

Ordinary Meeting of Harberton Parish Council 10th October 2013

This document has been compiled to provide information to support consideration of the following agenda item:

Item 10 Flooding in Harberton Parish

Contents:

- i) Responses received to public questionnaire following flooding event on 17th September 2023
- ii) Photographs of flooding in Harberton
- iii) Notice of emergency closure of category 12 road ref uUCR 302 between near Copplethorn Cross and Belsford.
- iv) Report on flooding in Harberton produced by Harberton resident, Peter Cogley
- v) Grant funding available
 - a. Devon Communities Together Fund (*NB an extension to the funding deadline has been given*)
 - b. Natural Flood Management Programme

Flooding in Harberton Parish on 17th September 2023

Public responses to digital survey

Following heavy rainfall between 16th - 18th September, several properties in both villages of Harberton and Harbertonford were affected by flooding, as were some of the roads.

To understand the extent of the flooding the Environment Agency and Devon County Council got in touch with the Parish Council to ask some questions about which properties and roads were most affected in order to better understand what happened. To get a full picture, the Parish Clerk opened up these questions to residents to share information and experiences.

The Parish Clerk took the opportunity to invite comment from residents about the kind of support that the community was able to give each other - what was helpful and what could have been useful if someone had thought about it before the event happened. Responses were sought to support thinking about whether there is anything that people living in the Parish could do to prepare themselves should a similar event happen in the future.

The online survey was circulated via social media groups used by residents in Harberton and Harbertonford, and a link included in the Harberton Village Circular.

16 residents responded to the survey. Of these:

- 9 responded as the resident or on behalf of a resident of a property that was flooded.
- 8 to comment on flooding of the highways and land around properties
- 2 responded to make suggestions for community preparedness for any future flooding events
- 11 responses shared information relating to experiences of flooding in Harberton
- 5 responses shared information relating to experiences of flooding in Harbertonford

The following **properties** were named by respondents as having been affected by the flooding:

Harbertonford

- Moreleigh Cottage, Harbertonford, TQ9 7TS
- 2 Harbourne Terrace, Harbertonford, TQ9 7TP
- 3 Harbourne Terrace, Harbertonford, TQ9 7TP

Harberton

- 3 St Clements, TQ9 7SN
- 4 St Clements terrace. My property was flooded with 6 inches of water on the ground floor....leaving 1 inch of silt on the ground floor.
- The Old Forge
- Town Farm Barn
- Orchard End, Harberton TQ9 7SN - One of the 2 modern houses at the end of the cul de sac at Town Farm. The property is one house away from where the deluge of water entered the village. There was minimal damage internally, but only because recent installation of sealed doors kept the water out. Mud lines on the doors show that the house would have flooded without these. There was extensive damage to the outside hardstanding around the property. 3 inches of mud deposited at the back of the house. The gravel driveway was largely washed away. I also co-own the private access road at Town Farm. The road bore the brunt of the water flow down towards St Clement's Terrace. Large amounts of straw and mud debris were left on the road. Drains have been filled with debris.

The following roads or areas of land were reported as having been affected by flooding:	
<ul style="list-style-type: none"> Where the A381 meets the Moreleigh Road in Harbertonford Pear Tree House, Harbertonford - My driveway ponded (like I've never seen before) and the ditch in my garden filled (like it does in winter sometimes) but very minor. All drained by sunrise. The Melbray, Harbertonford TQ9 7TS - water filled the garden and made it to the top step at the rear door but did not enter the property. The garden filled with mud and water. We now have an issue that the gravel in the garden is on concrete and has mud underneath it. This means that when it has subsequently rained the garden is a mud bath and the car gets stuck. I am not sure how we resolve this as the mud has nowhere to go. 	<ul style="list-style-type: none"> 4 St Clement's Terrace My garden and sheds flooded with water/mud/straw to 1 meter deep. Leaving mud & straw 30cm deep. I was driving out of the village west to east, from the bus stop area Towards the little bridge over the Harberton stream at The Old Forge, at 6.45 am on Sun.17 Sept. Screw lane - between Belsford Mill Cross roads and Gills Cross From evidence on the ground and first hand accounts on the ground all roads, lanes and paths experienced a large amount of excess water flooding down towards the village 'bottom' / Preston Barns area / Old Forge Some signs of run off past my house, Manor Cottage TQ97SP, up the cricket pitch lane leading up from Vicarage Ball. The drain at the junction opposite Tristford Farm was packed with foot-thick silt afterwards, and the upper stretch of lane showed signs of scouring from high volumes of water. Belsford service road at the bottom of the green lane
Properties were affected by flood waters at approximately:	
2am on Sunday 17 th September 2023.	Between 2- 3am on Sunday 17 th September

Please let us know any further information that you think would be relevant to share with Devon County Highways, Devon County Flood Team or the Environment Agency about the flooding event.	
<p>The culvert doesn't work. The road drains aren't big enough. I have videos of the road before, during and after the flash flood The drain at the front of the house was left blocked in the clean up by the environment agency</p>	<ul style="list-style-type: none"> When a village floods it would be really helpful if YOU ALL turn up and offered your knowledge & support in dealing with it. I am shocked that we 100% relied on our own initiatives. We had to call you all day after day....I think you started to arrive on Tuesday & Wednesday....that is too late! The flood waters were full of mud and straw indicating that there needs to be better catchment management. The relevant authorities were on site immediately after the flood then everyone seemed to disappear which needs explaining as it did make me feel abandoned during the clear up This was a mud/slurry slide not just a flood. This road (Screw Lane) frequently floods and it's generally the community which sorts it out - new landowners have now attempted to keep bund holes clear to allow water to run across their land but with the mud/soil from the farmers fields being run off so quickly it's easy for them to become quickly blocked. The farmer needs to address his run off management , the bind holes need to be kept clear frequently but that's a big job for one landowner taking all the farmers mud and hedgerows management which isn't their responsibility I found the (Vicarage Ball) road thick with mud, and a car thrown sideways across the road, blocking it. I turned back, and went up near St.Clement's Terrace, where there was a lot of activity and mud. [A resident] told me about the flooding of [an elderly resident's] house and her rescue. I went home (1 Wesley Place) and found

	<p>there had been some slight seepage of rain- water under the front door due to the downpour of water down the hill from the corner drain (covered over with mud) from opposite Tristford Farm. [A resident] very kindly cleared the drain the next day. I went out and linked with [a resident] and family at 6 Wesley Place, whose ground floor was devastated. I brought them tea and toast. and talked with neighbours at No.3 and 4 Wesley Place. Later I brought [a resident] at St.Clement's Terrace some soup for lunch.</p> <ul style="list-style-type: none"> • I work in the SWW Waste Water Network local department and I made specific observations to see if the sewer network flooded out. I saw no visual evidence the SWW combined sewer or EA watercourse + SWD flooded out of plotted Manholes. The flooding seemed to erupt from the watercourses themselves - this is backed up by visual evidence and reports from local residents. • Information or opinion? Austerity after 2010 took away our parish lengthsmen. Road and drain maintenance has been poor, especially as regards road sweeping and leaf removal in the autumn. • Flooding of Screw Lane has been common for a number of years especially since the withdrawal of Lengthsmen's services. The council has attempted to recruit replacement services but of course all other rural councils are doing likewise. Support for training new operatives would be most helpful from DCC • The green lane (Belsford) sits below a number of fields and has previously been worked on about 15 years ago by the council and lots of stone was dropped in it to make it useable but all that stone has been moved by flood water and blocked road causing it to flood
What kind of support do you think that people in the community were able to provide that was useful, both during and after the flooding event?	
<ul style="list-style-type: none"> • Neighbours helped each other to clean up their flooded houses. • Local help • After the flood locals were very helpful in clearing the affected houses • There was no warning, no immediate support to evacuate residents. The environment agency were only concerned with the road and offered no help to home owners. There was no offer of support or accommodation from the council. There has been no information about what went wrong or why the new system failed us 	<ul style="list-style-type: none"> • Their time and energy in clearing mud. Which is very kind but really should not be the job of the community. • The community were the main support during and post flooding. They were clearing roads and drains, feeding affected residents and assisting with clear up for private residences • I was on holiday when it happened and got back a week later. Was informed about it the day it happened by someone in the village. • Muscle and spirit [sic] • Local community were great not sure who cleared Screw lane eventually but they cleared the mud from the road but blocked the drainage holes with that clearing so it flooded again days later - lack of local knowledge/sense in that case • Tea and sharing about the impact of the mud visiting front doors. • Local people provided the majority of physical, mechanical and emotional support in the very early stages • SHDC supplied sandbags after a couple of days, supplementing community-held stock. The Environment Agency also attended with an emergency team and a land management (?) team whom I met and interacted with. Villagers helped each other with emergency clean up, offers of equipment and accommodation. I've heard that

	<p>an intended village emergency plan was 'parked' a while ago, but would an alert system have been any more effective?</p> <ul style="list-style-type: none"> • It was heart warming to see the response of neighbours and the local farming community to quickly come to the aid of villagers. • (Belsford) We were blocked in - road was flooded and covered with water stone and debris from the green lane - luckily local resident had mini digger and moved all the debris to the side of the road so we could get out in our cars - it's now in a pile at the end of the green lane effectively blocking that as the green lane itself is now also trench line as the water course has eroded a channel Down it.
<p>Is there anything else that could have been useful to help prepare for flooding, or help clean up afterwards? How might the community be better prepared in the future?</p>	
<ul style="list-style-type: none"> • Obviously a better water route for the culvert. A warning system that actually is operational. The council could actually spend time cleaning away the silt from the roads affected, so that residents don't have to constantly deal with this being tracked back into their homes once they have been cleaned. The highways could empty the drains, now full of silt, posing an even greater threat to future flooding • There needs to be proper flood defences. • The EA flood defences could have been working. Ie the culvert and the pump. • If the same was to happen this weekend we would have the same result. What is the plan for this? 	<ul style="list-style-type: none"> • Urgent investigation and remedial action is required to manage the run off of water from the fields above Screw Lane in Harberton. Measures are needed to disseminate and delay the water so that it does not flow down into the village in one avalanche. The methods of farming these fields must be managed to prevent further flooding especially as climate change will only see increases in incidences of high sudden rainfall. • The farmer who ploughed his fields should not be allowed to use all those fields in that way. It's too dangerous for the settlement to have 60 acres sloping towards the village with no protection. But the thing that would have helped the most is if the lane (screw lane?) had the drainage issues sorted out years ago. It continually floods. • We received absolutely no warning, I'm signed up to EA flood alerts which didn't send any kind of warning. I hope the local drainage assets are being regularly maintained, I personally saw no evidence of this leading up to the flooding. Could the council adopt the private drainage assets to ensure they are regularly maintained. • The authorities arrived very late post event, we need skips and regular bin collections to get rid of damaged goods and garden waste. • Future preparedness could be improved by installing flood resilient doors and floors in the affected properties - it would be great to receive some financial assistance with this • Again, was on holiday whilst it happened, so not sure what else could have been done. But i have been messaged by a few people who have my number as only recently moved in and everyone's been v kind. • Not allowing high up fields to be cultivated. They should only be pasture. Need a bylaw. • Local knowledge of the drainage holes so they weren't blocked when clearing the road itself - better management of farmers run off - regularly clearing of water course but the rain came so early in the season no one was prepared for it • Sand bags available throughout the year.

	<ul style="list-style-type: none"> • If the flooding risk remained there appeared to be zero support for further support such as sand bags, council support, action plans in place. Council support was minimal and late. Support for rehousing, mechanical support, etc Locals report this event happened 14 years ago so there is talk that no lessons were learnt. • Maintained buddleholes and drains, anticipation of run off from large fields above the village, better crop and land management. • The first I knew of the flooding was when a mud statue knocked on my door who turned out to be the PC clerk on the hunt for Aqua-sac's. One thing the PC could do is understand the need for more of these to be distributed to villagers and perhaps the community fund could be used to pay for them. • If the flow of water down the green lane also know as Watery Lane has been better managed over the years it might not have been so bad but this was extreme and sometimes you can't predict extremes and it was made worse by the fields having been harvested - not the farmers fault just bad timing - different issue at Screw lane where the mud from the recently harvested fields did cause issues and frequently does as there the farmer doesn't take steps to prevent the frequent mud slides into the road after rain
<p align="center">Is there anything else you'd like to say?</p>	
<ul style="list-style-type: none"> • Why was the EA camera and warning system not activated on the culvert? Why has the council not installed proper drainage systems that can cope with these conditions? Why has no one from the council come to clean up the road silt, mud and branches? We as residents have missed work time to do this. What on earth are we paying the council and government bodies for if they don't do their jobs! • For two years we've had work at the back of our property, been inconvenienced by road closure. A bus has hit our garden wall due to the road works and a lorry hit our house. I would like an explanation of what work has been done, what it should have done and why it failed. I would like to know what the plan is from all agencies to avoid a repeat incident. I would like to know from each agency what their statutory duties are for these incidents and what their response was. • When I heard the rain and saw the puddles in the night - I checked the gov website (https://check-for-flooding.service.gov.uk/) and it said no flood warnings, so I went back to bed. I hope the poor people in Harbourne Terrace do not rely on this resource. Seems strange that it would not even say "flooding is possible", even while several houses were under water. Maybe it only covers predictions of river levels (the Harbourne, which is at the end of my garden, was not exceptionally high, throughout) and it was incoming streams problematic in this case, which it does not cover? Would be good to understand this better. 	<ul style="list-style-type: none"> • I am shocked in your slow and insufficient responses. I hope moving forward this changes. • I hope there are lessons learnt from this, including better catchment management and more regular drainage surveys/clearance. I understand that a large amount of rainfall fell in a short period however the mud and straw absolutely played a role in making this event worse. • Learn from past mistake. Previous flood that affected the upper part of the village was caused by cultivation of a pasture field. • The community were great we never saw a council person - we've reported the fact that the pothole repairs repeatedly done on the Belsford service road where literally washed out of their potholes so we now have craters in the road which are a hazard and have been reported but still not seen anyone. Thank god for self help • I am concerned about the emotional / psychological impact on the residents who had downstairs covered in muddy water, and will have to move out as a result while things dry and get cleaned. Some of the residents are into their seventies, eighties and nineties - and their security has been shaken and we all have suffered the trauma of the landslide-flood. If there could be some forum/Zoom/ for people to share their experiences and give support to each other face to face, maybe with a counsellor present and guiding - that would be good, for bringing people back together again.

Flooding in Harberton 17th September 2023

St Clement's wall 3.06am Sunday



Vicarage Ball. Sunday 3.21am, before the Fire Brigade arrived



St Clement's Terrace from the gate. 3.22am Sunday

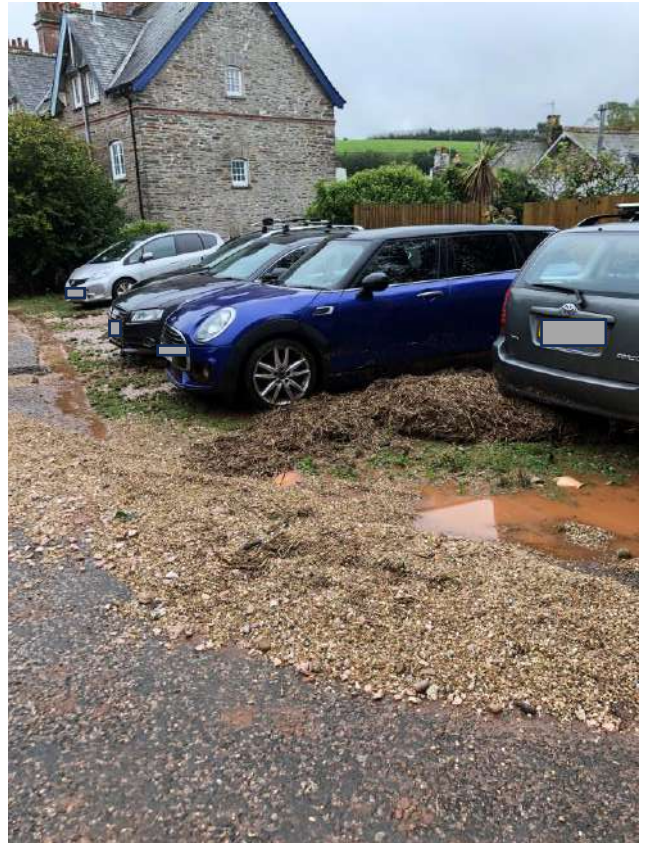


St Andrew's Cottages kitchen. 3.44am Sunday, already going down from the surge at 2.45



Example of flood waters damage to property (St Andrew's cottages)

Debris around cars behind St Clement's terrace



Vicarage ball during clean up (farmers cleaning roads). Picture shows water levels on wall



St Clement's Terrace clean up





View from hedge bank into Tristford Farm Orchard, showing wide sweep of grass flattened by water overtopping bank along a considerable distance



Looking west along Screw Lane, standing on top of hedge bank, straw/mud up to top of hedge bank, road surface not visible, covered in debris deeper than wellies



Buddle Hole East 10" twinwall pipe is buried beneath this; runoff has flowed through hedge over hedge bank



Mud on screw lane

Belsford

Blocked road into Belsford



Erosion of Watery Lane



Wash down from watery lane which blocked the Belsford hamlet's only road





Harberton Parish Clerk <harbertonparishclerk@gmail.com>

Emergency Closure of Harberton uUCR 302

1 message

Paul McFadden [REDACTED] 3 October 2023 at 17:37
To: Harberton Parish Clerk <clerk@harbertonparishcouncil.org>, Councillor Jacqi Hodgson
[REDACTED] public rights of way - mailbox [REDACTED] on.gov.uk>
Cc: Alan Martin <[REDACTED]>

Dear All,

Please find attached details of an emergency closure of Harberton uUCR 302, the Category 12 road from near Copperthorn Cross to Belsford.

Unfortunately, it's been severely damaged by recent weather-related flooding, and is too hazardous even for walkers to negotiate.

This closure will be followed by an 18 month closure, which will give DCC time to consider a plan of action to restore the route to an acceptable level.


Many thanks,

Paul.

Mr Paul McFadden
Public Rights of Way Warden
Public Rights of Way Section
Highways and Traffic Management
Devon County Council
[REDACTED]
[REDACTED]

[Privacy Notice](#)

2 attachments

 **Harberton uUCR 302 04_10_23__24_10_23.docx**
38K

 **Harberton uUCR 302 Closure Plan.pdf**
835K

ROAD TRAFFIC REGULATION ACT 1984

SECTION 14

DEVON COUNTY COUNCIL

TEMPORARY PROHIBITION OF TRAFFIC

DEVON COUNTY COUNCIL hereby gives **NOTICE** that:

From: **WEDNESDAY, 4th OCTOBER 2023**

To: **TUESDAY, 24th OCTOBER 2023** both dates inclusive.

No persons shall proceed on the following public highway except for access to land or premises on or adjacent to that length of way.

Public Highway affected:

UNMETALLED UNCLASSIFIED COUNTY ROAD NO. 302, HARBERTON, from its junction with Road C204 (Blakemore Cross to Gill's Cross) to its junction with Road P1402 (Mill Cross to Belsford) – see broken red line on the adjacent plan.

The closure is necessary following severe damage to the surface caused by flooding.

The restriction shall remain in force for the above period or until the works have been completed, whichever is the sooner. It is anticipated that this closure will be followed by a longer-term closure.

The alternative route is via Road C204 to Gill's Cross, Road P1500 to Mill Cross and Road P1402 to Belsford, and vice versa – see blue dots on the adjacent plan.

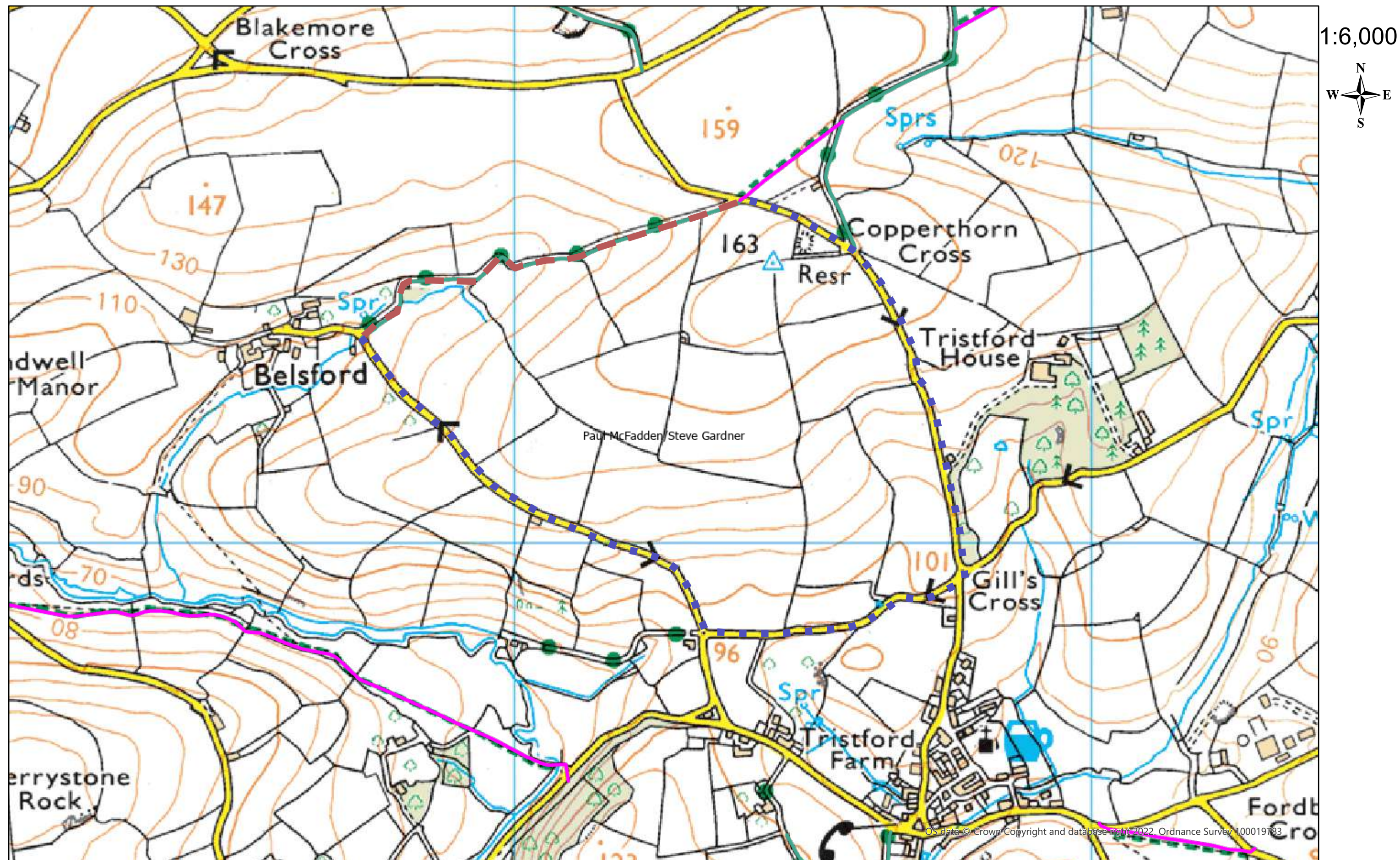
Further information may be obtained by contacting ***Public Rights of Way on 0345 155 1004***

Dated: **3rd October 2023**

Meg Booth

Director of Climate Change,
Environment and Transport

**Public Rights of Way
Great Moor House
Bittern Road
Sowton
Exeter
EX2 7NL**



ArcGIS
Plot:



Contains Ordnance Survey data.
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Some of the data comes from non-Devon County

Map Title:

Date: 03/10/2023

Author:

277259.48515E 59188.114853N



Harberton Flood

17th September 2023



Acknowledgements

Craig Penwarden

Jonathan Bean

Robert and James Rogers (Langham Farm)

1 Purpose and scope

This document aims to;

- 1.1 Capture photographic information
- 1.2 Describe the flood flow path and its effects
- 1.3 List the precursors
- 1.4 Recommend mitigation for future events
- 1.5 Act as a reference for Parish and District Councils and the Environment Agency

2 Harberton topography

Harberton is surrounded by several steep-sided valleys. The lowest contour point on Vicarage Ball is 70m above ordnance datum (AOD). The highest point is at the decommissioned reservoir at 165m. There is a 95m rise over a horizontal distance a little over 1 km (312 feet over 0.65 miles).

There are a number of springs identified on the OS map. Several streams converge into the final two streams entering Harberton from the north east and north west.

This event concerns the north west spring and the stream flowing south east into the village. Other parts of the village to the east and north were relatively unaffected.

The populated area is surrounded by farmland, both arable and livestock. The plan area of the farmland north of the village is greater than that of the village.

The inclined surface area north of Screw Lane is steeper than the average of 5.2 degrees.

3 Harberton flood plain

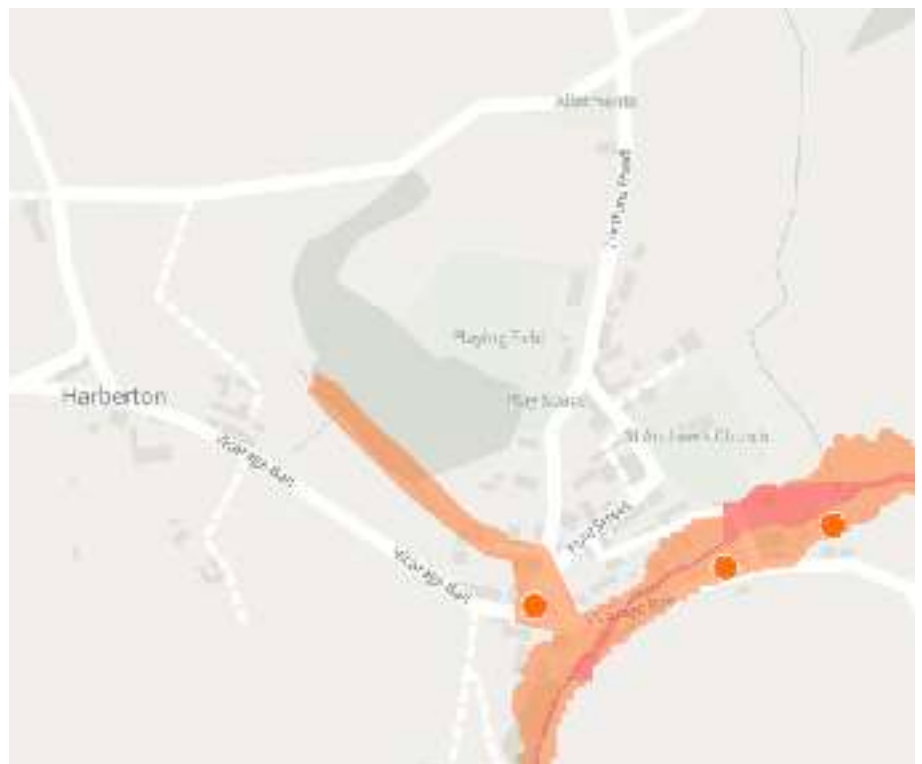
Harberton's flood plain is well-documented. A number of drain and culvert mitigation schemes have been engineered in recent years including an under-road junction under the lowest part of Vicarage Ball at approx 70 m AOD.



4 Flooding history

This flood was congruent with the left hand of the 'Y' of the published flood plain here in orange, designating medium risk. The red area and dots are deemed high risk.

There are many previous minor incidents, but this appears to be the worst in living memory. It was worse than the Tristford Road flooding in late December 2000 from land behind the Parish Hall.



5 What happened?

The Met Office state that first half of September in England was the hottest on record dating back to 1884. This was caused by the jet stream flowing to the north of the UK.

South Devon experienced multiple thunderstorms that night. Harberton's was from just after midnight to 03:00 BST on Sunday 17th September 2023.

The fire service arrived at approx 04:30 to relieve the flooding opening up blocked culverts and pumping out certain properties.

5.1 Flood water contents

The flood stream consisted of water-borne mud and chopped straw.

The field north of Screw Lane had been minimally tilled. This resulted in short lengths of straw on a shallow bed of tilled dry soil, with a compacted sub base soil.



5.2 Water pathway and sequence

5.2.1 The water ran down the fields north of Screw Lane and gathered against the south borders of those fields.



Rivulets in top field

Water banked up and pooled along the fields' southern banking along north side of Screw Lane.



5.2.2 The flow went through the two field gateways and other apertures onto the Screw Lane highway (approx 90m AOD). The run-off was held between the high banks on either side of Screw Lane. The evidence on this gate indicated there was minimal build-up behind the gate. Its open structure allowed relatively free flow to scour the gateways clear with minimal straw retention up to three bars high on the gate. It is not known if any of the gates were open or closed.



5.2.3 Screw Lane caught the flow which spilled round Threshing Barn's driveway.



Threshing Barn's driveway walls held. As Screw Lane filled up, the gateway and buddle holes on the south side of Screw Lane overflowed.

5.2.4 Two separate flow streams headed south down over the meadow.



Main flow from upper field, across Screw Lane



Looking north at 2 streams heading south forming a 'Y' shape



The larger stream heading south



Larger stream with top field in background

This grassland had only recently been cleared of brambles and other vegetation

5.2.5 The two streams ran south down across the grassland bowl into an existing pond.

This pond was dug many years ago to act as an attenuation pool for flood water. There were plans to deepen it as it had silted up over recent years. Many years ago hurdles were placed to capture silt. Being shallow, the pond overflowed, but it's banks remained intact



Looking north
towards the top field,
with the pond in the
foreground

5.2.6 The pond overflowed into a subordinate pool, then onwards south east down to the village. It is joined by a much smaller stream from the cricket pitch road



There are freshly broken fences, but no evidence of any significant dams along the stream



Levee

The stream has 1.5m levees on it's west bank to protect the field to the south. However there are gaps in the levee which caused spillage



Levee gap and spillage



The levee spillage eastwards was significant, which backed up against the Gunnera plants behind Ashbrook Cottage



5.2.7 The stream pushed through to the side of Ashbrook Cottage where it pushed over a north wall. It spilled north west to Town Farm and west along the road behind St Clement's Terrace.



Collapsed wall at Ashbrook Cottage



South east flow through Ashbrook Cottage side gateway

5.2.8 Three culverts

There is a culvert heading west under Ashbrook Cottage's garage. This culvert was overwhelmed. The flow went around both sides of the garage, taking the side gate off it's hinges. It is likely that most of the flow was through this side gate.

The flow through the Ashbrook culvert went west for a few metres to Town Farm Barn. It dog-legs at Town Farm Barn's rear culvert. Town Farm Barn flooded from front and rear as the flow went approx 220 degrees around the house.



Ashbrook Cottage and Town Farm Barn
both 740 mm diameter



St Clement's culvert 590 mm

The culverts are round pipes. The flow through a pipe is proportional to it's cross-sectional area (CSA)

The CSA varies with the square of diameter [$CSA = \pi \times (D/2)^2$]

Ashbrook and St Clement's CSA's are 0.45m², St Clement's is half the size at 0.27m².

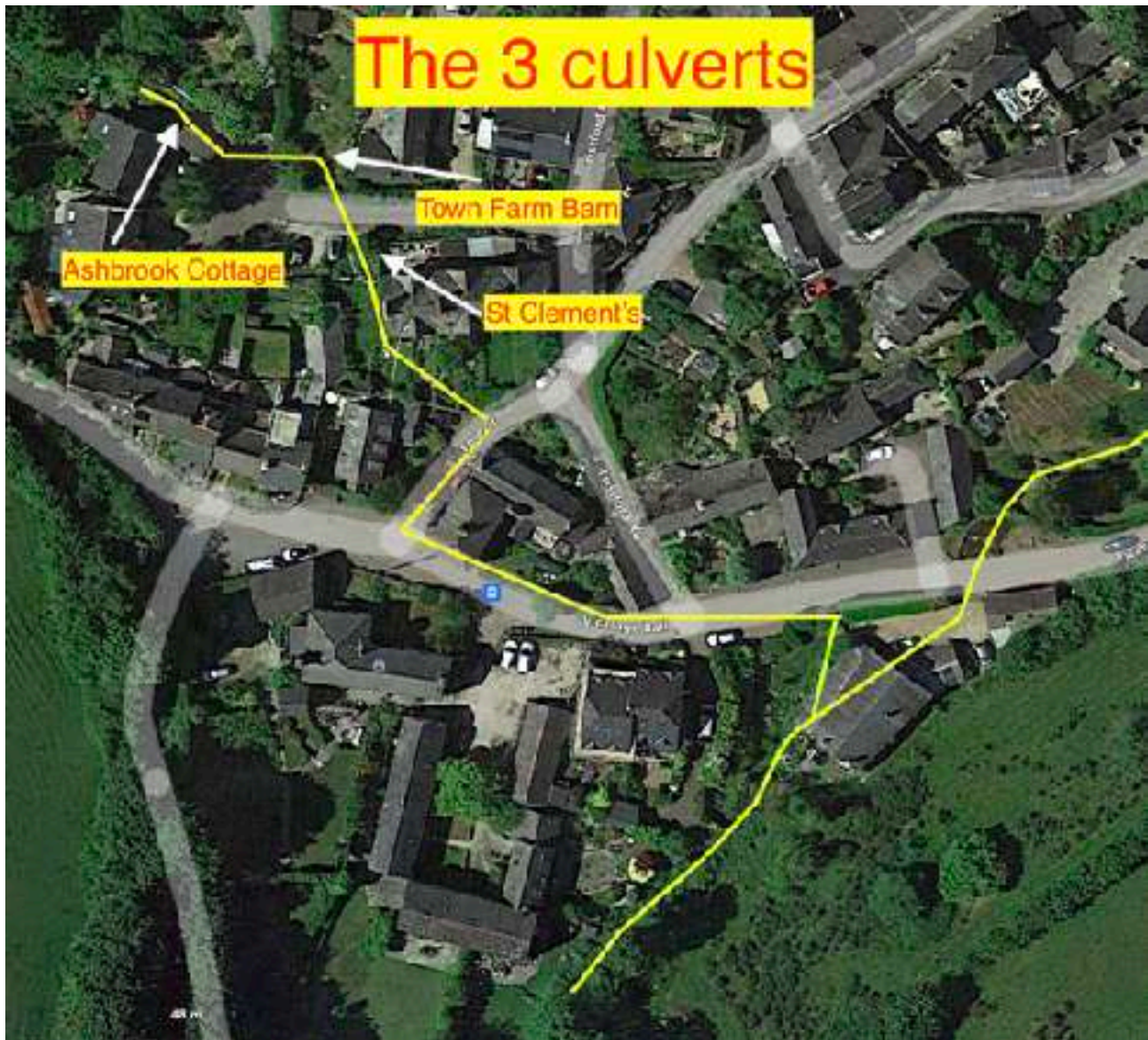
Only St Clement's has an inclined debris grating, which became clogged.

More on culvert debris gratings here:

https://bpb-us-w2.wpmucdn.com/sites.udel.edu/dist/0/7241/files/2018/03/CACR-05-03-Kobayashi_Kagawa-v6ydhhs.pdf

The three culverts are in a series. Ashbrook first, then Town Farm Barn and finally St Clement's.

It is not good practice to have the last in the series half the size of the two upstream. They were installed at different times.



Crucially, the Fire Service cleared the culverts at 04:30 and the degree of blocking was not recorded or witnessed in any detail.

5.2.9 The main stream then ran downhill to the south. It blocked the culvert at the western end of St Clement's Terrace. Fortunately, the north wall behind St Clement's was not breached.

Note the water mark in the culvert is 250mm (10 inches) below the topping stones.



Inclined grating over the culvert



St Clement's rear wall

The flow spread out to all low-lying properties to the south, including 6 Wesley Place where it entered the rear, traversed the house, and exited the front door at letterbox level. It also went east to Tristford Road where colliding floating wheelie bins woke the first responder.



The flow flooded the front gardens of St Clement's



A video of this is flow available

The high water mark on the doorframe brickwork is 4 bricks above the level on this photo taken at 03:09.

It was still raining heavily at this time.



5.2.10 The flow passed around both sides of St Clement's Terrace, taking wheelie bins down Tristford Road. It carried on south, heading down Fore Street, crossing the road to flood St Andrew's cottages from the western gateway where the sandbags are in this photo.



5.2.11 It flowed down Fore Street to Vicarage Ball, pooling on the southern kerbside of Vicarage Ball.

The lowest properties along the southern edge of Vicarage Ball suffered with the flow passing through, around and past them. The road camber protected northern driveways e.g. Globe House. Wesley House and no 4 & 5 St Andrew's cottages escaped lightly.

Fortunately this resident's drive was designed as a spillway when the old cow track was lowered to build the two houses.

He was woken and opened these gates, increasing the rate of spill to the stream at the rear.

This thinking needs to be applied to all the checkpoints of this flood. Spillways do not have to be grand concrete chutes, just graded slopes that are kept clear.

His house was spared, those either side were not.

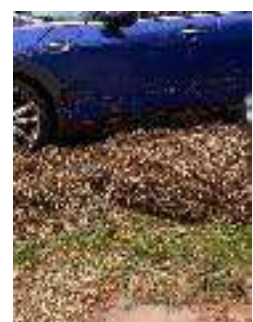


5.2.12 Preston barns 'U' shaped courtyard had the lowest affected properties and now perhaps the more challenging mitigation for future floods as the original archway has been in-filled.



Note the flow did not reach the second stream entering the village from the east. This is a completely different system from a different valley. The stream was full, but contained within its banks. The mud on the road here came from the west, not the stream from the east.

The flow was sufficient to lift and move cars.



5.2.13 The final chokepoint was the narrowing of the stream heading down to the sewage works to the south of Vicarage Ball.



The waterline / scouring mark can be seen on the southern bank and gate rails.



There was only a few traces of mud and straw in the garden of the Old Forge.

Presumably this was caused by the stream's chokepoint above causing a backing up against this garage door.

It was not all bad news. No4 St Andrew's cottages had a well-fitting, sealed front door. It withstood the main flow with minimal ingress.



6 The Farmer's point of view

The farmers write;

'We re-seeded the fields into grass. We decided to not plough the fields as this can lead to soil erosion problems. So instead we min-tilled the fields only disturbing the top inch or so of top soil.

Obviously as we all know we had 3/4 inches of rain in a couple of hours and the fields understandably couldn't cope with the sheer quantity of water leading to the run off.

Since the event we have met with the environment agency who confirmed it was an unfortunate set of circumstances that we couldn't do anything about. The only thing they did say was that due to the fields not being ploughed there was a certain amount of compaction which obviously effects the amount of water the ground can soak up. However, it is my firm believe with over 40 years of farming experience that if we had ploughed the fields the washing would've been considerably worse.

We have now at the request of the environment agency sub soiled the fields and that is how they will remain till the spring.

Going forward unfortunately there is little we can do to stop wash if we have such extreme weather events shortly after fields have been cultivated. One step we can and will take is to move the gateway on screw lane into the opposite corner as where it is situated is the natural run for water and if it had been blocked up at the time would've helped to hold back at least some of the soil.

Many thanks, [REDACTED]



An example of a sub-soiler.

The deep blades break and lift compacted sub-soil

The Environment Agency's report will be included in the Appendix when received.

7 Observations

There is as much land area above Screw Lane than there is below it. The topography is that of an ever-steepening catchment bowl, partially exposed to the prevailing moist westerly airstream forcing it upwards to 165m stimulating precipitation.

This was a 'flash' flood. It peaked shortly before 03:00 and had stopped flowing by dawn, leaving wet mud and straw.

There were several areas where the flow was captured and perhaps temporarily halted. This appears to have caused backwash and raised the water level at each of these locations. When each of these were breached, the flow was released downstream to the next. Presumably, Flow > Blockage > Backwash > Rising water > Release. However It could simply have been one very short, fast deluge with several slight interruptions. Everyone was in bed, no-one saw the worst part of it.

After Ashbrook Cottage, most of the straw was retained in St Clement's gardens and car park. Vehicle undersides, picket fencing and iron railings acting like a sieve. The sieve effectively strained the flow such that south of St Clement's the mud is as fine as cocoa powder.

Wesley House, the former chapel, with walls all around was in the flow path, but minimally affected. This shows the benefit of walled surroundings laid with mortar. No 4 St Andrew's cottages showed the benefit of a well-sealed front door.

One loose-laid garden wall was pushed over. The more substantial walls around St Clement's Terrace held. Given the height of the water at St Clement's, had one of the higher walls failed there could have been injury.

The relative culvert locations, sizing and grating needs to be reviewed.

8 Conclusions

The south of Harberton is aware of the risk of flooding. The Victorians built the first culvert in St Clement's. Various mitigations were in place but insufficient for the scale and circumstances of this event.

Screw Lane flooding is well understood and a regular item on the Parish Council's agenda, together with the vacancy for a linesman to tend to the various water courses, drains, culverts and buddle holes.

There were seven precursors:

- 1 An record-breaking hot and dry first two weeks of September
- 2 The field minimally-tilled the week before, loosening the dry topsoil
- 3 Straw chopped into short lengths (but note long straw was baled and removed)
- 4 The grass seed that had been sown did not have time to establish itself
- 5 High rainfall over 3 hours 75-100 mm approx
- 6 Lack of culvert debris management and, perhaps, St Clement's culvert sizing
- 7 Inadequate flood mitigation on specific properties in a known food plain

Attention to farming / land management, tidying-up waterways and some basic engineering will reduce greatly the effects of the next flood and ensuring it is just water.

9 Recommendations

Many hope that the farmer's intention to revert to grassland will suffice. Established grass land is hard to wash away. There would be very little loose topsoil and no chopped straw. However, farms get sold on, methods change, cash crops come and go, memories fade, so nothing is guaranteed. Some are predicting more extreme weather events. The farmers write that little can be done to prevent wash after soil cultivation on steep hillsides. Therefore, the precautionary principle should prevail.

Something similar happened 23 years ago, were the lessons learned and applied?

It is vital that an holistic approach is taken. Easing the flow upstream will cause increased flow for those downstream. If all are eased then the risk increases for Vicarage Ball's southern properties.

It is likely that some combination of capture and flow management could be used, but this is outside the scope of this report.

9.1 Must dos:

9.1.1 All properties subject to the main stream should have 1m high flood gates or at least flood-tolerant doors with taped shoot bolts, no cat flaps and letter-boxes. Particularly St Clement's, St Andrew's cottages and all properties along the south side of Vicarage Ball.

9.1.2 Ashbrook Cottage, The Old Forge, Preston Barns and the St Clement's Terrace front gardens should have spillways to take the flow to the stream.

9.1.3 Preston Barns needs specialised attention, with a flow path to the stream to the rear

9.1.4 Flooding in Screw Lane is a long standing issue that should receive extra attention.

9.1.5 All streams should be cleared regularly. Presumably by linesman, but also residents.

9.1.6 Culvert CSAs and use of debris gratings needs to be validated.

9.1.7 Home owners need to declare this event to their insurers, who probably know already.

9.1.8 This report to be scrutinised by the appropriate subject matter experts under the direction of the Environment Agency and other subject matter experts.

9.2 Advisories:

9.2.1 All stream-facing walls should be inspected for integrity and made flood load-bearing.

9.2.2 Alarm systems should be installed at chokepoints, particularly culvert entrances. Rising water needs to be sensed and an alerts given.

9.2.3 The long-standing Linesman vacancy should be pursued with vigour.

9.2.4 Resident's should consider 'Adopting a drain'. This existed some years ago. A couple of folk regularly clear the grating on the stream from the east and residents tend to their own culverts. This should be made more formal with appropriate back-up for absences.

9.2.5 The farmer's suggestion to block up his gateway(s) needs to be factored into the plans for Screw Lane's drainage.

Peter Cogley October 3rd 2023

APPENDIX

Space kept blank for Environment Agency report summary when received

Devon Emergency Resilience Fund Guidelines



Grant funding to help Devon Communities be better prepared in the event of an emergency (including flooding).

The Devon Community Resilience Board are pleased to announce a further opportunity to apply to our “fast Track” Devon Emergency Resilience Fund. This latest programme is financed by the South West Regional Flood & Coastal Committee local levy funding and by the Flood and Coastal Risk Management Team at Devon County Council. It is part of our commitment to help communities prepare for and respond to emergencies.

Purpose of fund and criteria

Experience has shown that a wide range of small resilience measures can make a real difference both to helping communities reduce the risk of incidents but particularly to the speed at which communities as a whole can respond to incidents and recover. Measures range from the provision of road signs, tools and personal protective equipment to the provision of sandbag stores and other flood protection equipment.

It is important that the community sets out their own shopping list. Examples of resilience measures can be provided by the Devon Community Resilience Forum.

Area of benefit

The area of benefit will be Devon – including Plymouth and Torbay

Who can apply

The Fund is open for community resilience groups, flood groups, parish/town councils etc. but not for individuals.

Scheme 1 is available to groups who are setting up a community emergency plan or flood plan.

Scheme 2 is available to groups who already have a community emergency plan or flood plan in place.

The grant is made available through Devon Communities Together. Community Emergency Plans must specifically give consideration to potential flood risk.

If you do not yet have a plan in place you may still be eligible for a grant if you can show how the funding will support activity identified in a draft plan in development.

How much can you apply for?

Scheme 1: Grants of up to £250

Scheme 2: Grants of up to £1,500

What can be applied for

Scheme 1

Costs associated with setting up a group and producing a plan: venue hire, production and photocopying of flyers etc

Scheme 2

- Rapid purchase of simple equipment (tools eg shovels, signs, road signs, emergency blankets, torches , high visibility jackets, radios for volunteer wardens, temporary portable flood barriers, sand bags, PVC sheeting, sand hoppers/stores, etc). The grant recipient is responsible for ensuring the items purchased are fit for the intended purposes.
- Exceptionally, a contribution to small scale, practical works that will provide immediate benefit to the community in reducing risk of flooding. For example, opportunities to clear out local ditches will be considered where either the landowner is unknown or where the community believe that it won't/can't be done by the riparian owner.

This will be a one-off pioneer clearance 'without prejudice' to reduce flood risk to the community ...not to relieve anyone of their riparian responsibilities i.e. Each small scale work proposal will have to be considered on a case by case basis.

There must be some initial dialogue with the Flood and Coastal Risk Management Team to check whether there might be any scope for such work. Please see next section for works that are not eligible. For small work enquiries, please contact the Flood and Coastal Risk Management mailbox: floodrisk@devon.gov.uk or call 01392 300 300 (ask for the Flood and Coast Risk Management Team)

What cannot be applied for?

- Studies or investigations to reduce risks – this scheme is to fund equipment and minor works that will provide immediate benefit to the community.
- Activities that are being promoted through the Devon County Council community self-help / Road Warden scheme, such as clearance of drains and the Snow Warden Schemes.
- Routine maintenance work or work that DCC is better placed to arrange, such as clearance of drains. Please see links to the information on Highways drainage clearance, the Road Warden and Snow Warden scheme and the support that Highways can offer (i.e. H&S training) for such work : <https://new.devon.gov.uk/devonhighways/>
- Any works on public sewerage systems managed and maintained by South West Water

- Grants to clear private ditches that fall within riparian responsibilities and will only benefit that landowner rather than the wider community.
- General maintenance and repairs of flood defences, unless there is a significant risk of not doing so and ownership responsibilities are unclear.
- Individual property protection work, such as flood gates, flood boards and non-return valves etc. Enquiries for such improvements should be made direct to floodrisk@devon.gov.uk

How can you apply?

Download the Application Form from the Devon Community Resilience Forum area of the website: www.devoncommunities.org.uk or email info@devoncommunities.org.uk or call 01392 248919.

Please make sure that you attach any quotes or screenshots for the items you wish to purchase.

Completed forms should be returned to Devon Communities Together as directed on the form.

There is no closing date for applications, however the fund is limited and will be allocated on a first come first served basis.

Next Steps

Applications will usually be processed within 14 days of receipt

You will be contacted by email to confirm approval of your application

With the exception of minor work, all grant money must be spent within a month of receipt, and evidence of expenditure will be required.

How will payments be made?

Payments will be made by bank transfer. The fund is unable to make payments direct to contractors/suppliers.

It should also be noted that the applicants remain responsible for all aspects of the work and DCT or the Devon Community Resilience Board will not intervene in disputes between applicants and suppliers and contractors. The Board cannot accept any liability for any damages, financial loss, etc. resulting from the group or parish and town councils' activities.

Health and Safety risk Assessment

It is advised that the community carries out a Health and Safety risk assessment before deploying any resilience measures.

For an application form or if you need more information please contact Devon Communities Together:

Email: info@devoncommunities.org.uk re: DCRF

Website: www.devoncommunities.org.uk

Phone: 01392 248919

[Home](#) > [Environment](#) > [River maintenance, flooding and coastal erosion](#)

Guidance

Natural flood management programme

Apply now for funding: increase flood resilience with Natural Flood Management

From: [Environment Agency \(/government/organisations/environment-agency\)](#)
and [Department for Environment, Food & Rural Affairs \(/government/organisations/department-for-environment-food-rural-affairs\)](#)

Published 22 September 2023

Applies to England

Contents

- — [The NFM programme](#)
- — [The programme aims](#)
- — [Who can apply](#)
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Natural flood management (NFM) uses natural processes to reduce the risk of flooding. These processes protect, restore, and mimic the natural

functions of catchments, floodplains and the coast to slow and store water.

NFM measures can include:

- soil and land management
- river and floodplain management
- woodland management
- run-off management
- coast and estuary management

NFM can also provide wider benefits including enhancing habitats and biodiversity, improving water quality and availability of drinking water, carbon capture as well as boosting health and wellbeing.



Slowing the flow with leaky dams within the Surrey Hills area. Photo credit: Andrew Turton, Defra Communications

The NFM programme

In September 2023 the Environment Agency and Defra announced £25 million funding for improving flood resilience through a new NFM programme.

We (the Environment Agency) are managing this programme.

The NFM Programme will help meet the aims of the:

- government's [policy statement on flooding and coastal erosion](https://www.gov.uk/government/publications/flood-and-coastal-erosion-risk-management-policy-statement) (<https://www.gov.uk/government/publications/flood-and-coastal-erosion-risk-management-policy-statement>)
- [National Flood and Coastal Erosion Risk Management Strategy \(FCERM\) for England](https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2) (<https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2>)
- government's [Environmental Improvement Plan](https://www.gov.uk/government/publications/environmental-improvement-plan) (<https://www.gov.uk/government/publications/environmental-improvement-plan>)

The programme will build on and embed what we learnt from the [£15 million NFM pilot programme](https://www.gov.uk/government/publications/natural-flood-management-programme-evaluation-report/natural-flood-management-programme-evaluation-report) (<https://www.gov.uk/government/publications/natural-flood-management-programme-evaluation-report/natural-flood-management-programme-evaluation-report>), which included 60 projects between 2017 and 2021.

Government has committed to double the number of government-funded projects that include nature-based solutions to reduce flooding and coastal erosion risk. Our target is for 260 NFM projects in 2021-2027. The NFM programme will help us achieve this target.

We want people and places to make greater use of nature-based solutions. This will help enhance flood and coast resilience and nature recovery as set out in the [FCERM Strategy Roadmap to 2026](https://www.gov.uk/government/publications/flood-and-coastal-erosion-risk-management-strategy-roadmap-to-2026) (<https://www.gov.uk/government/publications/flood-and-coastal-erosion-risk-management-strategy-roadmap-to-2026>).

The programme aims

The programme aims to:

- reduce local flood risk using NFM
- provide wider benefits to the environment, nature and society
- accelerate new and existing opportunities for NFM delivery and financing
- further improve evidence of NFM by filling knowledge gaps

Who can apply

Any person can apply as the lead applicant including a company, partnership, or any other legal entity. Likely lead applicants include:

- [risk management authorities](https://www.gov.uk/government/collections/flood-and-coastal-erosion-risk-management-authorities)
(<https://www.gov.uk/government/collections/flood-and-coastal-erosion-risk-management-authorities>)
- farmers, land managers and landowners
- third sector organisations including environmental Non-Governmental Organisations - for example river trusts and wildlife trusts
- businesses
- community groups

When and how to apply

You can apply now until 10 November 2023.

[Email us](#) to get your application pack. You can also read the [NFM prospectus](https://www.gov.uk/guidance/natural-flood-management-programme-prospectus) (<https://www.gov.uk/guidance/natural-flood-management-programme-prospectus>) which explains more about the application process.

Government and Environment Agency will announce the successful projects in early 2024. Work on these projects will take place between then and 31 March 2027.

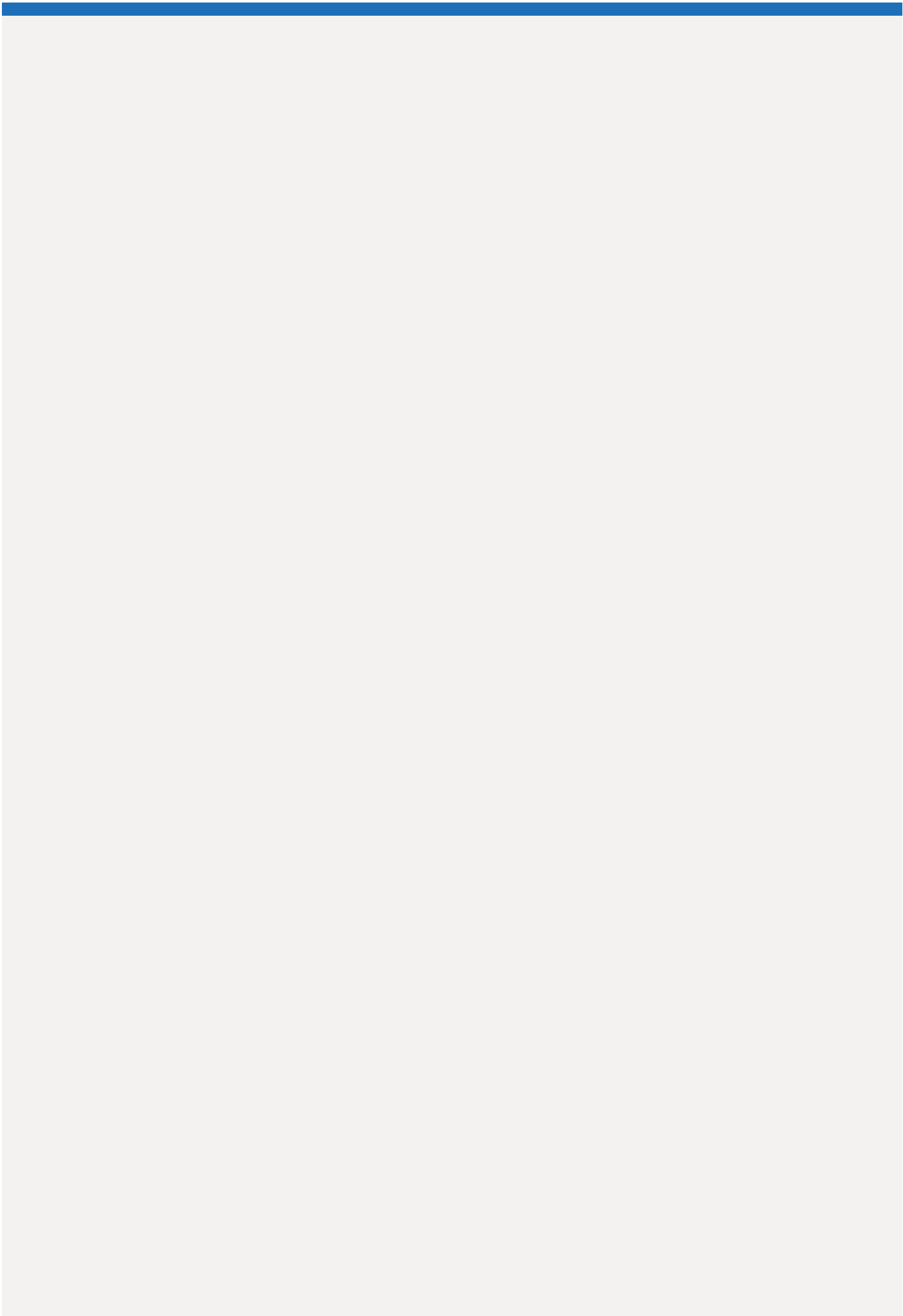
Please email NFM_Programme@environment-agency.gov.uk for any other enquiries.

Published 22 September 2023

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Explore the topic

[River maintenance, flooding and coastal erosion](/environment/river-maintenance-flooding-coastal-erosion) (/environment/river-maintenance-flooding-coastal-erosion)



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