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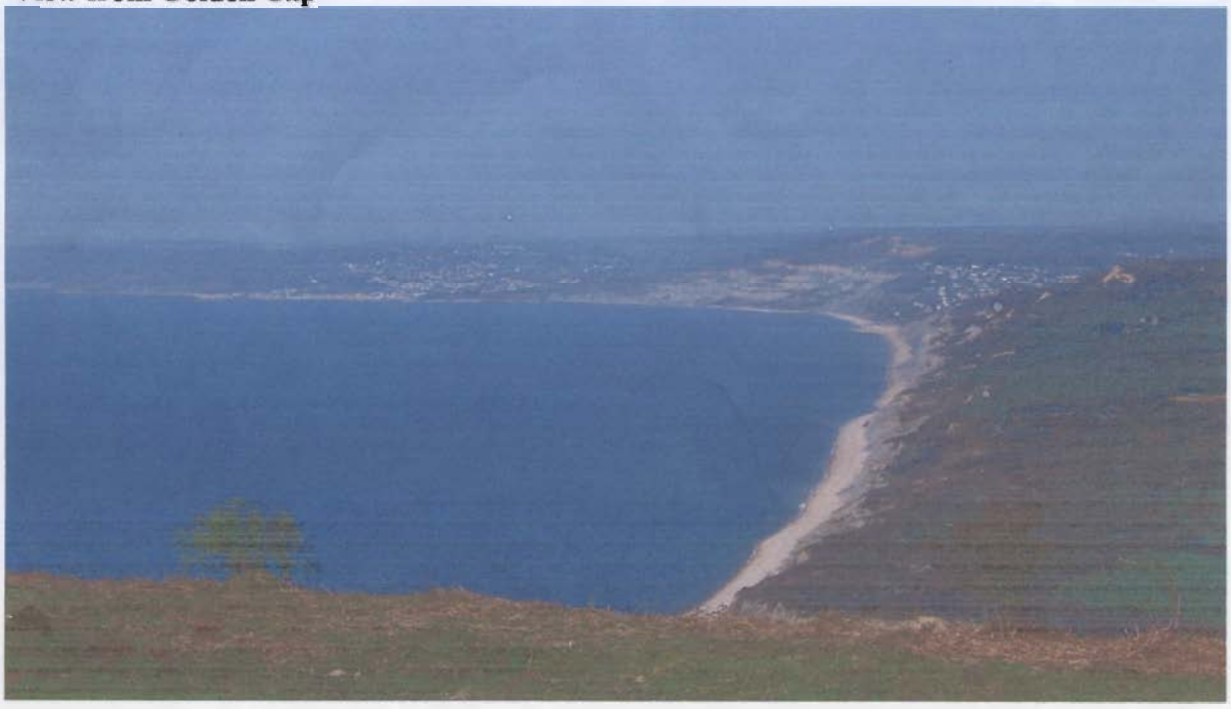
Expedition in Brief

The expedition we planned and carried out was a three day, two night venture on foot which took place between the 11th and 13th of April. The route began at Musbury, a small village in East Devon, on the Wednesday whilst it would finish in a Hamlet called Shrove Cross on the Friday. The walk encompassed various terrains such as fields, footpaths, coasts and forests, all in different states of use due to their popularity, the costal paths were particularly challenging because of the range and gradient of height on the routes. There were six members in the team I was in; though there were other groups on a similar route we rarely met them until the campsite in the evening. It was fortunate that everybody in the group got along well from the beginning of the expedition and enjoyed each others company because it helped make the walking seem easier. Golden cap, the largest landform on the South Coast was one of the highlights of my journey, this is mainly because I've never walked up it before, I made it first to the top with my rucksack on and the view was great because it stretched far miles all around, it would have gone further if it wasn't for the haze. This is also the longest expedition I have ever been on so that itself is an achievement and for me and makes the walk more enjoyable on completion.

View from Golden Cap



Day 1
Start: Musbury
Via: Uplyme
Finish: Charmouth

Dominant Terrain & Landforms.
Fields, footpaths, forest and fords

Day 2
Start: Charmouth
Via: West Bay
Finish: Burton Bradstock

Dominant Terrain & Landforms.

Coastal Paths, Cliffs, Fields, Beach

Day 3
Start: Burton Bradstock
Via: Bothenhampton
Finish: Shrove Cross

Dominant Terrain & Landforms.
Fields, Road, Footpaths, Hills

Food on the Go

Obviously people need to eat food so they can break it down into sugars, which can be burnt for energy to use to power our bodies, so on a normal day with normal activities less energy is required and less food needed. However on an expedition, a greater amount of energy is required, especially when you are carrying all of your equipment and supplies on you back, your body has to work harder over longer periods of time. But the more equipment and food you carry the more food you're going to need. Taking a balanced healthy diet with high energy content is difficult to do. This is mostly because healthy food (Fruit, yogurt and bread) takes up more room in the rucksack and gets damaged easily; also, that extra space could be used for essential equipment such as a first aid kit and waterproofs.

There are five main food groups each of which I have tried to accommodate in each of the three days. (These do not include water and Fibre also good for you)

Fat.
Contains lots of energy but in a complex state so the body can store this as insulation until times where other energy reserves are low or burn it off slowly during light exercise such as walking or to maintain core body temperature (37.5°C). Fat is usually associated with being unhealthy, but unfairly as it is an essential part of a diet, especially in cold environments. Meat, butter, milk and oils contain fat.

Carbohydrates.
Any athlete could tell you that before an event they have pasta for breakfast, rice for lunch and potato for dinner, this is called carbohydrate loading and is essential for achieving top results in high energy or long distance competitions such as rowing, cycling, skiing and middle/long distance running. Carbohydrates should make up the majority of the four groups in a healthy diet, it breaks down quickly into sugars when needed compared to fat, making it easy to be manipulated by the pancreas to either be stored similarly to fat, or sent around the body to be used to produce energy. Bread, rice, pasta and potato contain both simple and complex carbohydrates. To prepare for my expedition I ate plenty of pasta the night before the walk.

Sugar.
For sports requiring explosive muscle use, such as sprinting and gymnastics but it can also be used to boost the base blood sugar levels in other sports as well. Usually a boost in sugar makes you feel better during and after exercise, however, loading sugar is not recommended as the body cannot process it quickly enough right before high intensity cardio vascular activities and seeks to expel it from the stomach as soon as it can. It usually comes in tasty forms such as chocolate bars or liquids such as Lucozade, these are quite useful as they are extremely simple carbohydrates that can go almost straight into the blood, Lucozade is more likely to be expelled from the body for this reason but has the added bonus of hydrating the body and replacing lots salt from sweating. Used little and often sugars are most effective.

Protein.
As an energy source this is a poor substance and is only ever used by the body after all other reserves, including fat are depleted. Protein though, is essential in the upkeep and repair creation of the body's cells, which means that any wear and tear sustained to the body on a walk, can be seen to quickly. Usually in diets that lack protein, cellular repair is slow and it may take a while for wounds to heal. Meat, fish and yogurts contain protein.

Vitamins & minerals.
Minerals and vitamins such as calcium, zinc and magnesium; are only required in very small amounts. Minerals are usually found in the water (and milk) we drink each day, (too much can be poisonous) whilst vitamins are found in food, usually fruit and vegetables. They are essential to the upkeep of bone and cellular material in the body and assist chemical reactions.

Key
C=Carbohydrates
S=Sugar
F=Fat
P=Protein
V= Vitamins & Minerals
(f)=Fibre

Meal Plan

My plan basically took into account that I had enough food and at least one item from each food group a day and at least 2 carbohydrates (main meals)
Day 1

Meal	Food	Food Groups
Breakfast	Wheatabix x3 with sugar, crumpets and butter, apple juice, milk	C, S, F, (f), V
Lunch	Corn beef Sandwiches, chocolate bar	C, S, F, (f), P
Dinner	8x pork Sausages, Smash potato, cup-a-soup	C, F, V
Snacks	Water, Toffees, white chocolate	S, F,V

Day 2

Meal	Food	Food Groups
Breakfast	Rice, cup-a-soup, orange juice breakfast bar x1 white chocolate,	C, S, (f), V, P
Lunch	Cheese Sandwiches, pasta, chocolate bar	C, S, F, (f), P
Dinner	Smash potato, pasta, cup-a-soup	C, F, V
Snacks	Water (with orange powder), Toffees éclairs, milk chocolate.	S, F, V

Meal	Food	Food Groups
Breakfast	Pasta, Hot chocolate, orange juice, breakfast bar x2	C, S, (f) V, P
Lunch	Soup chocolate bar, pasta breakfast bar	C, S, F, (f), P
Dinner		
Snacks	Water (with orange powder), Toffees, milk chocolate	S, F,V

Overall I found I had a reasonable amount of food because I did not have to eat all of it, and I was never hungry throughout the journey whilst I also felt I had enough energy.

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Footpath Erosion

The use of the countryside around the United Kingdom is a privilege to the public; their constant use of the paths compacts the ground and can leave it free to be eroded by the weather. This can lead to the destruction of the route, the major footpath erosion occurs on the coasts where there are many tourists taking walks in the summer and in national parks such as Dartmoor or the Lake district, because of the numbers of Hikers all paths have to be maintained in some way, either to keep them from being reclaimed by nature or prevent them from growing into muddy puddle. It is rare that a path can maintain itself as numbers of visitors can be unpredictable. In my project I am going to give examples of various footpaths on the route we took and describe their various stages of erosion I will also give reasons and explain why they are in the state they are, as a number of factors affect them.

Factors Affecting Footpath Erosion

A number of different factors are involved in the susceptibility of a footpath to erosion. These can be split into two main types, physical and human, but they are always antagonistic.

Physical Factors

1. Angle of slope
2. Soil Depth
3. Soil Type
4. Drainage
5. Compaction
6. Climate
7. Vegetation Type
8. Length of Growing Season
9. Altitude and Aspect of Slope

Human Factors

1. Visitor pressure
2. Type of activity being carried out
3. Proximity to car parking and other facilities
4. Popularity of Route/Walk
5. Winter use

Basic footpath erosion causes

Low Level Use	**Vegetation Change** Taller plants trampled down allowing more light to penetrate. An increase in other species follows.	**Soil Change** Soil structure starts to deteriorate.	**Path Surface Change** Narrow, covered with a variety of plants and grasses.
Moderate Use	Trample resistant species increase, others decrease. Heather is more susceptible to trampling than grasses, so soon dies out. An overall reduction in height and amount of vegetation (biomass) occurs.	Soil becomes compacted so depth decreases. Water cannot infiltrate the firm surface as well so moisture content decreases. Soil less good for plant growth.	Bare patches appear. The impact of heavy raindrops (rain splash) starts to wash out the soil. Puddles form as soil now less porous. Path widens as walkers avoid puddles and trample new areas. In winter frost heave may help break up the surface
High Level Use	All but the most trample resistant species die out. Poor soil structure, upland climate and continual trampling prevent re-growth.	Soil structure breaks down as organism content is reduced. Few roots left to bind the soil. Soil becomes sandier and is easily washed away.	Heavy rain is channelled into hollows and washes out sand eventually producing deep gullies. The gullies channel subsequent rainwater and are further eroded and increase in size. Worst areas are avoided by walkers so new areas are trampled. Path becomes [1]

The first picture (Top Right) shows a field with a footpath going through; it's difficult to tell the path just by looking at the field as it is relatively unused apart from the cow hoof prints. This is in the first stage of degradation as there is little visible impact by humans however further up the field at the stile, the impact of animals on the ground is clear. The gate attached to the path is obviously regularly opened to allow the passage of cattle, you can see on the ground up hardened mud where cattle have massed to go through the gate. Erosion like this is made worse when it is on a hill because of the added effect of gravity. The various holes and troughs in the ground going up hill made this section difficult to walk over, helping to class this as a poorly maintained footpath. The shade of the trees obviously slows the growth of any vegetation back onto the path especially in the summer.

This was one of the worst eroded places on the whole journey, right next to one of the places where there was hardly any footpath erosion whatsoever, this also proves that farmers can be responsible for a lot of erosion.

[1] http://www.lake-district.gov.uk/lake_district_docs95/factsheets_erosion.pdf

The next two pictures show separate footpaths, both similarly eroded and both in fields, with a concentrated single compression line, however one is far from any urbanised area (left), the other 1km from a town (right).

You can see how that a singular track has been formed over the grass in each field; this is usually a result of walkers who walk either side to save their feet or because they wish the grass to re-grow. This initial phase shows the widening of a track and the compression of the soil which makes it harder for vegetation to survive. The soil is also held in place by this layer of vegetation because plant roots bind it together and protect it from the rain. With full exposure to the weather the soil can blow away, wash down hill and stones can be exposed making it even less welcoming to walk on therefore enhancing the rate of footpath erosion. Paths which are not used regularly can get to this state quite easily but only because the vegetation is hardy enough to hold the soil together does the path not erode further.

The two pictures below show a later stage where the ground has been compacted beyond the point of

which grass can grow in. Even the two team members can prove that walkers prefer not to walk on the compacted earth you can also see the lush grass growth either side of the path which represents what the compacted area should look like instead of the bare dirt. It is quite amazing how a larger number of walkers can mean the difference between this and the last stage in erosion.

These two pictures show a popular trail where some footpath management has been implemented at the later stage of erosion. As you can see the vegetation had been completely destroyed in the right hand picture and the small stones have become exposed in the dirt. This compacted soil is harder to walk on but the alternative path has been fenced off. The surroundings will erode no further but future footpath nourishment may be an option for maintaining the current footpath, however without maintenance the soil will wash and blow away, however this area seemed quite sheltered from wind and rain from the trees, whilst the left picture consists of flat land which would help prevent surface run off. This area was also close to several other footpaths which may be a factor affecting this route because it links to others, making it more popular. Areas with different gradients may be affected worse because of the way in which water can wash away the soil.

The image below and left was taken in a wooded area which had a popular path going through it and was based on the side of a hill with some steep gradients of relief. Rain obviously ran through gullies in the area but the worn footpath showed where rainfall had rapidly eroded the soil by washing it down stream to where it slowed down and deposited its load. Because of the extra leaf litter that falls in the winter the soil is nourished by new decay, however new the rich soil washes away easily making the problem worse; especially when the forest floor isn't protected by the canopy of leaves, rain just washes the soil away. The result was a difficult stony path which was slippery, muddy and hard work to walk up. It seemed out of place in the picturesque forest, as did the marshy areas at the base of the footpaths (below left). These areas were full of clay sediment and saturated with water which meant it extremely difficult to walk thought and provided a place for mash reed plants to grow. Walkers had decided not to go through the area and instead had made another path around the boggy ground eroding further the area, though this will stop their feet getting muddy they are most likely just eroding another path for rainwater to erode away further.

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The coastal regions in the United Kingdom are heavily used by hikers and tourists alike mainly because of the traditional seaside holidays, but also because they have spectacular views of the landscape and the tourism industry around the coast is well developed for looking after visitors. The regions coastal path that stretches all around the U.K. is under constant attack from millions of tourists each year and the landscape shows this. Scarring of the ground on the chalk cliffs is a prominent thing that can be seen for miles and it ruins the landscape for other visitors as well.

Even before we started our walk along the coast on the second day we noticed the prominent scarring of the cliff at Charmouth which led to Golden Cap, even the picnic area below it seemed to be suffering the effects of hundreds of ground compressing feet as in places the ground was already bare. The erosion of footpaths on the coasts isn't helped with the high altitude winds which blow from sea to land taking with it the exposed top soil, also the gradient helps channel the water down hill to take with is the soils and smaller stones from the path. The erosion isn't helped where people walk up the pat and force themselves up on the worn out path by using the existing groves on the ground this merely amplifies the amount of erosion that is taking place and makes the path more unsuitable for walking up, again more people walk to the sides and again the path widens and a gully forms where water can readily wash soils away.

The picture below show a path that has been turned into a stream because it has been poorly maintained and left to erode, this was not a flash flood either because it had not rained for at least a week this was the general picture of the whole path which dipped up and down into a stream, which was quite deep in places. You can see in the picture the large stones that have been exposed by the river, however there were other areas that had been exposed further by the water and large dips and hols had been filled in artificially with rubble and bricks, which were neither very attractive nor safe to walk on however they did appear to have stopped the erosion of the path, however when paths get into a state such as this they become undesirable to walk on because they seem dangerous or unpredictable, though fun to walk on this path, it is a shame it has gotten in this state because it shows lack of management and respect for the countryside.

The magnitude of footpath erosion there was on our walk surprised me, mainly because I've never stopped to notice it before, but after researching the forms and processes before my expedition I have come to appreciate the number of people who actually use the footpaths, even from my previous expedition I didn't realise what an impact it had on its surroundings even the way it can affect the landscape. Like here for example, an artificially trampled stream, possibly redirected from the surroundings but now it has all but to cut the path off before maps need to be changed the above shows one of many kinds of footpath erosion in the later stages of degradation however this wasn't coastal path. The coastal areas have money put into them by local councils because they are an important source of income to the area to help the economy. Without proper maintenance people would be put off walking and the paths would be in disrepair, there is no way of sustaining the grass in pristine condition without blocking off the tourists so a balance needs to be found between nature, economy and tourism to be successful

The worst kind of erosion on flat areas, (above right) this shows clearly footprints and cycle tracks all the way across. The picture shows a very wide path were when it is wet, becomes saturated, the earth becomes liquid with a solid layer beneath, the only way to fix this would be to dig it up to allow decent drainage to the area and restrict access to the area.

Above left you can see the flat areas of ground that represent hundreds of people's foot prints up a single hill, (bottom left) you can see the scars visible in the landscape for miles from well used paths