

# On the beaten track

Mountain biking causes some wear and tear to trails, but is it any more damaging than walking? Or horse riding? **Jon Sparks** investigates





All photos by Jon Sparks

**T**here's a little trail I love, traversing above the Hodder valley in the Forest of Bowland. It's not famous, doesn't link all that easily with other trails to create a long ride, and I've hardly ever met another mountain biker on it. But something's happened. In the last couple of years some sections have gone from mostly grassy to mostly stony. They're still rideable but, for me, a little of the charm has been lost.

The thing is, when trails become eroded, mountain bikers often get the blame. I wonder about this. Is it fair? Having ridden this trail several times myself, am I partly responsible? Well, mountain bikes certainly can cause trail erosion. But then all outdoor activities can cause erosion. Walking certainly can.

Richard Fox knows this better than most. As project officer for Fix the Fells in the Lake District, Richard oversees a long-running effort that has tackled around 160 trails so far, many of which were in a completely wrecked state. And he says that only 'half a dozen have shown significant damage from cycle use.'

This doesn't let mountain bikers off the hook. You could say that's still half a dozen too many. You could also say that there are many more boots than bikes on the Lakeland Fells. The real question is how the impact of mountain bikers compares to walkers, horse-riders, motorbikers, and 4x4 drivers? What can we do to mitigate this impact? And what are the implications for policy and the Rights of Way network?

### Riding versus striding

The volume of robust, peer-reviewed, research into mountain bike impact is still small. The International Mountain Biking Association (UK) cites several academic papers on its website, but most refer to experience in the USA, where geological and climatic conditions can be quite different. From these and other papers, the broad picture is clear: there is little evidence that mountain biking in general is more damaging than walking. For instance, a Canadian study (Thurston and Reader, 2001) »

(Above) Trail centres, such as Coed y Brenin, have fostered expertise about sustainable trails and could also be a good channel to spread information about sustainable riding

(Main) The West Highland Way: probably used by a hundred walkers for every bike. Bikes may get the blame for erosion here, but it's hard to justify

## TRAIL EROSION



There is little evidence in general that mountain biking is any more damaging than walking



» stated unequivocally: 'the physical impacts of mountain biking on vegetation and soil seem to be no worse than those of hiking.'

In fact, several studies indicate that, in certain circumstances, wheels have significantly less impact than feet. Although bike-plus-rider may weigh 20% more than a hiker, wheels roll continuously on a relatively large contact patch, whereas feet strike intermittently, often delivering their impact through a very small area at the heel. This difference in favour of bikes is seen very clearly on moderate downhill slopes. However, it only applies while wheels continue to roll. As soon as a wheel skids, the picture changes. There are clear implications for riding habits here.

On uphill gradients, boot-heels typically do much less damage, and the same is probably true of bikes, as long as wheels continue to roll (and on climbs it's usually quite hard to spin the wheels except where traction is poor). Again, skillful riding should do less harm.

In general, the research suggests that mountain bikes and walkers are broadly similar in their overall impacts on trails. Continuing the broad generalisation, motorbikes have a significantly greater impact than walkers or cyclists, but less than horses or 4x4 traffic.

### Lessons from trail centres

Mountain bike trail centres have been around for almost 20 years now, long enough for those who build and maintain the trails to establish a solid understanding of what works and what doesn't. CTC's Ian Warby established the Aston Hill Mountain Bike Area, near Aylesbury. He estimates that some of these trails 'have had over a million rider passes'. Comparable use-levels can be seen at other trail centres.

Many of these trails are graded 'red' or 'black' and are



(Above left) Heavy rain can leave trails vulnerable – unless they're 'armoured'

(Above right) Even when legitimate, motor vehicles cause more trail wear than bikes

(Above) Dedicated, waymarked trails have mushroomed in recent years, as here at Grizedale

aimed at more advanced riders. They may include steep drops, tight bends, jumps and other features that increase the loading the bike puts on the trail. The ability of well-made trails to withstand this kind of pressure is evidence that mountain bikes do not inevitably cause severe erosion.

At trail centres many routes are one-way, making it easy to disentangle the different effects seen in ascent and descent. In the

real world the picture is less clear because most slopes are used both in ascent and descent. However, mountain bikers are more picky than walkers about what makes a good descent or climb, and therefore may form a consensus about the 'right' way round particular trails or loops. A greater understanding of sustainable riding habits could become a key part of route selection.

Better information can only help, which puts an onus on those who produce route guides in magazines, in books and online. Ian Warby points to the ISW project, supported by CTC. It aims to map and grade wild trails in the Protected Landscapes of south west England.

### Managing 'natural' trails

At trail centres, it's relatively easy to incorporate current know-how into the design and management of trails. But other trails often need management too. As trail builder Russell Burton says: 'Trail centres tend to suck up any available MTB-specific funding and expertise, leaving very little for the rest of the trail network. Trail management and repair elsewhere therefore regularly fails to take account of subtle changes that would improve both rider experience and the resilience of trails to mountain bike use.'

Ian Warby gives an example: 'Sight lines are key on

wild trails, especially in the summer when sight lines are lost. This often leads to riders braking harder and accelerating harder through the trail. This degrades the trail surface, which gets washed away when it rains. Keeping the sight lines open helps keep the trail flowing.'

He also suggests that 'rolling grade dips (think of a giant spoon cut in half) built in the trail really make a difference. Many times people think they are maintaining the trail by digging a ditch out of a puddle. In reality all they are creating is a hazard. The ditch will block and the problem will become worse as the trail creeps round the water... causing even more erosion. A rolling grade dip maintains itself and just needs an annual check to ensure that there's no build-up on the outer edge stopping the water sheeting off the trail.'

This strikes a deep resonance with me after three days on the West Highland Way, where I lost count of ditches across the trail. Stone-faced, they won't erode quickly, but to any rider who hasn't completely mastered the bunny-hop they're a real obstacle. At times the temptation to swerve off the trail and ride around was *almost* too much... Of course the WHW is overwhelmingly a walkers' route: we met hundreds, yet saw barely a handful of other mountain bikers. Still, a different, and no more costly, repair technique would be fine for walkers and a real benefit to those on bikes.

## Riding smoothly and sensibly

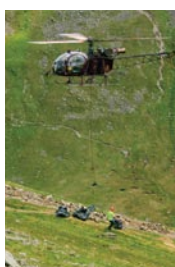
Clearly, attitude and skill levels are crucial. Clumsy braking and unnecessary skidding are particularly damaging. CTC's Dan Cook says, 'One of the key things for me is that people should learn that if they don't go straight down, but at a gentle slope, they still pick up the speed they want, but get a much longer run, and it reduces the water flow breakup.' However, the same could be said about walkers. Many of the worst cases of erosion tackled by Fix The Fells have occurred where walkers have ignored long-established zigzag paths and descended straight down the slope instead.

Another good-practice point that many experts highlight is the need to stay on the existing trail. Ian Warby refers to trail creep. 'Walkers will jump puddles or use bridges and, if worse comes to worst, walk through them or round the very edge, whereas mountain bikers try to find that elusive line around.' Sometimes we just ought to get wet...

There is a substantial and growing body of knowledge about the most sustainable trails to ride, and the most sustainable ways to ride them. However, the message has yet to reach all mountain bikers. Partly, perhaps, that's because there's no single body generally recognised as representative. CTC does excellent work, as does IMBA (UK), but most mountain bikers are members of neither.

## Open access: spreading the load

In England and Wales, bikes can legally be ridden on byways and bridleways, but footpaths are off-limits unless permission has been specifically granted. However, the definition of footpaths, bridleways and byways is still essentially that established by the National Parks and Access to the Countryside Act 1949, and much of the actual Rights of Way network is based on usage patterns that are older still.



(Above) Dropping off supplies to help repair and reinforce a trail

(Above right) 'North Shore' boardwalk sections prevent damage to boggy ground underneath

Recreational use of the countryside has changed enormously in the intervening 60-plus years. Increased leisure time and the explosion in car ownership have driven huge increases in visitor pressure on many areas. These changes, plus new forms of trail usage such as mountain bikes, motorbikes and 4x4s, make it hard to dispute that the current rights of way network is overdue for radical overhaul.

We now have evidence on the relative impacts of different activities. We also have a good understanding of what a sustainable mountain bike trail actually looks like, and it is crystal-clear that many routes have the 'wrong' designation. Many eminently suitable trails are classified as footpaths and cannot legally be ridden. Conversely, many bridleways, onto which mountain bikers are forced, are less resilient to cycle traffic. And the fewer routes there are to ride, the greater will be the density of mountain bikers riding them.

The situation is more enlightened north of the border. The Scottish Outdoor Access Code treats walkers and cyclists equally. This gives mountain bikers the opportunity and responsibility to pick trails on a rational basis, untrammelled by anomalous historic classifications. It's early days, but it doesn't seem to be leading to increases in erosion or trail-user conflict.

It is interesting to observe busy areas like the Pentland Hills, on the edge of Edinburgh. The Ranger Service asks bikers to stay off certain paths on the higher ridges, and to avoid some areas when wet and muddy. As there's a clear rationale, most bikers respect these requests.

Ian Warby dreams of a similar open access situation in England and Wales: 'The rights of access in Scotland make sense. We need the powers that be to get their heads around the benefits rather than the hang-ups. Spreading access has to be essential when looking at long term trail management.'

Removing the distinction between footpaths and bridleways would be a simple solution, but then what would we do about horses? There's abundant evidence that they can cause far more erosion than walkers or cyclists.

Richard Fox of Fix the Fells, who spends his working life dealing with trail erosion, sums up: 'Mountain bikers do not cause exceptional levels of erosion compared with people on foot, as long as they demonstrate some care and common sense.'

Care and common sense, then. Over to you.