

Flooding - Article from The Guardian Monday 13 January 2014

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Drowning in money: the untold story of the crazy public spending that makes flooding inevitable

Every year billions are spent in Britain and Europe on policies that wreck homes and lives through flooding

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'Vast amounts of public money are spent every year on policies that make devastating floods inevitable.' Illustration by Daniel Pudles

We all know what's gone wrong, or we think we do: [not enough spending on flood defences](#). It's true that the government's cuts have exposed thousands of homes to greater risk, and that the cuts will become more dangerous [as climate change kicks in](#). But too little public spending is a small part of the problem. It is dwarfed by another factor, which has been overlooked in discussions in the media and statements by the government: too much public spending.

Vast amounts of public money, running into billions, are spent every year on policies that make devastating floods inevitable. This is the story that has not been told by the papers or the broadcasters, a story of such destructive perversity that the Guardian has given me twice the usual space today in which to explain it.

Flood defence, or so we are told almost everywhere, is about how much concrete you can pour. It's about not building houses in stupid places on the floodplain, and about using [clever new engineering techniques to defend those already there](#). But that's a small part of the story. To listen to the dismal debates of the past fortnight, you could be forgiven for believing that rivers arise in the plains; that there is no such thing as upstream; that mountains, hills, catchments and watersheds are irrelevant to the question of whether or not homes and infrastructure get drowned.

The story begins with a group of visionary farmers at Pontbren, in the headwaters of [Britain's longest river, the Severn](#). In the 1990s they realised that the usual hill-farming strategy – loading the land with more and bigger sheep, grubbing up the trees and hedges, digging more drains – wasn't working. It made no economic sense, the animals had nowhere to shelter, and the farmers were breaking their backs to wreck their own land.

So [they devised something beautiful](#). They began planting shelter belts of trees along the contours. They stopped draining the wettest ground and built ponds to catch the water instead. They cut and chipped some of the wood they grew to make bedding for their animals, which meant that they no longer spent a fortune buying straw. Then they used the composted bedding, [in a perfect closed loop, to cultivate more trees](#).

One day a government consultant was walking over their fields during a rainstorm. He noticed something that fascinated him. The water flashing off the land suddenly disappeared when it reached the belts of trees the farmers had planted. This prompted a major research programme, which produced the following astonishing results: water sinks into the soil under trees at 67 times [the rate at which it sinks into the soil under grass](#). The roots of the trees provide channels down which the water flows, deep into the ground. The soil there becomes a sponge, a reservoir which sucks up water and then releases it slowly. In the pastures, by contrast, the small sharp hooves of the sheep puddle the ground, making it almost impermeable, a hard pan off which the rain gushes.

One of the research papers estimates that – even though only 5% of the Pontbren land has been reforested – if all the farmers in the catchment did the same thing, flooding peaks downstream [would be reduced by about 29%](#). Full reforestation would reduce the peaks by about 50%. For the residents of Shrewsbury, Gloucester and the other towns ravaged by endless Severn floods, that means – more or less – problem solved.

Did I say the results were astonishing? Well, [not to anyone who has studied hydrology elsewhere](#). For decades the British government has been funding scientists working in the tropics and using their findings to advise other countries to protect the forests or to replant trees in the hills to prevent communities downstream being swept away. But we forgot to bring the lesson home.



Wading through floods in

Swinbrook, Oxfordshire Photograph: Tim Graham/Tim Graham/Getty Images

So will the rest of the Severn catchment, and those of the other unruly waterways of Britain, follow the Pontbren model? [The authorities say they would love to do it](#). In theory. [Natural Resources Wales](#) told me that these techniques "are hardwired into the actions we want land managers to undertake". What it forgot to say is that all tree-planting grants in Wales have now been stopped. The offices responsible for administering them are in the process of closing down. If other farmers want to copy the Pontbren model, they must not only pay for the trees themselves, but they must also sacrifice the money they would otherwise have been paid for farming that land.

For – and here we start to approach the nub of the problem – there is an unbreakable rule laid down by the common agricultural policy. If you want to receive your [single farm payment](#) – by far the biggest component of farm subsidies – [that land has to be free from what it calls "unwanted vegetation"](#). Land covered by trees is not eligible. The subsidy rules have [enforced the mass clearance of vegetation from the hills](#).

Just as the tree-planting grants have stopped, the land-clearing grants have risen. In [his speech to the Oxford Farming Conference](#), made during the height of the floods, the environment secretary [Owen Paterson](#) boasted that hill farmers "on the least productive land" will now receive "[the same direct payment rate on their upland farmland as their lowland counterparts](#)". In other words, even in places where farming makes no sense because the land is so poor, farmers will now be paid more to keep animals there. But to receive this money, they must first remove the trees and scrub that absorb the water falling on the hills.

And that's just the start of it. One result of the latest round of subsidy negotiations – concluded in June last year – is that [governments can now raise the special mountain payments](#), whose purpose is to encourage farming at the top of the watersheds, [from €250 \(£208\) per hectare to €450](#). This money should be renamed the flooding subsidy: it pays for the wreckage of homes, the evacuation of entire settlements, the drowning of people who don't get away in time, all over Europe. Pig-headed idiocy doesn't begin to describe it.

The problem is not confined to livestock in the mountains. In the foothills and lowlands, the misuse of heavy machinery, overstocking with animals and other forms of bad management can – by compacting the soil – [increase the rates of instant run-off from 2% of all the rain that falls on the land to 60%](#).

Paying to keep the hills bare

Sometimes ploughing a hillside in the wrong way at the wrong time of the year can cause a flood – of both mud and water – even without exceptional rainfall. This practice has blighted homes around the South Downs (which arguably should never have been ploughed at all). [One house was flooded 31 times](#) in the winter of 2000-2001 by muddy floods [caused by ploughing](#). Another, in Suffolk, above which the fields had been churned up by pigs, was [hit 50 times](#). But [a paper on floods of this kind](#) found that "there are no (or only very few) control measures taken yet in the UK".



Viaduct over the River

Wye, Monsal Dale, Peak District. Photograph: Alamy

Under the worst environment secretary Britain has ever suffered, there seems little chance that much of this will change. In November, in response to calls to reforest the hills, [Paterson told parliament](#): "I am absolutely clear that we have a real role to play in helping hill farmers to keep the hills looking as they do." (Bare, in other words.) When asked by a parliamentary committee to discuss how the resilience of river catchments could be improved, the only thing he could think of was [building more reservoirs](#).

But while he is cavalier and ignorant when it comes to managing land to reduce the likelihood of flooding, he goes out of his way to sow chaos when it comes to managing rivers.

Many years ago, river managers believed that the best way to prevent floods was to straighten, canalise and dredge rivers along much of their length, to enhance their capacity for carrying water. They soon discovered that this was not just wrong but also counterproductive. A river can, at any moment, carry very little of the water that falls on its catchment: the great majority must be stored in the soils and on the floodplains.

By building ever higher banks around the rivers, reducing their length through taking out the bends and scooping out the snags and obstructions along the way, engineers unintentionally did two things. They increased the rate of flow, meaning that flood waters poured down the rivers and into the nearest towns much faster. And, by separating the rivers from the rural land through which they passed, they greatly decreased the area of functional floodplains.

The result, as authorities all over the world now recognise, was catastrophic. In many countries, chastened engineers are now putting snags back into the rivers, reconnecting them to uninhabited land that they can safely flood and allowing them to braid and twist and form [oxbow lakes](#). These features catch the sediment and the tree trunks and rocks which otherwise pile up on urban bridges, and take much of the energy and speed out of the river. Rivers, as I was told by the people who had

just rewilded one in the Lake District – greatly reducing the likelihood that it would cause floods downstream – "need something to chew on".

There are one or two other such projects in the UK: Paterson's department is funding four rewilding schemes, to which it has allocated a grand total of, er, £1m. Otherwise, the secretary of state is doing everything he can to prevent these lessons from being applied. Last year he was reported to have told a conference that "[the purpose of waterways is to get rid of water](#)". In another speech he lambasted the previous government for a "[blind adherence to Rousseauism](#)" in refusing to dredge. Not only will there be more public dredging, he insists, but there will also be private dredging: [landowners can now do it themselves](#).

After he announced this policy, the Environment Agency, which is his department's statutory adviser, warned that dredging could "[speed up flow and potentially increase the risk of flooding downstream](#)". Elsewhere, his officials have pointed out that "protecting large areas of agricultural land in the floodplain tends to [increase flood risk for downstream communities](#)".

The [Pitt Review](#), commissioned by the previous government after the horrible 2007 floods, concluded that "dredging can make the river banks prone to erosion, and hence stimulate a further build-up of silt, exacerbating rather than improving problems with water capacity". Paterson has been told repeatedly that it makes more sense to pay farmers to store water in their fields, rather than shoving it off their land and into the towns.

But he has ignored all this advice, and started seven pilot projects in which farmers will be permitted to drag all that messy wildlife habitat out of their rivers, to [hurry the water to the nearest urban pinchpoint](#). Perhaps we shouldn't be surprised that Paterson has [demanded massive cuts at the Environment Agency](#), including many of the staff responsible for preventing floods.

Since 2007, there has been a review, a parliamentary inquiry, two bills, [new flood management programmes](#), but next to nothing has changed. Floods, because of the way we manage our land and rivers, remain inevitable. We pay a fortune in farm subsidies and river-mangling projects to have our towns flooded and homes and lives wrecked.

Filthy water and empty aquifers

We pay again in the form of the flood defences necessitated by these crazy policies, and through the extra insurance payments (perhaps we should call them the Paterson tax) levied on homes. But we also pay through the loss of everything else that watersheds give us: beauty, tranquillity, wildlife and, oh yes, the small matter of water in the taps.

In the Compleat Angler, published in 1653, [Izaak Walton](#) wrote this: "I think the best Trout-anglers be in Derbyshire; for the waters there are clear to an extremity." No longer. Last summer I spent a weekend walking along the [River Dove](#) and its tributaries, where Walton used to fish. All along the river, including the stretch on which the fishing hut built for him by Charles Cotton still stands, the water was a murky blueish brown. The beds of clean gravel he celebrated were smothered in silt: on some bends the accretions of mud were several feet deep.

You had only to raise your eyes to see the problem: the badly ploughed hills of the mid-catchment and above them the drained and burnt moors of the [Peak District National Park](#), comprehensively trashed by grouse shooting estates. A recent [report by Animal Aid](#) found that grouse estates in England, though they serve only the super-rich, receive some £37m of public money every year in the form of subsidies. Much of this money is used to cut and burn them, [which is likely to be a](#)

[major cause of flooding](#). Though there had been plenty of rain throughout the winter and early spring, the river was already low and sluggish.



Illustration by Daniel

Pudles

A combination of disastrous forms of upland management has been helping Walton's beloved river to flood, with the result that both government and local people have had to invest heavily in the [Lower Dove flood defence scheme](#). But this wreckage has also caused it to dry up when the rain doesn't fall.

That's the flipside of a philosophy that believes land exists only to support landowners and waterways exist only "to get rid of water". Instead of a steady flow sustained around the year by trees in the hills, by sensitive farming methods, by rivers allowed to find their own course and their own level, to filter and hold back their waters through bends and braiding and obstructions, we get a cycle of flood and drought. We get filthy water and empty aquifers and huge insurance premiums and ruined carpets. And all of it at public expense. Much obliged to you guv'nor, I'm sure.

Twitter: [@georgemonbiot](#). A fully referenced version of this article can be found at [monbiot.com](#)