Pleasant Street area would be evaluated and then the results would be fed into an overall strategy for Robin Hoods Bay.
- There is risk that any defences put into place would be outflanked due to the continual erosion of 0.3m per year
- Strategy costing £121,000 would be put into place to work out a complete strategy for dealing with the village from Quarter Deck to the north of Mount Pleasant.
- Research into strategy due to start in January.

September 24th 2007

- DEFRA has given money for engineering consultants to carry out a full exploration into the coastal defences at Quarter Deck to Mount Pleasant.
- Robin Hood's Bay has a long history of coastal erosion problems.
- A lot of the original road into the village was lost in 1780 and since then 200 properties have fallen into the sea.

November 10th 2007

- Alerts issued along East Coast with high tides causing some damage in Scarborough
- Tides reached 9 feet high in East Anglia
- It is believed that floods that occur once every 100 years on the east coast will start occurring once every 10 years by the end of the century
- The flooding left North Marine Drive and the site of a £140M Sands project in Scarborough covered in sand, seaweed, Spume and pieces of wreckage from broken fences.
- Scarborough's Marine drive and Foreshaw Road had to be closed which caused chaos throughout the town

January 12th 2008

- Barnston has one of England's fastest eroding coastlines with the ground dropping away at 2.5m a year
- Authorities have given up on attempting to prevent the coast moving as it is believed to be unstoppable
- Most of the village's houses are inland but the holiday park has been forced to move its caravans further inland.
- Erosion due to north westerly winds and high tides.

February 7th 2008

- Engineering work is being carried out to protect Whitby's harbour from the North Sea
- 3,000 tonnes of rock will be put in place around the resorts upper harbour in an attempt to prevent the sea and River Esk from eroding inland. £450,000 is being spent on the scheme.
- Work had to be done along 330 yards of stretch as it the situation had gotten critical.
- Concerns heightened due to climate change and rising sea levels.
- Project hope to be completed in April in time for tourist industry.
- Upper harbour level had been built on reclaimed land from a former landfill site and concerns had been raised that pollution from the rubbish could seep out.

March 28th 2008

- Environment agency said it wouldn't be able to defend 2,000 properties in sparsely populated areas along the East Coast
- The Humber Strategy showed that most of those at risk from coastal erosion live in rural hinterlands
- The cost of maintaining and protecting the houses for the next 25 years would be small in relation to other costs but the government seemed happy to do nothing.
- the agency predicted that it would be difficult to raise sufficient funds to create defences along large stretches of the Humber
- In 10-20 years time withdrawal notices would have to be issued to 668 properties in the Sunk Island area, 62 near Kilnsea and 10 at Skeffling. 634 more homes could be affected along the South bank of the river from Barrow Haven to East Halton Skitter. 28 properties at North Ferriby and 24 at Hessle could also be affected.
- 2 homes at Knipe Point overlooking Cayton Bay near Filey had to be evacuated after ground movements caused their gardens to slip into the sea.
- Cracks appeared in woodland near houses and large pools of water created bogs on the land
- No sign of impact on the A165
- Knipe point is a few miles away from Holbeck Hall which was destroyed in 1993 by one of the biggest landslips on the Yorkshire coast in over a century. Cracks had again been spotted on the footpaths some time before the slip.

April 5th 2008

- 2 properties at Knipe Point overlooking Cayton Bay near Filey had to be evacuated after ground movements caused their gardens to slip into the sea.
- Cracks appeared in the ground of the local woodland and large pools of water had begun to turn the land into a bog. The natural drainage processes and impact of water seepage and drainage from adjacent developed land were supposedly the factors that were causing the slump.
- It is doubtful that a permanent solution can be put into place to stop the slumping.
- The cliff line has retreated 30-40 yards over the last 30 years, but some estimates have said that about 20 feet of the cliff had fallen off during the winter.

April 18th 2008

- 3 bungalows will be demolished on the cliff top Knipe Point, between Scarborough and Cayton Bay
- An estimated 20 feet of the cliff crumbled away in the last two weeks and a lot of residents in neighbouring properties had to be evacuated
- The National Trust is investigating the landslips

May 9th 2008

- It was puzzling to residents as to why the torrents of water that seemed to be causing the National Trust owned Cayton Bay Woods to dip and the cliffs to crumble at certain times of day.
- Streams began running below the landslip before 9am but tended to dry up by lunchtime which suggested there was a link to regular water usage by the local population
- It as deemed that another home had to be ready for demolition only 2 weeks after 2 properties had been pulled down a crack that was 2 feet wide

June 14th 2008

- £90,000 had been invested in an investigation into the landslips taking place at Knipe Point.
- Landslips increased over winter
- Key task will be drilling a series of bore holes into the ground to confirm the landslide geology and the installation of slope monitoring instruments.
- Modelling is also expected to take place to determine why and how the landslides happened.
- Ground slippage and cliff recession would also be predicted.
- Some options to tackle it includes propping up the cliff, providing better drainage, protecting the foot of the cliff and providing slope support.

June 14th 2008

- 5 months of work and £4.5m were spent on stabilising a hillside above a railway after a dramatic landslide.
- 40 tonnes of trees and earth slid down the bank beside the Hebden Bridge to Wakefield railway line in Ell.
- Trains had to be stopped while initial clearance and stabilisation works took place. Normal timetable would resume in April.
- 100,000 tonnes of material had to be removed to resolve rail services.
- 7 burnt out cars had to be removed from the hillside and 500m of new boundary and security fencing had to be installed.
- Hydro-seeding was done to encourage greening over new hillside
- There was extensive tree felling and removal of vegetation clearance.