

An aerial photograph of a river floodplain. The river flows from the top left towards the bottom right, curving through a landscape of green fields and some buildings. The sky is overcast and grey. The text 'The changing face of floodplains' is overlaid in white, bold, sans-serif font in the center of the image.

The changing face of floodplains

Media Report 2017



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Introduction: The reality of flooding

Currently in the UK, over five million people are at risk of flooding.

The UK's most recent severe flood occurred in the winter of 2015. More than 6,000 UK homes and hundreds of communities were hit by Storm Desmond, estimating to have cost more than £500 million in damages*.

Throughout the wettest calendar month on record, Storm Desmond affected twice as many houses compared with the storm of 2005, which affected 2,500 homes, highlighting that UK storms are getting worse. **

During the floods of Storm Desmond, heavy rainfall caused rivers and streams to burst their banks, resulting in water spreading over the floodplain.

As was the case with Storm Desmond, where a floodplain does not have the ability to store water, flood-water flows into urban areas, reaching homes, businesses and communities more quickly.

Recognising the vital role that floodplains play in flood management, Co-op Insurance has partnered with the University of Salford to conduct an in-depth scientific study of England's floodplains.

The findings: An uncertain future for floodplains

Conducted over a 12 month period, the study revealed that 90% of floodplains across the country have changed to such a degree, that they no longer work properly.

The detailed analysis showed that semi-natural woodland and rough grassland together now only occupy 6% of floodplain area, whilst wetland communities (fen, marsh and swamp) have been reduced to less than 0.5% of the total floodplain area.***

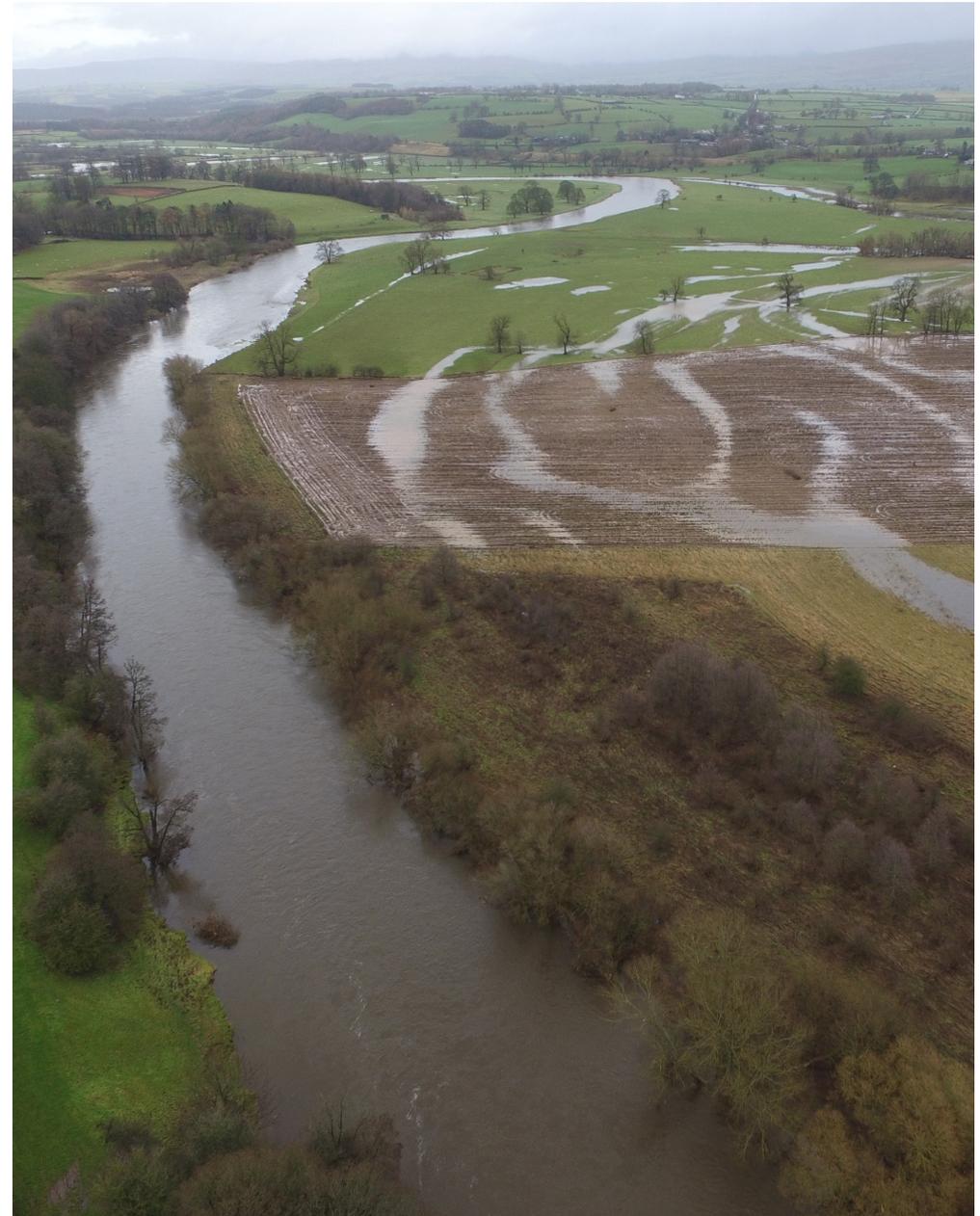
As a result, the velocity at which water flows across floodplains has increased significantly, resulting in towns and villages flooding more quickly.

This type of vegetation is important as it acts as a buffer to help slow the flow of water across land.

90% of our floodplains no longer work properly

How floodplains have changed:

- **65%** have been modified meaning they're now man-made, smoother surfaces
- **9%** have been lost to urban and suburban developments
- **4%** is now occupied by open water
- **6%** is now occupied by woodland and rough grassland
- **0.5%** is now occupied by wetland



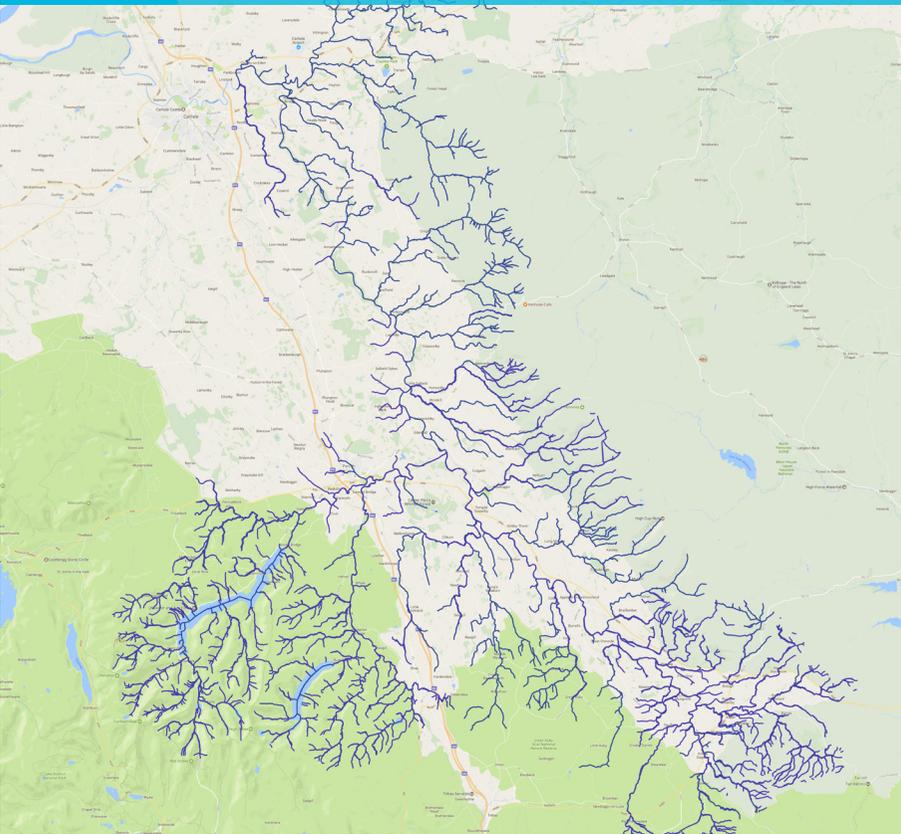
Source: Drone footage taken in 2016 of the River Eden in Cumbria

The lengthening of our rivers

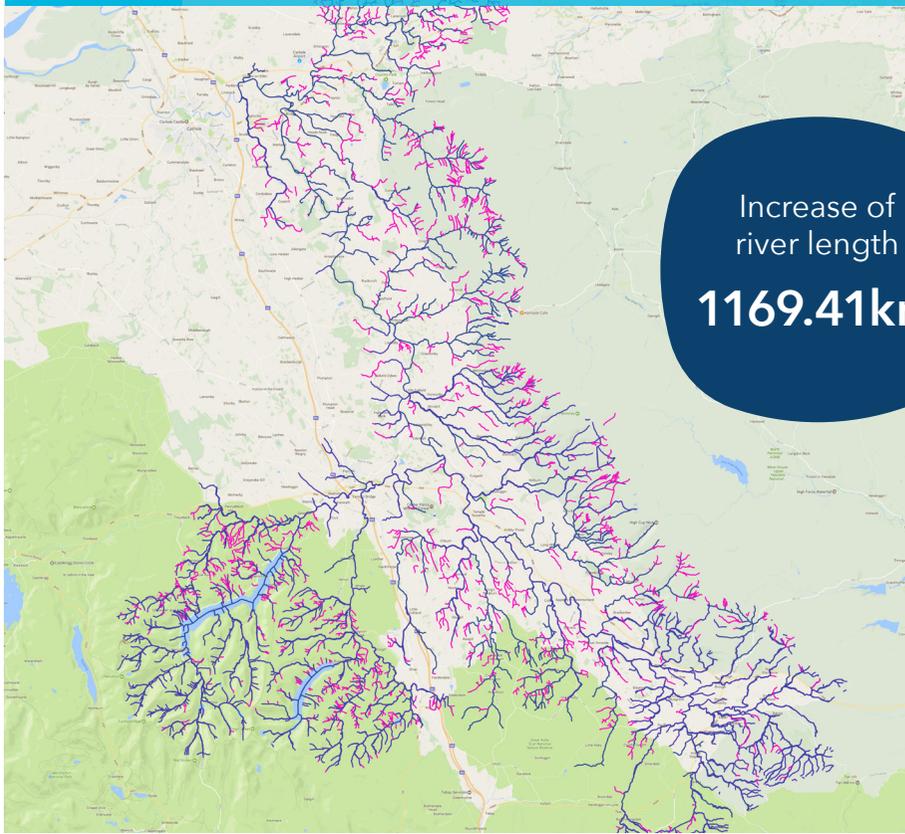
Birds eye images of the River Eden in Cumbria show the significant lengthening of the river due to the floodplain's inability to cope with such pressures. In 1890 the total river length was 2270.3km, yet in 2016 the river measured 3439.71 km, an increase of 1169.41km.

However this has resulted in floodwater moving downstream more rapidly, resulting in water reaching towns and villages more quickly.

1890 Total river length: 2270.3km

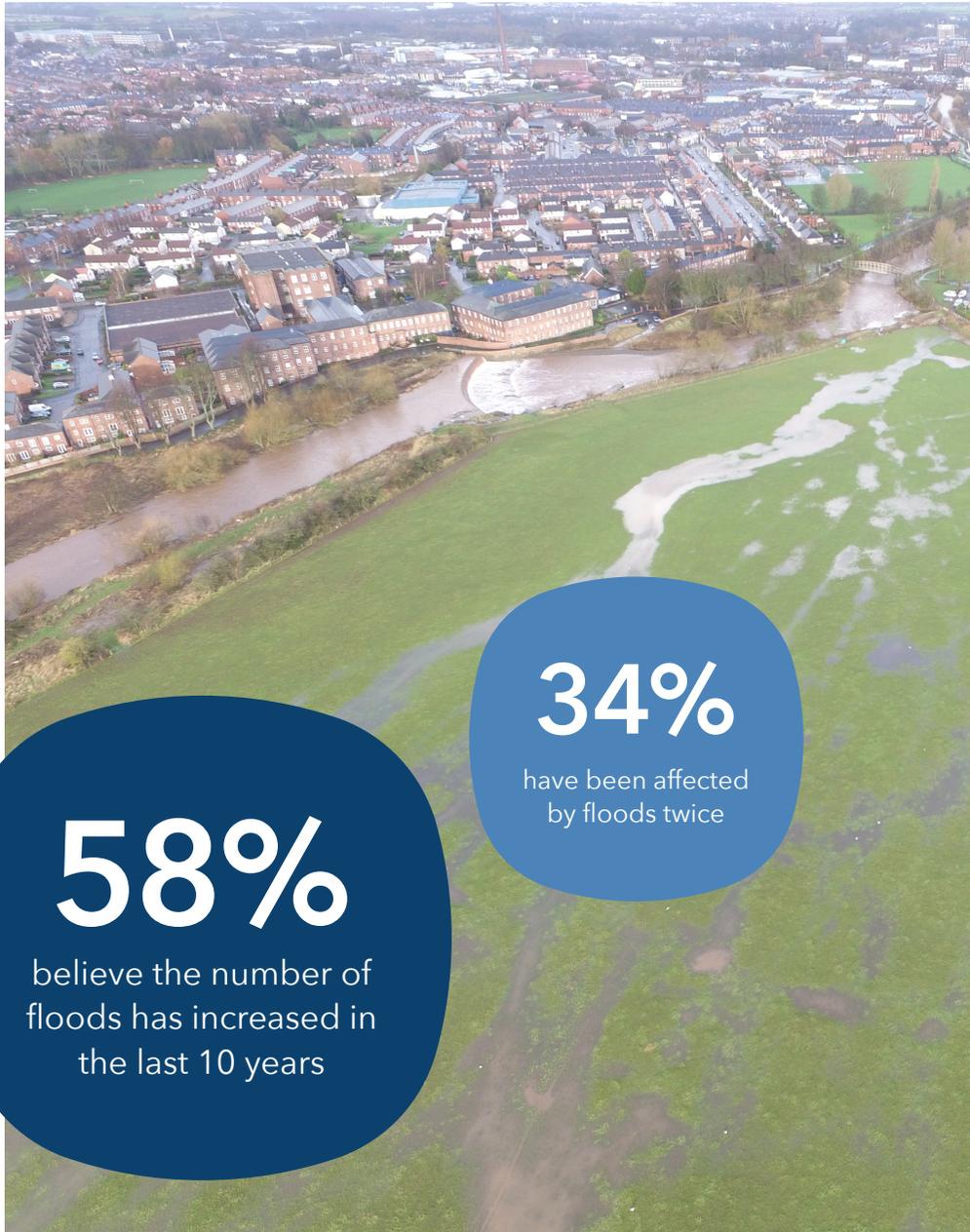


2017 Total river length: 3439.71km



Increase of
river length
1169.41km

The human impact of floods



Of the UK adults who have personally been affected by floods:

33%

have relocated out of a flood risk area

29%

said that the effects were devastating

29%

considered moving home but love their house too much

24%

moved out of their homes for a period of time

19%

frequently worry about flooding

18%

worry about flooding every time it rains

58%

believe the number of floods has increased in the last 10 years

34%

have been affected by floods twice

12%

lost all personal possessions including photographs

13%

separated from their partners because of floods

11%

have been affected three times by flooding



Case study, Mr Dyer-Smith

"In 2005 we had a near miss with floods, and so my wife and I prepared a flood plan. Due to this we were well prepared for when Storm Desmond hit in 2015. You hear horror stories about people losing personal, sentimental and irreplaceable items such as photographs, wedding dresses and childhood keepsakes but we were lucky. Some old chairs, furniture and a pair of glasses were the worst of our personal losses.

"What we couldn't possible have been prepared for however, was the impact that the floods of Storm Desmond had on the structure of our home. We immediately had to move out of the house and it was 326 days before we were back. Our entire claim, I believe came to over £100,000 but I dread to think what the claim would have been if we didn't have our plan in place."



"I know from experience that it takes 40 minutes to dismantle our grandfather clock and move it to safety so I prioritise this in our plan"

A personal experience on flood planning: Mr Dyer-Smith's top tips

1. Sign up to flood-line alerts at [gov.uk/sign-up-for-flood-warnings](https://www.gov.uk/sign-up-for-flood-warnings)
2. Ensure you have a supply of batteries, candles, torches and matches
3. Put all your mobile phones on charge immediately as power could be lost
4. Split the tasks with the household to get ahead
5. Move all sentimental and irreplaceable items upstairs at the earliest possibility
6. Put any furniture drawers upstairs or on work surfaces
7. Fill the bath, sinks, bottles and jugs with water as clean water may not be available
8. Undo electric plugs and remove all electrical items to safety
9. Drive cars to higher ground
10. Move fridges or freezers, at least 500cm off the ground
11. Bring boots and waders (if you have them) indoors
12. Stock up on rope for hanging things high up
13. Move furniture away from walls
14. Tie curtains away from the ground
15. Shut off electric power

Co-op Insurance takes action

Having witnessed first-hand the financial and emotional impact of flooding on UK homes and communities, Co-op Insurance is taking action.

In response to the academic findings Co-op Insurance has developed three key responses:

1: Community flood-watch toolkit

Co-op has launched a community flood-watch tool kit to help place prevention at the heart of every community in flood risk areas. The toolkit outlines three simple measures which, members of the community can put in place to help to prevent flooding. Co-op hopes that the toolkit will bring communities together to combat flooding in a tangible way.

2: Co-op's membership scheme

Local flood aid charities in Carlisle, one of the areas most recently impacted by floods will now benefit from the Co-op's membership scheme. This means that Co-op's members in Carlisle will be able to nominate flood related charities as their chosen cause, which in turn will receive 1% back on every £1 spent on Co-op's own bought products. Furthermore, the business will look to roll this out to high flood risk areas across the UK.

3: Fundraising for floods pledge

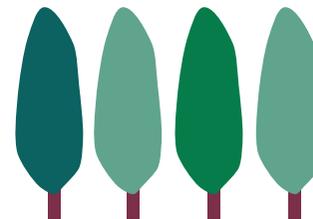
Thirdly, Co-op Insurance will invite its members in Cumbria to vote for a flood related charity which the business will commit to fundraising for, a period of six months.

Community Flood-watch Toolkit



1 Plant Smart

- Plant new trees, hedges, shrubs and bushes near the riverbank
- This will help to intercept and slow the flow of flood water helping it drain into the soil
- Advice on how to do this can be found at www.gov.uk



2 Encourage Regrowth

- Remove bottom branches from mature trees in winter
- This will encourage new branches to grow, helping to make them thicker and bushier
- This will also help intercept and slow the flow of flood water



3 Infiltration Station

- Infiltration is the process which allows water to drain into the ground
- Areas where water accumulates should be targeted to encourage infiltration
- Examples include pits with gravel infill as they require little to no maintenance
- You can also strategically block drains to encourage infiltration e.g. with a log

Toolkit measures in practice

The Royal Society for the protection of birds (RSPB) have completed a project in Swindale Valley (which flows into the River Eden), demonstrating how effective land management can reduce the risk of flooding and be successfully integrated with farming.

- 4,000 trees were planted along the river corridor
- 40,000 trees and plants were planted around the valley sides



Lee Schofield, RSPB Site Manager, Haweswater

“Restoring the river and its floodplain is one of many projects we’re working on at Haweswater. We’ve now completed the first phase of the project at Swindale Beck, to return the river to its original course.

“This was a real team effort made possible by the hands of volunteers in the local community and all the partners involved, demonstrating what can be achieved when communities come together.

“I hope that this work will inspire similar projects across other flood risk areas, which will provide a range of benefits to the public, including the alleviation of flooding.”



Martin Rogers, Flood Management and Access Adviser, NFU

“The NFU is fully committed to the Cumbria Floods Partnership.

“Farmers are happy to play their role to reduce flood risk in the county, however natural flood management is not the only solution and believe should only be used as part of a cohesive package of measures across the catchment.

“Where farmers provide a service in mitigating flood risk to help protect others, this must be part of a clear, planned strategy of total catchment management.”



James Hillon, Director of Products, Co-op Insurance

"Our research shows that three fifths (58%) of people affected by floods believe they're happening more frequently. We've seen first-hand the devastating effects that floods can have on peoples' lives and so we want to take action and try to help reduce the impact of flooding and support those affected.

"We commissioned this research to understand the underlying causes of flooding and I'm delighted to announce that off that back of this, we're enrolling flood aid causes in Carlisle into our membership scheme.

"And, in addition, we're going to ask our members to vote for a cause in Cumbria, one of the areas most impacted be flooding recently, which we will commit to fundraising for.

"Managing the impact of flooding is a major priority for our business and supports our aim to help make and keep communities safe."



Lynn Farrar, Chair of Neighbourhood Watch

"The clean-up of Storm Desmond was a prime example of what communities can achieve when they come together, demonstrating the true meaning of community spirit and proof that a little bit can go a long way.

"At Neighbourhood Watch our aim is to bring people together to help to create safer communities, so we're really pleased to see proactive measures being put in place that communities such as Cumbria can do together, to help create a difference.

"Furthermore, the funds raised by Co-op Insurance will help make a real difference and help to prevent floods in areas that need it the most."

Meet the experts



Dr Neil Entwistle, University of Salford

"We conducted this research as we really wanted evidence to inform thinking across the industry regarding floodplains. The research presented suggests that it is not necessarily lack of floodplain storage space that is the problem, rather the decreased efficiency of our floodplains, which no longer have the ability to delay water flow into towns, causing greater and more extreme floods.

"In natural conditions, rivers and floodplains would work together and create small, manageable floods. However, we have since modified our floodplains so much that we have increased flood risks to certain areas and unfortunately Cumbria has experienced the worst of this."



Dr George Heritage, University of Salford

"This lack of floodplain efficiency means that water now goes straight downstream and puts greater pressures on towns where flood defences are not strong enough to cope with such a flow of water, as we saw in Cumbria.

"If we can reverse modifications then we will start to store water further up the river, alleviating flooding pressures on our towns and members of the community can help to achieve this. Communities needn't be experts in flooding to help make a difference and they will be surprised to know that very little can go a long way."

Media Contacts

A range of images, comment and drone footage is available. For further information about this media report or the research findings please contact:



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References

References

*<https://www.theguardian.com/uk-news/2015/dec/08/storm-desmond-damage-cumbria-estimated-500m>

**<http://www.cumbriafoundation.org/ways-to-give-new/cumbria-flood-appeal-2015/faqs/>

***Research was conducted on behalf of the Co-op with the University of Salford over a period of 12 months. The flood inundation maps published by the Environment Agency in England were used to investigate the rivers Eden, Greta and Caldew.

**** A survey taken in April 2017 of 500 UK adults affected by flooding

To access the the community flood-watch toolkit please visit www.coop.co.uk/floodplains
For further details on Co-op's membership scheme please visit www.coop.co.uk/membership

About Co-op Insurance:

Co-op Insurance is part of Co-op Group, one of the world's largest consumer co-ops, owned by millions of members. Alongside Co-op Insurance, we have the UK's fifth biggest food retailer, the UK's number one funeral services provider, and a developing legal services business.

As well as having clear financial and operational objectives, the Group is a recognised leader for its social goals and community-led programmes.

www.co-opinsurance.co.uk

About Neighbourhood Watch:

Neighbourhood Watch is the largest volunteer crime prevention movement in the UK with 3.8 million household as members across England and Wales. The movement was established 33 years ago and is a 'good neighbour scheme' where neighbours look out for each other to help protect themselves from being a victim of crime. Traditionally the movement has focused on traditional acquisitive crime such as burglary and car crime, but volunteers have turned their attentions to cyber- crime and fraud. Independent research shows that Neighbourhood Watch can reduce crime by up to 26%.

The Neighbourhood and Home Watch Network is the national charity which acts as the voice of the movement across England and Wales. The charity is supported by the Home Office and works closely with national policing and community organisations, alongside supporting the wider membership.

Dr Neil Entwistle, University of Salford

Neil is a Lecturer at the University of Salford with a focus on teaching and researching in Physical Geography. Specific areas of his research are hydromorphology, river restoration, sediment transport dynamics, catchment connectivity, flooding and ecohydraulics. Neil's research centres on the use of remote sensing techniques in Terrestrial and Aerial Laser Scanning (TLS and ALS), and Unmanned Aerial Vehicles (UAVs) to map and subsequently model spatial and temporal changes in river dynamics often coupled with 1, 2 & 3 dimension river simulation. Recent UAV data has been used in collaboration with a wealth of other disciplines, for example from water management in South Africa, forest ecosystems in Chernobyl and UK river systems.

Dr George Heritage, University of Salford

George is a Geomorphology and hydromorphology specialist working towards a greater understanding of system processes and system response and placing this at the heart of engineering and environmental projects. George has worked extensively on projects in the UK, Europe, South East Asia, Africa and New Zealand. Recent project experience has centred around restoring river function and has included high energy upland bedrock-influenced channel re-routing, restoring floodplain connectivity, floodbank realignment to improve channel stability, weir removal and channel rehabilitation, urban river restoration, river naturalisation including the development of anastomosing channels and flood regime alteration to improve morphologic function.