

Background to the Somerset Levels and Moors

- The ancient tidal marshes of Somerset were gradually reclaimed through the activities of the Abbots and Bishops as far back as 1,000 years ago. In the 14th Century, land reclamation started but frequent flooding was common. Over the 15th - 17th centuries rudimentary land drainage activity occurred, largely in a piecemeal way. During this time much of the land was still in a more or less natural state and was subject to flooding and saturation for long periods. The various Enclosures and Drainage Acts of the 18th and 19th centuries saw a far more intensive and organised period of land drainage.
- The post World War II period saw a major drive to improve the drainage of the area by the installation of pumping stations, to improve the agricultural productivity of the land. This was the priority of that period.
- 635km² of Somerset is below sea level. This equates to 18% of the county being below sea level.
- Some areas of the Somerset Levels and Moors have been formalised as a flood storage reservoir under the Reservoirs Act e.g Currymoor.
- The Somerset Levels and Moors are one of the largest wetlands in Britain and home to wildlife of national and international importance. Thousands of hectares of land are designated as Sites of Special Scientific Interest (SSSI), Ramsar and Special Protection Areas (SPA). The SSSI designated land attracts Environmental Stewardship Payments.
- They cover over 60,000 hectares of low-lying land, mainly Grade 3 and 4 classifications, and include several major towns. A lot of the land is below sea level.
- The main rivers flow across the low moors between artificial raised banks. The Environment Agency manages the main rivers and operates a number of structures and pumping stations.
- The Internal Drainage Boards are responsible for managing the non main rivers through the operation of sluices and gates.
- During the winter months and occasionally during the summer, the rivers rise to a level where they overflow onto the moors. We cannot pump this flood water back into the rivers until river levels drop.

- The tidal range in the Bristol Channel is the second highest in the world. This not only causes tidal flooding, but the high tides hold back flood waters in the rivers across the Somerset Levels and Moors making river flooding worse.
- The widespread flooding of the Somerset Levels and Moors that we are currently experiencing is just one in a long record of flood events. There are records of flooding back as far as the 1600s. Some of the more significant events over the last 100 years occurred in 2012, 2000, 1997, 1960 and 1929. Over fifty other flood events have been recorded, which also led to widespread flooding. This history of flooding demonstrates that flooding in this lowland area is not unique.
- In 1919 historical records show that 280 km² of the Levels and Moors were flooded. This widespread flooding was before many of our flood defences and raised embankments were constructed. In comparison today only 65km² is flooded. Our defences have protected over 200km² of land and property.

The Environment Agency's challenges for the Somerset Levels and Moors

The key issues are:

- Balancing the flood risk management needs to protect people and property with agriculture and nature conservation.
- Securing capital and revenue investment for the infrastructure needed to continue to maintain the pump-drained systems that do not protect large numbers of property but ensure agricultural and environmental viability.
- Historically, hundreds of assets were constructed when this part of the country received 85% Grant in Aid for capital projects from MAFF at the time under Government policy. However, Government policy and priorities have changed from protecting agricultural land to protecting people and property. In the current economic climate, we are unable so far to attract local funding to continue to maintain the ageing infrastructure which does not protect people and property.
- Since the floods in 2012, there has been increased pressure on the Environment Agency to increase the maintenance on main rivers, in particular to extensively dredge the Rivers Parrett and Tone. Under the Government's partnership funding policy we are unable to justify the full funding of this work. Partnership Funding was introduced to make sure that investment in flood management is not constrained by what Government alone could afford to do, to increase certainty and transparency over the level of Government funding for each project, and allow a greater level of local ownership and choice.
- We are working in partnership with the local authorities, the Internal Drainage Board and the Royal Bath and West of England Society to discuss fundraising for this project. The Environment Agency, the Wessex Regional Flood and Coastal Committee and Somerset County Council have pledged £1.5m towards the total

estimated cost of £4m. The Royal Bath and West of England Society is seeking ways of raising the £2-3m to enable work to start.

- Climate change predictions over the next 100 years indicate a significant increase in the risk of serious flooding in Somerset from both more rainfall and rising sea levels.

Local challenges for the Somerset Levels and Moors

- All the issues identified above are wider than the Environment Agency's responsibilities. Therefore, we are working with our partners to come up with a long-term vision for the Somerset Levels and Moors. To this end, the previous Minister, Richard Benyon MP, facilitated the setting up of a task force to progress this aim led by key stakeholders.
- Stakeholder hot topics – more maintenance, more pumping, dredging the rivers, more investment to protect isolated communities and maintain existing assets, minimise summer flooding, enhance the environment, sustainable agriculture and businesses, protect road infrastructure, improved drainage, funding to protect agricultural land, payment to store flood water, reduce run-off from developments, food security.
- Local MP has some concerns – provision of funding for coastal compensatory habitat in the area (e.g. Steart peninsula) is perceived to be a greater priority; lack of sufficient provision for maintenance of the rivers and defences.
- It is acknowledged that on the rivers Parrett and Tone de-silting would have some flood risk benefit, but would not prevent widespread flooding in circumstances such as those currently being experienced. Flooding would still happen, but increased channel capacity would help to get water off the land more quickly. Significant ongoing maintenance would also be required to sustain these flood risk benefits. It should also be noted that the larger the channel in a tidal section, the more rapidly silt will start to accumulate again. Although these works would benefit the Currymoor and Northmoor area, it is unlikely that they would have any significant benefit on the moors upstream of Langport e.g. Muchelney and Thorney.
- In consultation with the Parrett and Tone Internal Drainage Board, we have identified a number of priority locations on the rivers Parrett and Tone where there is a narrowing of the river channel (pinch points) caused by silt accumulation. De-silting works commenced in October 2013 and the first five pinch points on the River Tone were completed. These works were stopped before Christmas due to high river levels and flooding. Pinch point de-silting is an interim step to maximise channel capacity whilst the feasibility of longer-term approaches are explored with partner organisations.

- It should be noted that the estimated £4m capital dredging project, covers a 4km length on the Tone and a 4km length on the River Parrett. It does not include dredging the rivers of the wider Somerset Levels and Moors.

2013/2014 Flooding situation

- Over the last month we have experienced widespread flooding across the Somerset Levels and Moors. It is the largest flood event we have ever recorded. We now estimate that there is in excess of 65 million cubic metres of floodwater on the land. This covers an area of 65 km² (65,000 Ha).
- 30-40 properties have flooded on the Somerset Levels and Moors. The villages of Muchelney and Thorney have been totally cut off since the New Year, with residents being transported by a boat provided by the county council. Road access to the communities at Wick and Oath (West Sedgemoor) are cut off, with flood waters reaching the threshold of properties. There has also been major disruption to a number of 'A' roads in the area for the past month.

Operational Update

- We are currently carrying out the single largest pumping operation ever experienced in Somerset. In addition to our 40 permanent pumps, we have mobilised a further 25 temporary units. We are currently pumping at a higher rate than that during the 2000 and 2012 flood events.
- From this afternoon, at Northmoor and Saltmoor we will have seven permanent pumps and 15 temporary pumps operating to remove floodwater.
- We have brought in extra manpower from around the country to support our teams who have been working 24/7 on the flooding incident for the past month.
- We have teams out in the field 24/7 operating and clearing debris from structures, maintaining the pumps and reinforcing floodbanks with sandbags where problems have occurred.
- We are currently preparing for the high tides next weekend, which has the potential of tide locking the flooded Parrett and Tone Catchments, restricting both pumping and the removal of floodwater. These tides also pose the risk of further overtopping of defences along the tidal section of the River Parrett. Where low spots in the defences were identified after the last set of high tides, sandbags have been placed along these banks to provide extra protection.

Partnership Working

- Sedgemoor District Council declared a 'major incident' on the Somerset Levels and Moors on Friday 24th January. We continue working closely with our partners

in the County and District Councils, to ensure contingency plans are in place for the welfare and safety of all residents affected by flooding. We are part of the 'Tactical Command Group' and 'Gold' working with partners. Wherever possible we are joining up our communications.

- On 16 January the Environment Agency supported a visit by the current Minister, Dan Rogerson MP, where he saw first hand the extent of flooding and met with our partners and members of the community most affected by flooding.
- We also continue to work closely with our partners (e.g. Somerset County Council, district councils, Natural England, RSPB and the Internal Drainage Board) to achieve a long term vision for the Somerset Levels and Moors.
- This event has created considerable interest through all forms of media interest-locally, regionally and nationally.

Environment Agency
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