The climate emergency and the impact of extreme rain events â?? lessons need to be learned from what happened in Cowal at the weekend

Description

Mattress and tree in the River Eachaig below Loch Eck 9th October â?? note the colour of the water

While governments across the world fail to implement or row back on actions to reduce our carbon emissions and respond to climate change, CO2 fuelled hot air wreaks increasing havoc. The same heat that is causing more hurricanes in the Caribbean at the end of each summer often drives the tail end of those storms over the west of Scotland dumping huge quantities of water. The main difference between 2023 and the last few years is that the most extreme rain event â?? I have learned to avoid planning trips away in September â?? arrived later. That late arrival may be connected to the fact that July, August and September have been the hottest months on earth since human records began. Over the last few days it has been far warmer outside my house than in. In England it has been 25C.

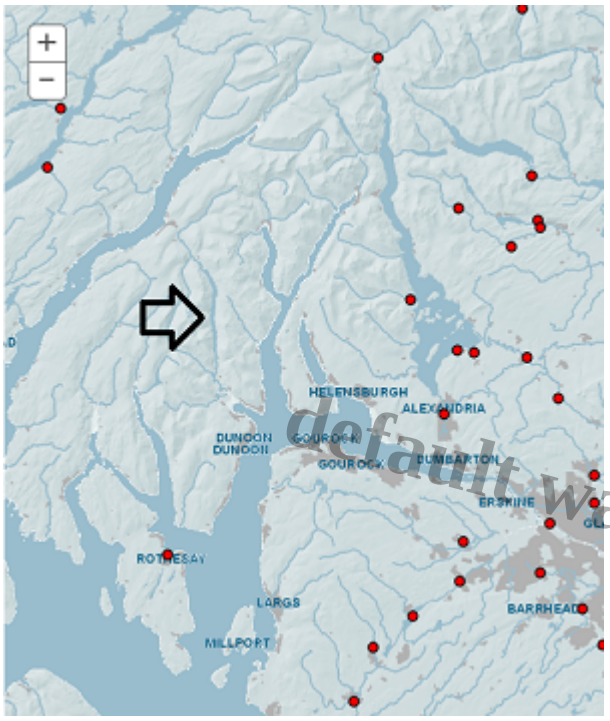
This post argues that what happened on Saturday and Sunday in Cowal provides yet more proof that government, inside National Parks and out, is fiddling while Rome burns and drowns. A significant part of the problem is that government as a whole uses the lack of information and data about what is happening to avoid tackling the real issues and keep the public in the dark.

How much rain fell in Cowal? Does government care?

By chance I had arranged to go over to Cowal on Monday to look at forestry there. Parts of Cowal were added to the Loch Lomond and Trossachs National Park as a result of intensive lobbying by local residents twenty years ago. Since then neither Park officials nor the Board have paid it much attention and Forest and Land Scotland have been given free rein to manage the land as they please.

While geographically to the LLTNPA HQ at Balloch, its quite a journey from there by road and in any case the A83 is often closed (I arrived at Hunterâ??s Quay at 10am to find long queues of cars waiting for the ferry â?? not the fault of the operator, Western Ferries).

Cowal is a very wet place but locals told me they had never seen such extensive flooding or experienced so much rain as fell on Saturday. Some were claiming that 200mm or 8ins of rain had fallen in the one day.



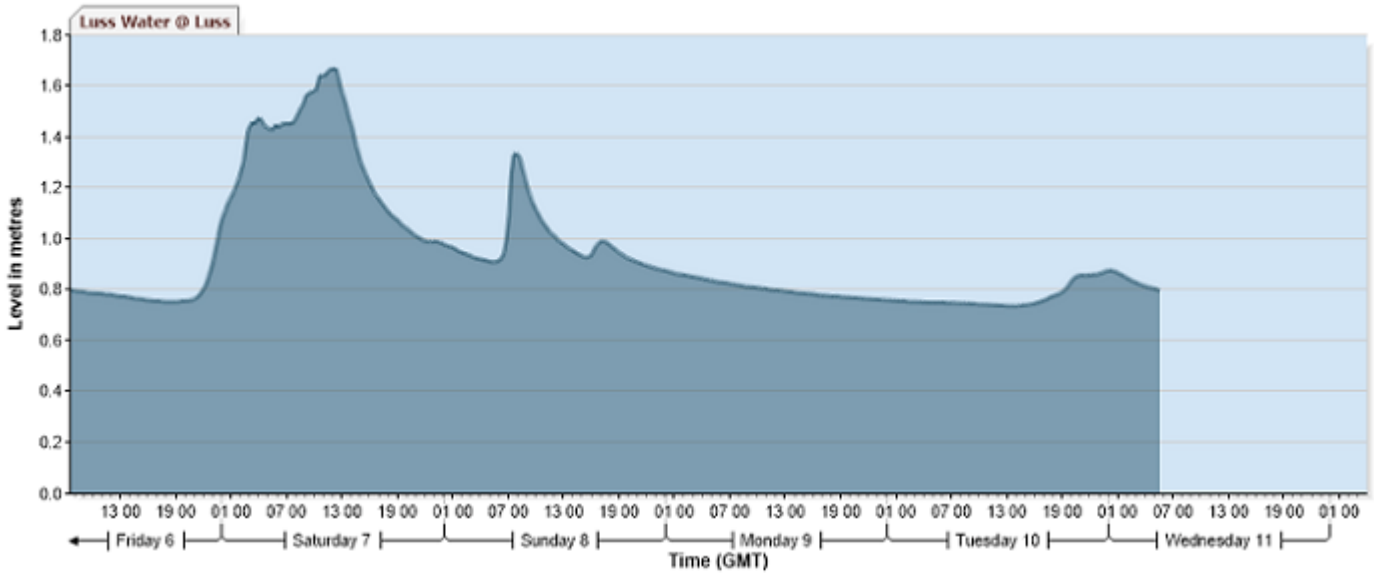
SEPAâ??s river guages â?? arrow points to Lock Eck at the heart of the Cowal peninsular. Luss is the red dot to the right of the arrow.

Unfortunately it is hard to verify that claim as the Scottish Environmental Protection Agency has not a single rainfall guage or river level monitoring station in the whole of the Cowal peninsular.

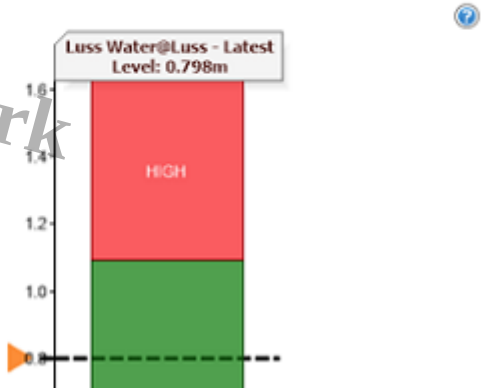
That is not SEPAâ??s fault. As the Ferret recently showed, the Scottish Government has slashed the funding of the agency responsible for protecting people and the natural environment over the last decade (see here). SEPA responds where it can or where it is expedient to do so â?? interestingly there are no less than two rainfall guages in close proximity at the Rest and Be Thankful!

If we are to prepare for and respond to extreme rain events we need comprehensive data on rainfall and river levels and the impact this is having across Scotland.

Looking at SEPAâ??s data for Luss, which has both a rainfall guage and a river level guage one can get an idea of the severity of what happened.



Station Name	Luss Water@Luss
Level Data (.csv, .json, .xml)	CSV | JSON | XML
Gauge Datum (mAOD)	12.621
Catchment Area (km2)	35.3
Record Start Date	March 1978
Highest Level on Record	1.629 at 2020-08-04 15:15:00



The water level at Luss on Saturday appears around 1.6m, touching the highest level since records began in 1978. Unfortunately, SEPAâ??s rainfall data (see here for Luss) only give daily rainfall the last couple of months, with historic information provided in the form of monthly records. The spreadsheet I have download for the current period (see here) shows 67.2mm of rain fell on Saturday and 45.4 on Sunday. You cannot tell therefore if Saturdayâ??s rainfall at Luss was a record. Moreover, even if it was, before inferring that this record rainfall was responsible for record water levels one would need to take account of other land-use factors (there is, for example, a hydro scheme on the Luss Water which affects its flow and water levels).

One also needs to take account of saturation of the land. The total rainfall recorded so far for Luss in September and October combined is 384mm. That is significantly less than the 454mm recorded in December 2015 for example.

Within this context, however, if local people are right and 200mm of rain fell in Cowal that is almost twice what fell in Luss and therefore what you see in the photos is hardly surprising.

The public interest questions this raises in terms of Scotlandâ??s response to the climate emergency is who is analysing the data we do have, identifying the gaps and looking at the implications? And why are bodies like the LLTNPA so incapable of speaking out about the need for far better information? Without data, for example, how can anyone say whether what happened on the River Elchaig was one

of those 1:200 year flood events which informs planning decisions?

The impact of the extreme rain event

The overhanging grass suggests that up to a metre of this section of bank may have been swept away

From the evidence I have seen and heard, however, the flooding in Cowal appears worse than anything that had been experienced for fifty years: trees, riverbanks and human infrastructure around and below Loch Eck were swept away by the water.

There was a big clear up underway with roads being cleared of rubble and items retrieved from the loch and river. The flood claimed at least one caravan from the park below Loch Eck, an example of planning failure and a warning of what might happen if the LLTNPA allows Flamingo Land to build chalets and develop other visitor infrastructure on the flood plain in Balloch (see here).

Note the height of the vegetation on the fence â?? the River is about 100m from the point this photo was taken

When the River Elchaig burst its banks the flood plain was covered with water to an extent that locals had not witnessed before. Two days later the water had disappeared but in that time the the flood plain had served its purpose. Without it the major road bridge on the A815 downstream might not have survived.

I am still trying to work out if the remains of the thin tree could have been lifted here by the flood!

And while the flood had re-arranged the brash in this conifer plantation, the trees will have helped hold back the force of the water.

Looking across Lock Eck to land managed by Forest and Land Scotland. Note the colour of the water and the difference in colouring between the left and right side of the felled area. Photo credit Nick Halls

The success of the flood plain, however, does not mean there is no need to be concerned. People I spoke to had never seen Loch Eck brown like this, filled with soil.

Loch Eck is a Site of Special Scientific Interest (see here):

â??for its outstanding fish community which is believed to be one of the most natural remaining in Britain. Loch Eck is one of only two Scottish localities for the powan, a race of the nationally rare whitefish Coregonus lavaretus and is also one of two British sites, and the only Scottish site, where Arctic charr Salvelinus alpinus and powan co-exist. The Loch Eck charr itself is of interest as a dwarf form and as one of the most distinctive races in Britain. In addition, the presence of the migratory Atlantic salmon Salmo salar and sea trout Salmo trutta trutta make Loch Eck the only water body in Britain where these four species occur together.â?•

So how will all this soil in the water have affected the fish in one of Scotlandâ??s most important sites for nature? Has there been a mass extinction event?

The need to monitor soil erosion and landslips

The worldâ??s soils are also eroding at an alarming rate (see here) and while SEPA monitors some soil erosion this is mainly for cultivated agricultural land in the east of Scotland (see here). The soils around Lock Eck may no longer be important for agriculture but they are still crucial for storing carbon and growing trees. So will Forest and Land Scotland (FLS), which manages most of the land around Loch Eck, get together with NatureScot and SEPA and review the extent to which their industrial forest practices has has been turning the water brown and affecting wildlife?

Along with better information on rainfall and flooding, the Scottish Government should be asking/equipping SEPA and our other public agencies to collect data from across Scotland on soil erosion .

Parallel landslips above destructive forest harvesting in Glen Lean, just outside the National Park boundary

That data on soil erosion should, as I have argued previously, include data on landslips. Government has shown almost no interest in that up till now despite what has happened at the Rest and Be Thankful. Perhaps with road closures becoming a more serious problem â?? within Cowal landslips last weekend closed the B836 in Glen Lean (where a bridge has also been partially swept away) and the B828 in Glen Mhor (see here) â?? government at all levels might also start to show an interest in understanding WHY landslips appear to be occurring with increasing frequency?

While the British Geological Survey does record landslips, there is no requirement on public agencies to report these and no system for relating records of landslips to land-use. The Board of the Loch Lomond and Trossachs National Park Authority has never once considered what they could do about landslips despite the near disaster on Loch Katrine (see here).

Three landslips above the west side of Loch Eck triggered by the rain at the weekend. This is land owned by the Scottish Government and managed by Forest and Land Scotland.

On Monday I spotted five new landslips within a few miles and my estimate is there may have been 25-30 across the whole of Cowal last weekend. I now expect them to be triggered by extreme events (photos from readers would be welcome!). While their cause is complex, which is why need to collect data on when and where they occur and link that to more detailed research, there is no question that land-management plays an important role.

The starting point for the landslip on the right in the photo above, for example, is where FLS have cut a road into the hillside which they have then lined with trees â?? an incredibly wasteful process â?? to provide a base for machinery to extract the remaining timber.

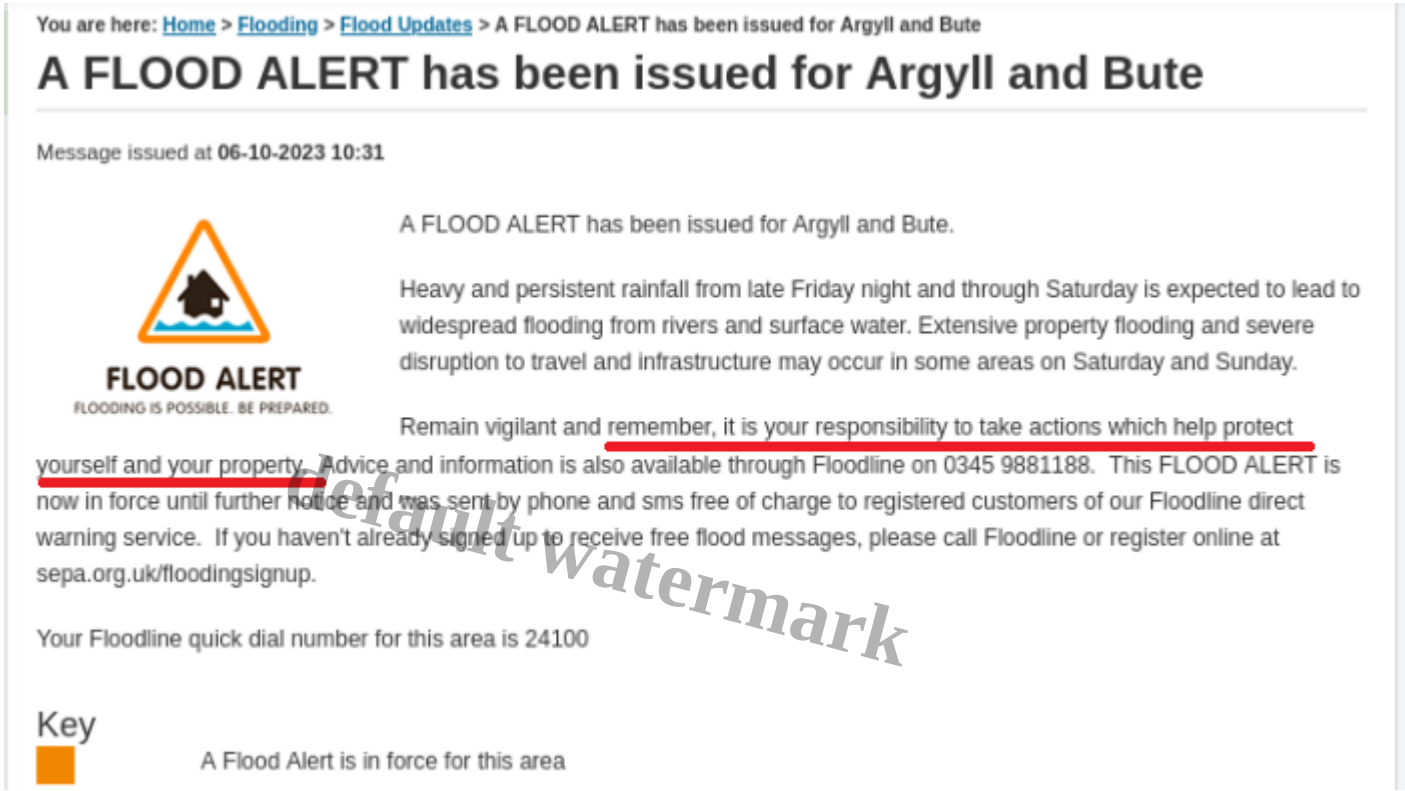
Whether soil from this FLS induced landslip reached the loch and was then washed out to sea is unclear but NatureScot should investigate. Their site management statement for the SSSI states:

â??The potential exists for some run-off from agriculture and some levels of siltation and possible acidification linked to forestry practices.â?•

Spot on! So how did NatureScot ever allow this track to be constructed?

Even from a blinkered industrial forestry perspective this is an incredibly stupid and unsustainable way to manage land. FLS need to preserve soils if it is to continue to grow trees for timber in future. Having trashed this public asset, perhaps FLS has already decided to sell it off?

What needs to happen?


You are here: Home > Flooding > Flood Updates > A FLOOD ALERT has been issued for Argyll and Bute

A FLOOD ALERT has been issued for Argyll and Bute

Message issued at **06-10-2023 10:31**

FLOOD ALERT
FLOODING IS POSSIBLE. BE PREPARED.

A FLOOD ALERT has been issued for Argyll and Bute.

Heavy and persistent rainfall from late Friday night and through Saturday is expected to lead to widespread flooding from rivers and surface water. Extensive property flooding and severe disruption to travel and infrastructure may occur in some areas on Saturday and Sunday.

Remain vigilant and remember, it is your responsibility to take actions which help protect yourself and your property. Advice and information is also available through Floodline on 0345 9881188. This FLOOD ALERT is now in force until further notice and was sent by phone and sms free of charge to registered customers of our Floodline direct warning service. If you haven't already signed up to receive free flood messages, please call Floodline or register online at sepa.org.uk/floodingsignup.

Your Floodline quick dial number for this area is 24100

Key

A Flood Alert is in force for this area

Actually, individuals can do nothing about the land management practices â?? like muirburn â?? which promote water run off and flooding. That is a government not an individual responsibility.

First we need to end the silence and the default position of all our public agencies which is to try and shift responsibility for tackling the consequences of global heating onto the public.

I cannot find any news releases about what happened at the weekend from the LLTNPA (last one was about the Oak Tree Inn targetting net zero by 2040 on 29th September â?? worthy but hardly a game changer), SEPA or NatureScot. Apart from the public roads network, the only public authority to say anything was FLS who advised drivers to avoid using their forest roads as short cuts because of the damage caused by the rainfall (see here). (FLSâ?? reference in their news release to waterlogged soils â??giving wayâ?• is a tacit admission that forestry tracks do pollute water courses).

Without news releases, media coverage of extreme events is limited to the impact on the transport network. Our public authorities are complicit in keeping the public ignorant about what is really happening. Both the public and the wildlife in Lock Eck deserves far more.

Second, the Scottish Government needs to resource our public agencies properly, so they can work together in the public interest, and commit to making changes to the regulatory and rural subsidy framework to change land-use where needed.

The sensible way to do this in respect of mitigating the impact of extreme rain events would to reinvigorate River Catchment (now called basin) Management Plans. Unfortunately, SEPAâ??s own

River Basin Management Plan for Scotland 2021-27 (see here) is almost silent on the question of land use and flood prevention. In my view it is not fit for purpose and needs to be radically revised.

A good start, as I have argued here, would be for Scottish Ministers to ask and finance SEPA to create a network of guages for monitoring rainfall and river levels across every river catchment, extend their monitoring of soil erosion across Scotland and as part of that set up a system for monitoring landslips. That would provide an information base for the various partners in each river catchment to plan what needs to be done to mitigate the impact of extreme rain events.

Meantime, the Green MSP Lorna Slater, as the Minister responsible for National Parks and Nature Scot could ask both authorities to report on what happened at Lock Eck and what they could do to reduce the likelihood of it being repeated.

Category

1. Loch Lomond and Trossachs

Tags

1. climate change
2. Forest and Land Scotland
3. landslips
4. NatureScot
5. Scottish Government
6. SEPA

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