



# Position Statement

## The Climate Crisis

- *Slow The Flow believes that the climate crisis has exacerbated our flooding problems locally, and will continue to do so*
- *Slow The Flow believes that Natural Flood Management (NFM) and Sustainable Drainage Systems (SuDS) approaches are an essential part of the toolkit to mitigate against the inevitable consequences of future flood events.*
- *STF believes communities can help reduce flooding risk by deploying NFM and SUDS strategies which are cost effective, but they must be widely understood and implemented at scale to have an impact.*

The Calder Valley in West Yorkshire has suffered severe flooding since records began. The topography of the area, with its deep steeply sided valleys at the heart of the Pennines, concentrates settlements into tightly packed locations on the valley floor, making them particularly prone to flooding. The frequency and intensity of flooding has increased significantly in recent years, with its unpredictability a constant factor in the lives of those living in the Calder Valley.

As our climate becomes hotter, there will be higher rates of evaporation which will increase the volume and intensity of rainfall. The intensity of this rainfall will increase the volume of surface run-off and this increase will create greater problems with ground saturation, making the likelihood of flooding more common.

The facts remain that:

- The effects of climate change are being felt
- The UK has experienced a 1.2 % rise in land temperatures since pre-industrial levels
- We must act not just to prevent climate change but learn to live with, and adapt to, the changes it will inevitably bring
- A warmer climate will mean a wetter climate; the inevitable result being increased flood events
- The MET office has documented that the UK's climate is becoming significantly wetter with rainfall totals rising by 4% over the last decade and a 17% increase in extreme rainfall events over the same period
- The rate and scale of climate change will make the management of flood risk increasingly difficult

- Our soils are at risk of devastating damage and loss from drought and flooding

### **Climate Crisis Context:**

The issue of climate change and carbon dioxide levels increasing in the atmosphere was discussed in the 1960's by Charles Keeling. In 1992 Rio Earth Summit led to the United Nations Framework Convention On Climate Change, this was followed by The Kyoto Protocol in 1997 and more recently the Paris Agreement in 2015, a legally binding international treaty on climate change. During this time the Carbon Dioxide measurements started by Charles Keeling at 313 ppm in 1958 are now reading 417 ppm and according to NOAA the global temperatures have risen by an average rate of increase since 1981 (0.18°C / 0.32°F) has been more than twice the rate of increase from 1880 to 1980.

The Climate Change Committee states that the UK is struggling to keep pace with climate change impacts, stating the following;

- Action to improve the nation's resilience is failing to keep pace with the impacts of a warming planet and increasing climate risks facing the UK.
- The UK is experiencing widespread changes in the climate; average land temperature has risen by around 1.2°C from pre-industrial levels
- Risks to soil health from increased flooding and drought

Climatic change leads to a risk of increased rainfall. With higher temperatures come higher rates of evaporation, and therefore more rainfall. This rainfall can occur in shorter and more intense bursts, increasing the volume of surface runoff. An increase in rainfall throughout the year leads to ground closer to saturation levels and therefore more potential surface runoff.

According to the Met Office 'Several indicators in the latest UK State of the Climate report show that the UK's climate is becoming wetter. For example, the highest rainfall totals over a five day period are 4% higher during the most recent decade (2008-2017) compared to 1961-1990. Furthermore, the amount of rain from extremely wet days has increased by 17% when comparing the same time periods. In addition, there is a slight increase in the longest sequence of consecutive wet days for the UK.'

The UK Climate Projections (UKCP) provides the most up-to-date assessment of how the UK climate may change in the future. Winters in the UK, for the most recent decade (2009-2018), have been on average 5% wetter than 1981-2010 and 12% wetter than 1961-1990. Summers in the UK have also been wetter, by 11% and 13% respectively.

### **Our position**

Slow The Flow believes that Natural Flood Management (NFM) and Sustainable Drainage Systems (SuDS) approaches are an essential part of the toolkit to mitigate against the inevitable consequences of future flood events.

When faced with the overwhelming nature of climate change, organisations like Slow The Flow (STF) are offering local solutions with global implications. The proof of our concept has already been demonstrated in our work at Hardcastle Crags, Hebden Bridge and through the local action we have galvanised with our volunteers.

However, the fact remains that there is often a lack of joined up thinking from both local and central government. As an organisation, we at STF are attempting to lead by example, but we must also stress that though we are highlighting the importance of local solutions and activism, support should be rolled out both nationally, and ultimately on a global scale. Our work alone is not enough, NFM must be undertaken at scale to have significant impact.

Decisive action is needed urgently if we are to attempt to combat the disastrous effects of climate change. An adequate flood response needs a joined-up approach from both government, developers, businesses, and householders.

At the end of the day, global warming is not a prediction, it is already happening, and the predicted temperature rises may be conservative estimates if global action is not taken.

The work undertaken by STF has drawn attention to the huge benefits of SuDS and NFM in alleviating and working to prevent future flood events.

In addition, it also highlights the benefits of a 'nature' based approach to flood management. These would include such measures as the protection and restoration of uplands, tree planting and the promotion and creation of more bio-diverse and sustainable approaches to rivers and wetlands. The multiple benefits of 'Green Infrastructure' approaches make a solid case for investment in NFM and SuDS – helping to alleviate climate change, as well as its consequences.

Alongside our activism, our aim has always been that of educators. The more publicity and support NFM measures gain, the greater the impact. Our work at STF is about being adaptive and ultimately realistic: climate change is happening, floods will happen, and in the short term we cannot change the inevitable consequence of human impact on the planet's weather. But, we believe, the inclusion of widespread NFM in our adaptation can help to prevent some smaller scale flood events, and reduce the devastating impact of larger ones.

The challenges ahead are huge and will inevitably involve overhauling many of our existing systems, redesigning public spaces and buildings and creating greener, more adaptive spaces in our urban environments. Slow The Flow will continue to draw attention to what we believe are the most beneficial and cost-effective solutions to many of the problems we face, but the challenge inevitably lies ahead.

## **References**

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