



## Erosion on public rights of way and on public open space within Dartmoor National Park

Dartmoor National Park Authority has the duty to conserve and enhance the quality of the landscape of the National Park as well as to promote the enjoyment and understanding of its special qualities. However, visitors can contribute to erosion, which can spoil the beauty of the area.

The countryside of Dartmoor, as elsewhere, is continually changing as the human and natural influences upon it change. The recreational use leaves its marks just as the activities of prehistoric farmers and the medieval tanners did. The National Park Authority has a duty to try to minimise these more recent effects, especially when they threaten Dartmoor's beauty, its wildlife and/or its historical remains.

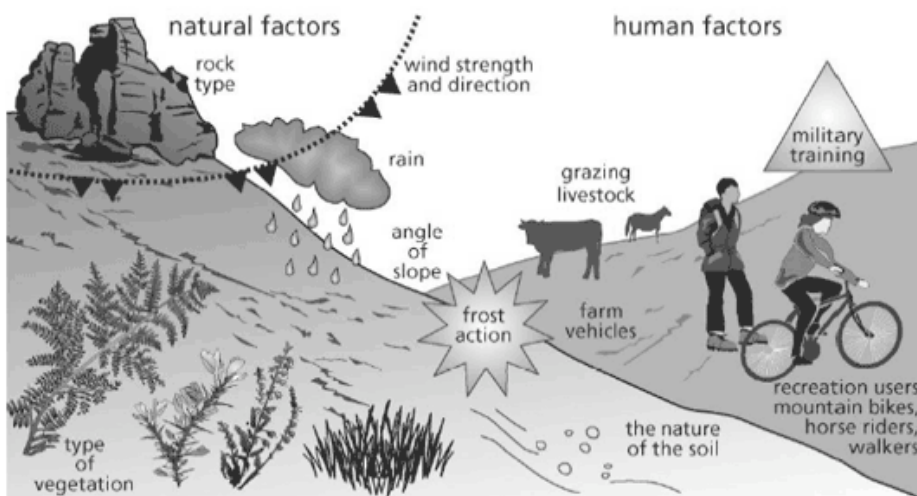
### Why Does Erosion Occur?

Most types of vegetation can withstand some disturbance and will recover naturally in time. The level of recreational disturbance which an area can tolerate without damage is described as its recreational carrying capacity.

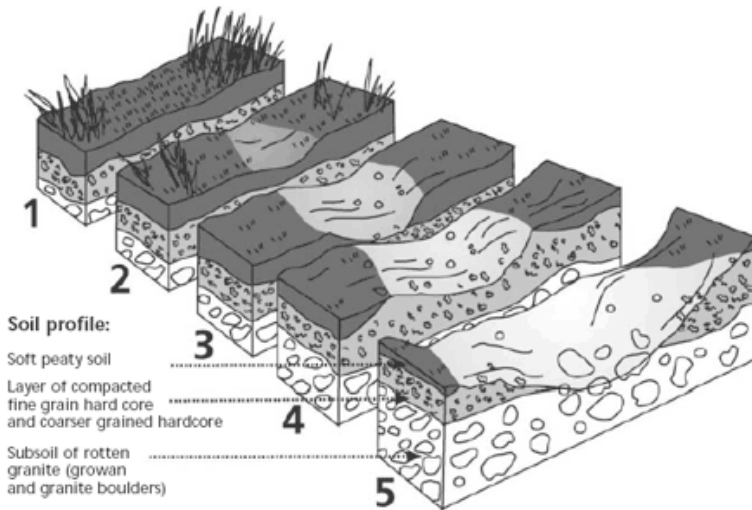
The effects of recreation are not evenly spread. They are mainly found around places such as car parks, pony trekking routes, river crossing points, riverside picnic sites and on popular walking routes such as from a car park to a tor.

Erosion is often caused by a combination of factors. Livestock grazing, farmers' vehicles, hikers' boots, horseriding and mountain bikes can all play a part in damaging the vegetation. These factors, combined with natural forces, determine the extent of erosion and the speed at which it occurs.

### Factors affecting erosion



### Stages of Erosion



1 Trampling, by a variety of agents, at first causes a change in vegetation from taller plants e.g. gorse, heather and bracken, to shorter grasses.

2 Trampling, especially in extreme conditions, causes the mat of vegetation and roots to break up and expose the soil.

3 If the vegetation is not able to recover, then water run-off, combined with wind and frost begins to create gullies.

4 Further trampling combined with water, wind and frost action soon enlarges the gully and exposes the rocks beneath the soil

5 As the path becomes muddy and difficult to follow, people avoid the gully and the trampled area widens.

## Why Control Erosion?

- it looks unsightly
- it can reduce the grazing value of the land
- it can permanently destroy habitats
- public rights of way and other routes can become impassable.

It is advantageous to restore erosion at an early stage as this prevents more serious, large-scale damage later. It is also less expensive to carry out restoration work early on in the erosion process.

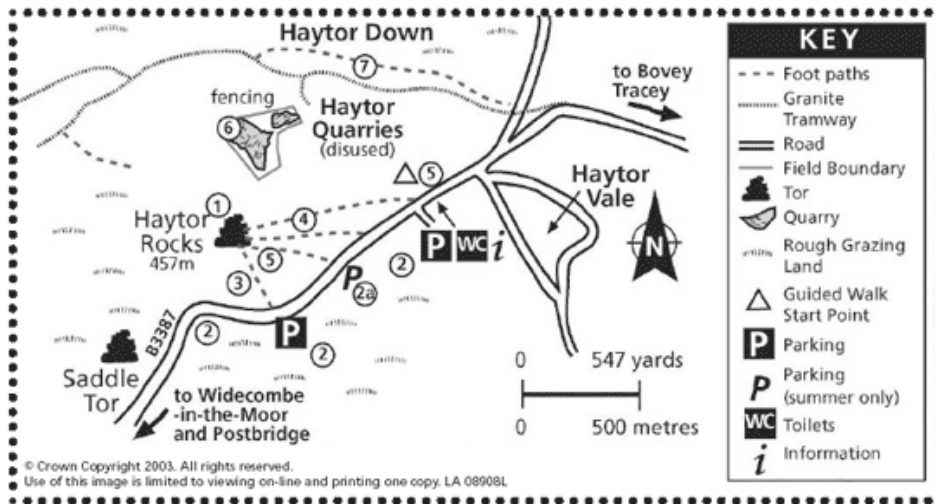
## How is erosion monitored?

The severity of erosion and the rate at which it occurs depend partly on the vegetation. Dartmoor National Park Authority carries out vegetation survey work and monitors erosion.

The methods used are:

- each Ranger observes their sector and reports any erosion problems;
- photographic records are kept of sensitive sites to monitor the rate at which erosion occurs;
- Dartmoor National Park Authority has a system for monitoring organised events;
- there has been some use of aerial photography, although this is expensive;
- National Park staff liaise with landowners and other users to try to overcome the problems of erosion.

With enough resources the recreational carrying capacity of an area can be sustained and improved.



## Haytor Down: a Case Study

There has to be a careful balance to try to meet the National Park's first purpose of conservation, while stabilising and designing the site so as to increase the sites recreational carrying capacity, and also meet the National Park's second purpose of promoting enjoyment and understanding.

If the general public does not notice the erosion repair and site management work the Authority will have succeeded in its purposes.

## Erosion Problems

1. Trampling by walkers, climbers and livestock has exposed the soil around the base of the rocks.
2. People have driven vehicles onto the open land causing damage around the car park and roadsides.
3. The route from the upper car park to the Rocks is used by thousands of visitors which created erosion gullies.
4. Paths running from the Lower Haytor car park to the Rocks suffered from both narrowing by gorse encroachment and increased erosion from water runoff.
5. The popularity of the path from Lower Haytor car park to Haytor granite quarry led to muddy impassable ground.
6. The fence around the quarry attracts people and livestock causing changes to the surrounding vegetation and soil.
7. In the early 1990s erosion caused by horse riding was a serious problem on parts of Haytor Down.

## Techniques Used

- 1 The exposed area soil appears to be fairly stable so it is not currently being managed but it is regularly monitored for change.
  - 2 Low grassed banks have been created beside the roads and in car parks
  - 2a Large granite boulders are used to block off grass parking areas in the winter when the ground is soft and more vulnerable to damage from tyres. This both protects the grass and reduces the number of people using the area.
  - 3 These gullies have been filled in and the turf restored on the steeper parts of the path.
  - 4 Gorse clearance (burning and mowing) has been undertaken so as to widen or increase the number of paths and so spread the load of walkers walking between the two points. Some works have involved temporary diversions to allow vegetation to recover – accompanied by discreet signs explaining the reasons for the work and asking for people's co-operation. Grassed over, open drainage gullies have been created to divert rainwater away from the well used paths and reduce the possible gully erosion.
  - 5 Granite paving slabs and rocks have been used to create a 'gateway' through the roadside banks and a solid base on a wet, boggy part of the path
- Patches of bare earth have been restored with turf as well as reseeded with the Authority's moorland grass seed mix. Underground springs at some points continue to make this area vulnerable to damage.

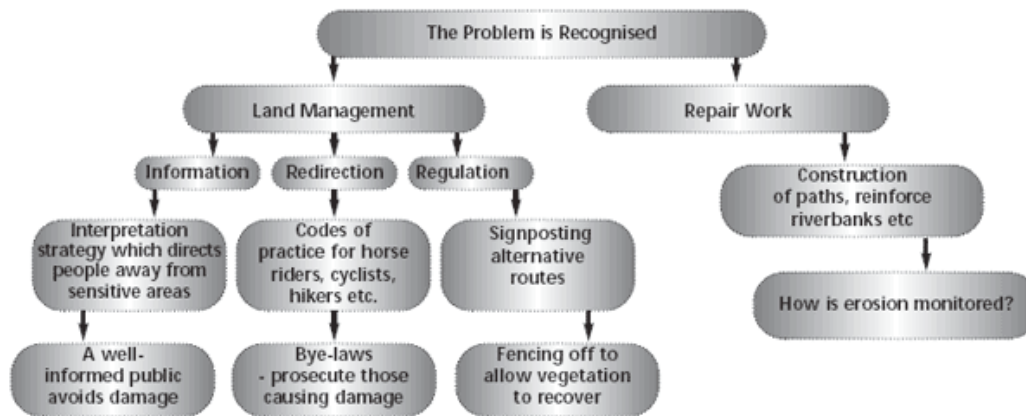
6 Currently the situation is being actively monitored and possible future works include placing of boulders, resurfacing and turf restoration.

7 These problems were successfully solved through negotiation with local horse riders, stable owners and the provision of an alternative route.

In addition visitor pressure is reduced throughout the National Park in the following ways:

- The information centre at Lower Haytor car park helps inform the general public. Well informed visitors are less likely to have a damaging impact on the moor.
- The Ranger Service have the duty to maintain the Dartmoor Commons Byelaw (3) that restricts the use of motor vehicles and mountain bikes, both of which can cause damage leading to erosion.
- There are also guidelines and codes of conduct governing the organisation of mass events aimed at reducing people's impact on the vegetation.
- A redesigned walks leaflet for the Haytor area now avoids the sensitive areas.

## Restoration of Erosion - what the National Park can do



## Tread lightly on Dartmoor: Moor Care

Dartmoor has National Park status to ensure that the special qualities that we all enjoy are protected for this and future generations.

The dilemma is that the concentration of people and activity on Dartmoor can cause erosion damage – muddy paths, crumbling riverbanks, rutted tracks and tumbling walls.

In 1996 the DNPA set up its Moor Care Programme, utilising part funding from the European Union, to combat recreational erosion on Dartmoor, operating alongside existing work to lessen the impact of other activities such as farming and military training. The Programme's total £500,000 funding was used mainly in two strategies:

- to repair and restore existing erosion damage
- to raise awareness about erosion and other issues amongst users of Dartmoor, and help to prevent future damage.

A series of guidelines were prepared which give advice on how everyone can help to make a difference. Working together we can help to limit future damage and preserve the beautiful landscape we love so much.

### The Moor Care guidelines include:

Follow the set of guidelines established for your recreational activity.

Plan your route carefully, particularly in wet weather. Hard tracks can sustain more use, and sheltered valleys and woodlands give more protection in bad weather.



Be careful with cigarettes, matches and other flammable objects. Keep portable barbecues off the ground, on a flat boulder or stone, to avoid burning the vegetation and creating an eroded pit.



Think about how you travel e.g. consider using public transport or car sharing.



From time to time, special At Risk Zones may be designated, being areas of substantial erosion where there is a danger of further severe damage unless remedial or preventative action is taken. Please avoid using these areas when they are identified, and co-operate with any special guidelines that may be published.



In wet weather, please avoid parking on grass verges or fragile moorland where damage may easily occur - use hard-surfaced car parks to park without damage.



If you are on an eroded path, avoid widening it. Walk in single file if necessary, to prevent the creation of wide or multiple parallel paths. Together we can make a difference!

**Useful web links for further information:**

**Other related factsheets:** [Dartmoor Commons](#)

**Other information:** [Taking Moor Care](#) pages

**Other publications:** Dartmoor Pocket Guides: Natural History set available to purchase at DNPA Information Centres and through our on-line shop.

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