

Defying the disaster

EA-MIDLANDS

Box 5

Memories of the

1947 floods and

50 years of flood

protection in the

Midlands



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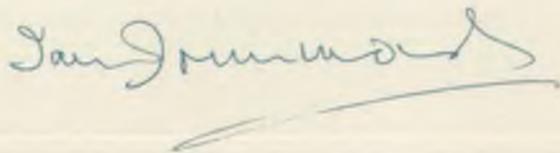


In publishing this excellent booklet, the Agency has reminded me of the ghastly Greater Nottingham Flood of 1947 which showed the need for flood protection: and truly nailed its colours to the mast. I remember the flood came after the awful winter of snow, cold, power cuts and coal shortage. World War II was not long over, and food was still rationed.

At the height of the flood, I went to visit my parents in Wilford. The train journey was through miles of flooded meadows and towns - eerie and shattering. There was extraordinary quiet - no traffic - just people in boats out shopping. My parents' house lay in four feet of water and was evacuated. Some houses had water up to first floors.

This was of course the result of the extensive development of the flood plain and washlands of the river (which would not be allowed in this form today) and the greater urbanisation of the upstream river catchment. Maintenance of the works has been well done over the years and the Agency now has the most sophisticated system of all. As for the future, the imponderables are the effects of future catchment organisation and rainfall trends. Clearly assets within the protected area have grown enormously and will continue so to do, for example the Broadmarsh Shopping complex and the new Tax Offices. In the end, good protection depends upon good finance and we hope, in this, that there is greater certainty and adequacy than in the past.

I am sure the booklet will be read with great interest and bring back many memories for people. We look with interest to its successors.



IAN DRUMMOND

Former Clerk to the Trent River Authority

April 1997

EA-Memo



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"Months of blizzards,
of high winds and
heavy rain, devastated
food production,
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50 years

The statistics tell something of the story of the floods of 1947.

They came in March, after one of the most severe winters this century, a winter which added hugely to the burdens borne by post-war Britain.

Months of blizzards, of high winds and heavy rain, devastated food production, disrupted fuel supplies, isolated communities and paralysed transport.

Two million sheep and lambs, and 30,000 cattle, perished. Around 200,000 acres of winter corn and 30,000 tonnes of potatoes were destroyed.

After that, large parts of the country had to cope with flooding on a scale not seen for generations.

Consider the falls of rain and of snow: in 1946, the national average precipitation was just under 42 inches, nearly 20 per cent higher than average. In the first three months of 1947, it was 12.21 inches - nearly half as much again as the average for the same three months in the preceding 35 years.

In March of 1947, there was 6.78 inches of precipitation. The average for the 35 previous Marches was 2.67 inches.

ago

Record flood levels

These heavy and persistent falls met ground which, gripped by a severe frost throughout the winter, could not absorb it.

In the early days of March, as it continued to rain and snow and the ground remained impervious, much of the rainfall drained directly into watercourses, swelling them dangerously. Meanwhile, great banks of snow built up, particularly in the hills.

A sudden thaw developed from March 9, 1947, and these deep snow banks melted rapidly. The water ran off the ground, which remained frozen, and into already-swollen streams and rivers.

Several inches of snow-melt ran off in the space of 24 hours.

And all the time, it continued to rain. It was more, far more, than the rivers could take. The catchments of the Severn and Trent were not to escape the devastation which the floods ultimately brought to 690,000 acres of land nationally.

The statistics tell something, but not all, of the story ...



“ It all seemed to start without anyone being aware of what was in store for us; certainly the people in our Gainsborough street had no warning of the impending disaster until the flood waters were already there.



“Me and a pal were playing in an underground air raid shelter when water began to appear ... and by the time we got home a fair amount of panic was beginning to set in, as the water had now covered both footpaths and the road. Everybody was concerned about trying to keep the water out of their homes.

“It was a battle people were losing, because as they were trying to keep the flood out at the front door, the water had flooded the lane at the rear and was coming in through back doors.

“Then came the major decision to move what we could upstairs. Throughout the rest of the day, that is what my father, mother and I did, first getting the three younger children settled in our two beds then saving what few possessions we had. The day's adventure had turned into a much more serious situation.

“By the end of the day everyone in the street was in upstairs rooms, shouting to one another from the windows. Eventually a “Duck”, or lorry-style military craft, appeared in the street, which was now under around five feet of water, and we embarked via a ladder to be taken to a school being used as a temporary shelter.

“We stayed there until the time came to return to a bigger disaster - the damage and mess - after the floods had gone down.

“The experience will stay in my memory forever.”

That was



then.

Disaster strikes

- In the catchment area of the River Trent, falls of rain and snow between January 6 and March 13, 1947, in places reached over four inches. In the critical days between March 14 and 23, it reached 2.75 inches in some areas.
- The rapid thaw of large falls of snow in the upper reaches of the Trent began on March 13 and immediately caused flooding problems for scores of riverside homes and communities in Staffordshire.
- At Burton-upon-Trent, several thousand properties, including two major breweries, were badly affected when the river burst its banks.
- The Cavendish Bridge over the Trent at Shardlow, which carried the A6 trunk route between Derby and Loughborough, was partially demolished on March 21 by flood water, leading to a 15-mile diversion. Military engineers were immediately commissioned to build a 150-foot bailey bridge as a replacement.
- During the night of March 17, 2,000 houses and factories at Long Eaton were flooded; nearly as many more houses suffered similarly at Beeston.

Bad to worse

- Nottingham experienced its highest flood waters since 1875 - and new development on its floodplains meant it was one of the worst-affected areas in 1947. West Bridgford - a new township built on the flood plain - began to flood on March 18. At its height, the flood hit around 14,000 homes and other premises.
- 3,285 homes and 86 factories in Nottingham, along with 2,000 properties in West Bridgford, were flooded above ground-floor level. Thousands of residents either had to be rescued from the upper storeys of their homes, or have supplies brought in.
- Approximately 28 miles of streets were under water at the peak of the Nottingham floods.
- In the upper tidal reach of the Trent, from Cromwell Lock, north of Newark, to Gainsborough in Lincolnshire, 20,000 acres were flooded, including the villages of Sutton-on-Trent, Low Marnham, Spalford, South Clifton, Dunham, Cottom and Littleborough.
- Gainsborough, which sits at a critical stretch of the volatile tidal range of the Trent, fell victim on March 22. The flood plains opposite the town had already been filled by the awesome downstream flow when high tide came. More than 2,000 properties in a 460-acre area were hit.





“ A local firm, Marshall’s, had provided a tractor to aid in the relief effort in Gainsborough, and my grandfather, George Evans, who worked for them, had his workmates navigating the streets towing a trailer loaded with blankets and supplies. They were delivering them to those stranded in their homes at the height of the floods.

“My father, Peter Evans, who also worked for Marshall’s, used a pole and basket to deliver supplies to those in need as and when required.”

Susan Schlichting
Gainsborough

“I hope it never does happen again, because it could be worse next time - the floodplains have been built upon.”

“ My memories of the 1947 floods are vivid, being so close to both the Avon and Severn. We were completely cut off in the town - the only way out was the railway line to Upton and Malvern.

“Living as we did near an Army camp, lorry-style military craft, or ‘Ducks’, as they were known, provided by the camp, were used to deliver milk and bread.

“My two girls, aged 10 and six, were taken around town in a boat - my father actually arranged for them to ‘sail’ on every road leading into town, as he felt such a flood may never happen again.

“I hope it never does happen again, because it could be worse next time - the floodplains have been built upon.”

Nellie Davies
Tewkesbury



“The floods of 1947 are something I’ll never forget. We lived upstairs in our home in Longford, Gloucester, for three days before being rescued and taken in a rowing boat to dry land.

“There was a farm at the rear of our house and mess from there was swept into our downstairs rooms. It was three months before our home was habitable again.

“When the floods hit, I waded through waist-deep water in the streets to collect my baby. I had left her with my mother-in-law while I worked - I was a soldier’s wife and needed the money! It is surprising what one can do in a crisis.”

Pat Alden
Prestbury, Cheltenham



“When the floods hit, I waded through waist-deep water in the streets to collect my baby.”

“I travelled to work on a 600cc Panther motorcycle and my first real encounter with the floods was on a stretch of road near Sawley, when I met a raging current which almost swept me across the road.

“At one flooded stretch of road, a boat was provided to get under a railway bridge, and you had to pull yourself through with a rope fixed to the bridge side.

“After the floods subsided, mud had to be swept out of shops and houses.”

Joseph Beesley
Long Eaton

No let-up

- Downstream of Gainsborough, at Morton, a huge floodbank was overwhelmed early on March 23. The water tore a gap 280 feet wide and left a hole in the land which was 50 feet deep in places and 250 feet inland. It caused the flooding of 16,000 acres, much of it valuable agricultural land.
- A 600-ton Dutch crane was brought across the North Sea to seal the Morton breach.
- Ultimately, all of the low-lying land of the Trent catchment, totalling 300,000 acres, was flooded - with the exception of specific built-up areas where special defence schemes had already been carried out.
- The catchment area of the River Severn began to feel the impact of the floods from March 11. The town of Shrewsbury was almost entirely cut off.
- At Worcester, the Severn rose 10 feet in 24 hours. It lapped within half-an-inch of a brass plate which marked the level the flood waters reached at Worcester Cathedral in 1770. At Diglis, Worcester, the 1947 event was the highest ever recorded in a lock-keeper record dating back to 1856.



The final toll

- Upton-upon-Severn was completely cut off by road as flood levels reached up to eight feet in the streets.
- The flood waters of 1947 were the highest recorded on the Avon at Evesham since 1901.
- At Gloucester Lock, a plate recorded the highest level of the floods of 1852. On March 21, 1947, the waters reached the greatest height known since records were kept - 25 feet, four inches. The plate denoting the previous record had disappeared from view.

THE EFFECT ON A NATION

- By the time the floods were over, they had affected 30 of the 40 English counties and large parts of Wales.
- Of the 690,000 acres of land inundated nationally, nearly half was arable land - urgently needed to grow the nation's food after the war.
- The total cost of the damage, including loss of crops, was estimated to be £12 million.





“ My family lived at New Sawley near the River Trent. Everyone was warned to get ready for the expected flood. A siren went off - and police came round with loudspeakers. We helped mother get things upstairs. Eventually the water reached four feet six inches inside the house.

There was no electricity, of course, and not many people had upstairs loos in those days, so we had to use a bucket and chuck it out of the window into the water when no-one was looking!

Our supplies of bread, milk and candles were brought by rowing boat. We had to lower a shopping basket or bag on a rope (washing lines were useful) and haul it back up carefully through the window. There were no cooking facilities, so it was mainly sandwiches for the seven days we were marooned.

The pastime was, of course, looking out of the window. We could see Sawley Post Office across the playing-field. The post office was run by two old ladies. They had opened the door to look out at the flood scene, and a passing lorry swamped them. We fell about laughing!

Everyone had to leave their front doors open throughout the floods because the water pressure was so great at their height that they would have caused a lot more damage.

Afterwards, everyone helped each other scrub out. There was about six inches of mud on the floors, and the council brought round disinfectant if you wanted any. Our house had a tide mark for years, always coming out through the wallpaper. ”



“There were no cooking facilities, so it was mainly sandwiches for the seven days we were marooned.”

The infamous events of March 1947 caused untold damage and disruption in both rural communities and large cities across the Midlands. Tens of thousands of properties were flooded.

However, they did serve one positive purpose. They prompted a fundamental change to the way we now combat the constant threat of floods.

Of course, it is never possible to rule out completely the risk posed by swelling rivers and high tides. It would be neither realistic, nor desirable, given the impact they would have on the environment, to take all measures to eliminate the threats associated with what is a natural phenomenon.

The work which got under way in the wake of the events of 1947 has now evolved into a sophisticated flood defence service, provided today by the Environment Agency.

..this

The Agency, established on April 1, 1996, essentially adopts a four-tiered approach to flood defence:

- It seeks to influence planning decisions to prevent new development in flood risk areas
- It provides defences for people and property where they can be justified
- It provides appropriate flood warnings to areas at risk, using a new state-of-the-art system
- It routinely works to keep rivers and other water courses clear, to minimise flooding risks.

In broad terms, the Agency seeks to discourage new development on land which could carry flood implications, but where development has already taken place, it provides appropriate defence and warning systems to people and property at risk.

A great deal of resources are devoted in many forms to combat the threat of flood in the Midlands. That threat cannot be totally removed. This, half a century on from some of the worst floods the region has seen, is perhaps the right time to remind people of the impact floodwaters can have, and of how everyone can help minimise their consequences.

is now

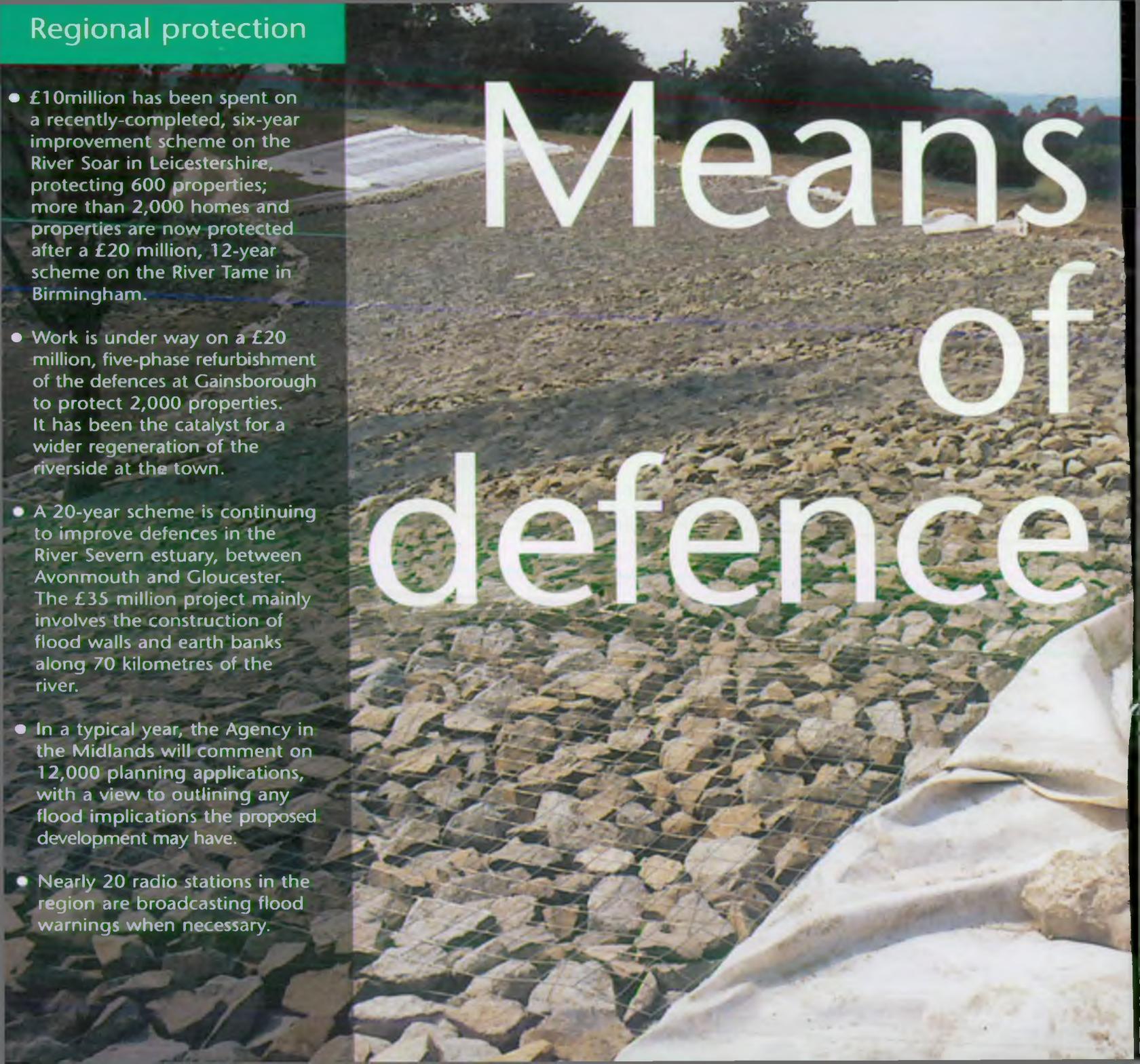


- The Agency in the Midlands has direct responsibility for more than 3,800 kilometres of main river, carrying out maintenance and improvement work as necessary.
- In the Midlands there are approximately 1,200 kilometres of flood defences - either soft earth embankments or concrete, steel and brick walls - with a present-day replacement value of £600 million. It is estimated that since construction these defences have averted damage to land and property totalling in excess of £2 billion.
- Maintenance workers annually remove one million tonnes of silt from watercourses. They also cut back or remove 15,000 fallen or unsafe trees, and plant over 250,000 trees and shrubs to boost the local environment.
- Every year, around 20 contracts are awarded for new flood defence capital schemes.
- The Agency's present 10-year investment plan will see around £100 million spent on new defences in the Midlands.

Regional protection

- £10million has been spent on a recently-completed, six-year improvement scheme on the River Soar in Leicestershire, protecting 600 properties; more than 2,000 homes and properties are now protected after a £20 million, 12-year scheme on the River Tame in Birmingham.
- Work is under way on a £20 million, five-phase refurbishment of the defences at Gainsborough to protect 2,000 properties. It has been the catalyst for a wider regeneration of the riverside at the town.
- A 20-year scheme is continuing to improve defences in the River Severn estuary, between Avonmouth and Gloucester. The £35 million project mainly involves the construction of flood walls and earth banks along 70 kilometres of the river.
- In a typical year, the Agency in the Midlands will comment on 12,000 planning applications, with a view to outlining any flood implications the proposed development may have.
- Nearly 20 radio stations in the region are broadcasting flood warnings when necessary.

Means of defence



FLOODPLAIN DEVELOPMENT

The Agency in March 1997 published new guidance seeking more concerted efforts to reduce the risks of flooding caused by the spread of development on floodplains - low-lying areas of land whose natural function it is to act as the overspill area for floodwaters from rivers.

It is estimated around six million people in England and Wales already live on floodplains, which account for 10 per cent of the total land area. Development on floodplains today totals an area roughly equivalent to the size of the West Midlands conurbation.

Historically, settlement was naturally attracted to floodplain areas, but as the extent and rate of development has increased in recent years, so the risks associated with it have become recognised. The Agency nationally spends £250 million annually building and maintaining flood defences, and providing a flood warning service, for areas at risk.

It already works closely with councils to ensure that flood protection implications are fully taken into account when development plans are considered.

The Agency's guidance document, aimed at local authorities, developers and builders, sets out its views, which can be summarised essentially as seeking to prevent development if it carries with it a risk of flooding.



FLOOD DEFENCES

The Agency's engineers design and construct flood defences to protect buildings, roads and property, and to reduce the risk of farmland flooding.

Studies are first carried out to ensure that the benefits of the defence, which may take the form of walls or embankments, are greater than the cost of construction.

There is also an ongoing programme of maintaining and renewing existing defences.

Such defences in the Midlands Region presently offer protection to more than 30,000 homes and 8,000 commercial properties, as well as 200,000 hectares of agricultural land.

FLOOD WARNING

The Agency has introduced new and quicker methods of issuing flood warnings to people at risk, so they can take action to protect themselves and their properties.

It uses the latest technology to monitor rainfall, river levels and tides 24 hours a day, throughout the year. When this work identifies a threat of flood, warnings are issued for the area involved.

The new methods of issuing warnings, in use since the Agency assumed this role from the police, include automatic telephoning equipment and much greater use of the media.

The Agency has also set up a national telephone service, Floodcall, on 0645 881188. This is a 24-hour recorded information service providing up-to-date news on warnings and flood situations

for some 60 separate river stretches in the Midlands alone.

Flood warnings are colour coded - yellow, amber and red - to indicate the likely severity of a flood.

MAINTENANCE

Agency staff routinely check that defences, including walls, embankments and pumping stations, are working properly and undertake any remedial work.

They also do river maintenance work to remove any potential blockages that could obstruct the flow of a watercourse.

This comprises dredging, weed-cutting and tree maintenance work, as well as the removal of obstacles such as fallen trees, tyres and other debris.



The River Trent Trust and the Environment Agency have acted as partners in the production of this booklet to mark the 50th anniversary of the 1947 floods. In keeping with the aims of the Trust, the booklet will be used mainly for educational purposes.

*Acknowledgements: Harvest Home - The official story of the great floods of 1947 and their sequel
The Spring Floods of 1947: Howorth, Mowbray, Haile and Cubley Crowther.*

All published letter extracts were from correspondence kindly sent directly to the Agency by the contributors.

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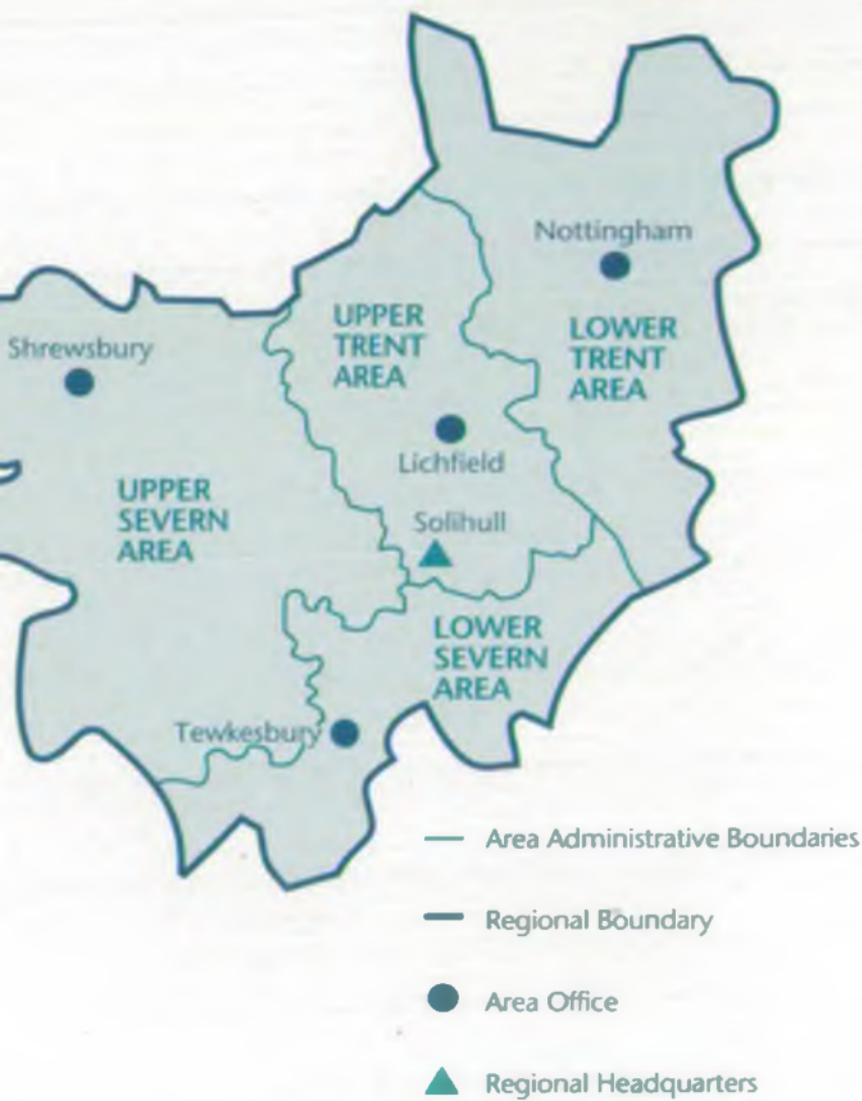
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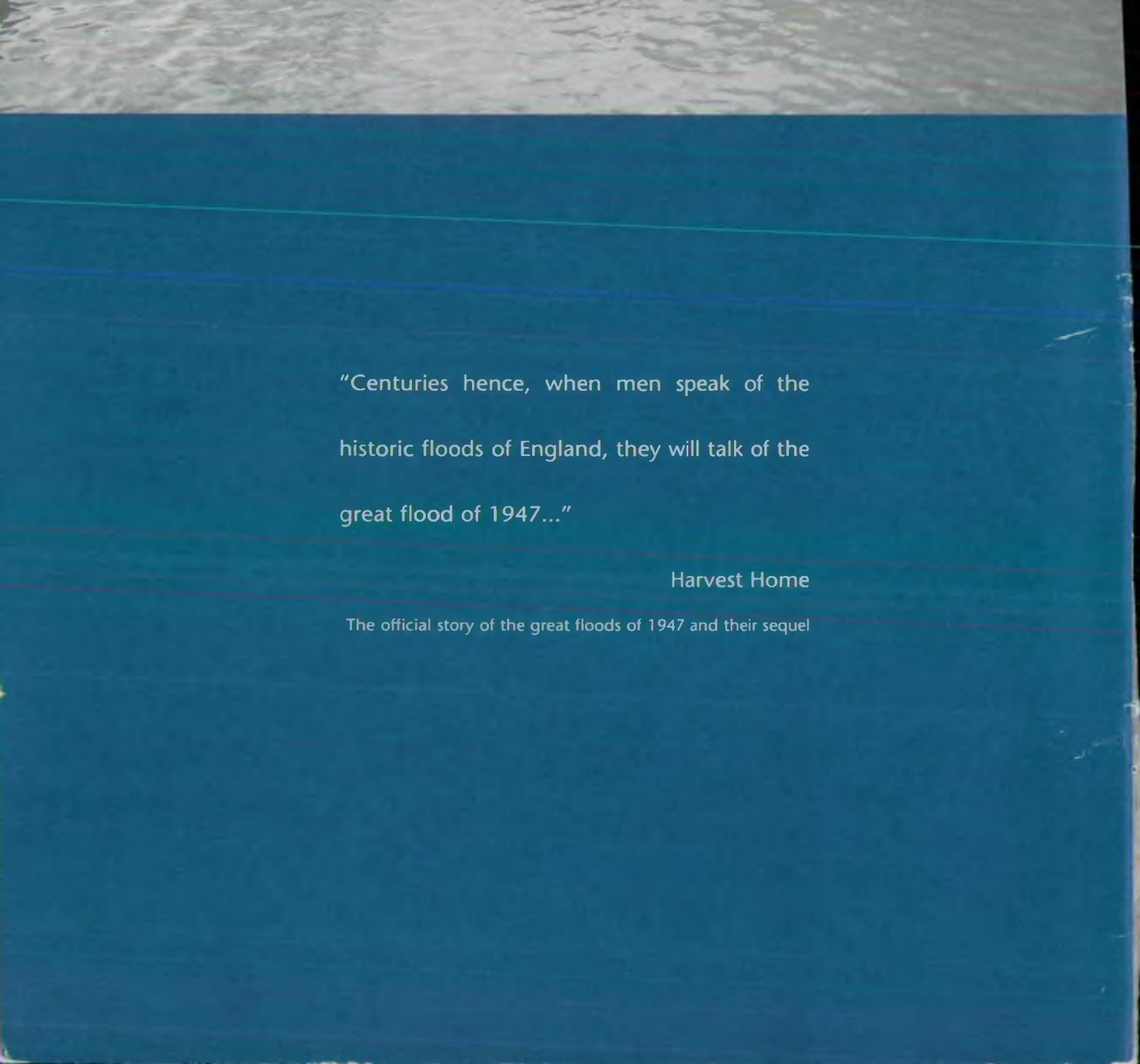
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The image shows the front cover of a book. The top portion of the cover is a photograph of rippling water. The rest of the cover is a solid, deep blue color. Centered on the blue background is a quote in white text. Below the quote, the title 'Harvest Home' is printed in white, followed by a subtitle 'The official story of the great floods of 1947 and their sequel' also in white.

"Centuries hence, when men speak of the
historic floods of England, they will talk of the
great flood of 1947..."

Harvest Home

The official story of the great floods of 1947 and their sequel