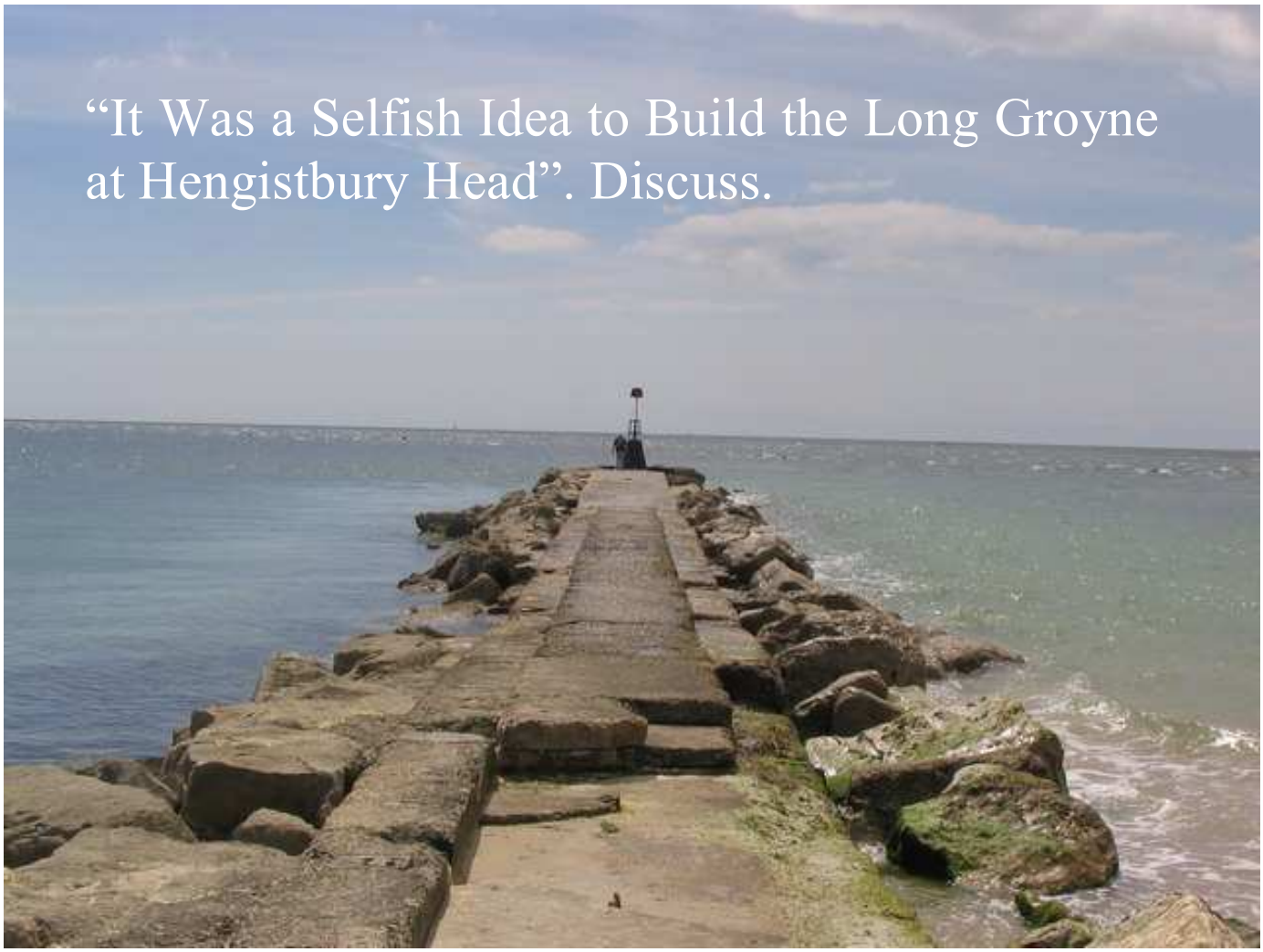


“It Was a Selfish Idea to Build the Long Groyne at Hengistbury Head”. Discuss.

By Ellen McGachy. 10 EC.

One: Introduction

For this piece of coursework, I have been asked to investigate if weather or not the building of the long groyne at Hengistbury Head was a selfish idea. This is an issue

worth discussing because Hengistbury Head (HH) is a popular area, with many local residents and a lot of visiting tourists who come for the beach activities and services etc. HH is on the South coast of the UK, the most attacked coastline in the world, which is what causes the controversy, why protect one part of this coast, when all of it needs protecting? To help me in this investigation, I will answer some key questions: 'Where are HH and Highcliffe (HC) located?' 'How has the shape of the coastline changed over time? (Before and after the groyne)' 'what is HH and how was it formed?' 'Why is it popular amongst tourists? What is there to do and see?' 'What is an SSSI?' 'What are the problems at HH regarding coastal erosion?' 'What coastal protection methods are already in place?' 'What evidence is there of coastal erosion at HC?' 'Is there any coastal protection already at HC, if so, what?' 'What do residents of HH and HC think about the erosion taking place along their coastline?' I will also compare and contrast what is going on at HH and HC with case studies from across Britain. I will be using primary information; information that I myself has gathered, e.g. my booklet from the field trip, and secondary information, e.g. information from internet sites. I will draw this coursework to a close by giving my own opinion, using the information gathered from various sources as evidence to answer the key questions, and using them to back up what I think.

Two: Prediction

"Building the groyne at Hengistbury Head a selfish idea."

In agreement with this statement, there are many things that could make the building of the groyne seem like a selfish idea. For example, the south coast of England is *the* most attacked coastline in the **world**, why should only one part be protected? What about the rest? Furthermore, Hengistbury Head is not only a friendly, bustling residential area, but also a popular tourist attraction, over 1,000,000 people visit HH every year, the groyne was very expensive, and needs maintaining, the money could have been spent on other things in the area to make it better for the those who live there and to make it better for, and attract more tourists.

On the other hand however, it could be seen as unselfish, as there are almost always two sides to a story. As stated before, HH is a busy residential area, and very popular among tourists, the groyne is stopping the beaches from moving further and further along the coast, and protecting the land. Without it, the head would be at increasing risk of eroding further and further back, losing more and more land. This would be very unsuitable, due to the vast amount of people that live around/visit the head, homes and attractions would be destroyed, as well as memories.

These are only 4 points arguing weather or not the groyne was selfish or not, by the end of this piece of work I hope to have many more, creating a stronger argument on this statement.

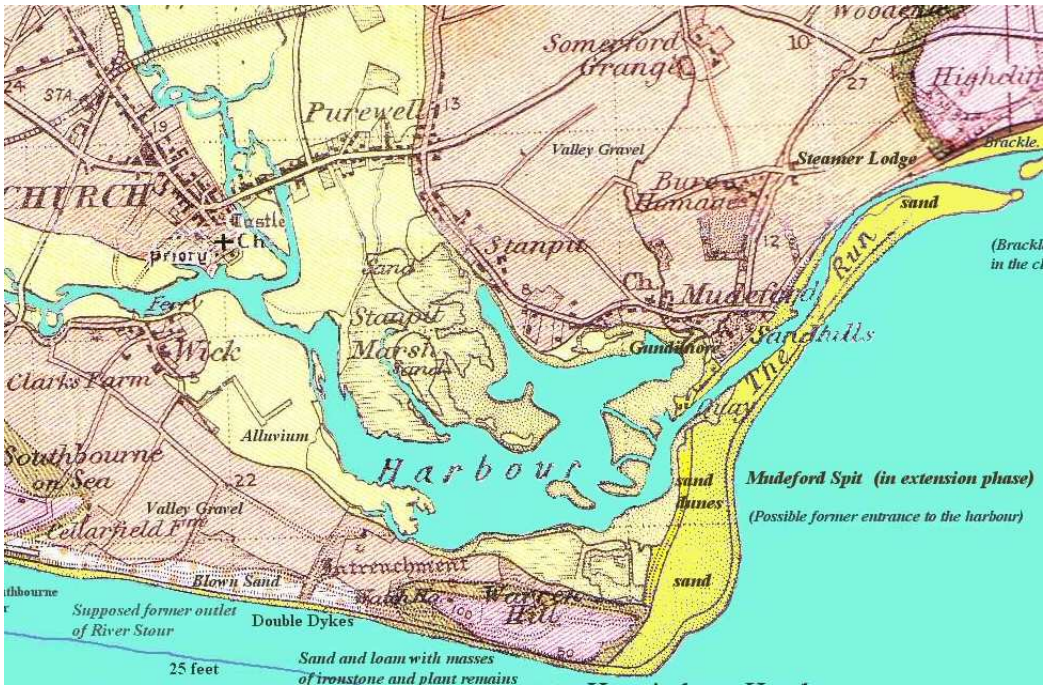
Three: Key Questions

One: Where are Hengistbury Head and Highcliffe located?

Hengistbury Head.

Hengistbury Head and Highcliffe are both located in the South East of England, in the UK. Hengistbury Head is in Bournemouth, Dorset and South of Southampton, West of Portsmouth, East of Exeter and is on the edge of the Atlantic Ocean. Highcliffe is in Christchurch Dorset, located South of Hinton, west of Barton-on-Sea and East of Southbourne.

Two: How Has the Shape of This Stretch of Coastline Changed Over Time?



This is Hengistbury Head published in 1895, long before coastal erosion was understood or a worry. We can see here that the spit is much longer than it is in the most recent image, this is because they long groyne has not been built, so the area to the east of the spit is not deprived of beach material. It also shows that the small islands the Beerpan Rocks) are disappearing

This is a more recent image of Hengistbury head, after the long groyne was built. We can see that the slat marsh has become larger since then; the groyne has also helped to trap beach sediment to the west of the headland. The spit is shorter, but the headland is wider and we notice that the Beerpan Rocks have completely disappeared.

Three: What Is H.H & How Was It Formed?

Hengistbury Head is a headland; the definition of a head land is an area of land that is adjacent to water on 3 sides. It was formed by a number of natural processes, including erosion, long shore drift (where the sand and shingle are moved along the coast by the sea) and weathering where the elements erode the land causing it to change shape.
What do Residents of H.H & H.C think about the erosion taking place along their coastline?

Four: Why is HH a popular tourist destination?

Hengistbury head gets over 1,000,000 visitors a year, for a variety of reasons. The picturesque British coast provides a hot spot for families, and anyone who enjoys the beaches and coastline. HH also offers a lot of facilities for visitors; it has a nature reserve, and is a site of both scientific & archaeological importance. The area surrounding HH makes perfect conditions for hikers and ramblers and the lowlands in the area to the west of the head are used a lot for kite flying and it is also a general picnic area.
Another popular destination around HH is at its peak, named warren hill, where it is grassy and a pleasant place for families and couples. The surrounding towns such as Christchurch also have their own things to offer, the world famous Stone Henge is also only 30 miles away, which is always worth a stop.

Five: What is an SSI? And why is HH one?

The Wikipedia definition of an SSSI is:

A **Site of Special Scientific Interest** or **SSSI** is a conservation designation denoting a protected area in the United Kingdom. S.S.S.I's are the basic building block of site-based nature conservation legislation and most other legal nature/geological conservation designations in Great Britain are based upon them, including National Nature Reserves, Ramsar Sites, Special Protection Areas, and Special Areas of Conservation.

Hengistbury Head is an SSSI because it is home to many rare plants and animals. It is home to over 500 species of plant to date, including sea knotgrass (a nationally rare species) 14 types of Birds-Foot Trefoil (they are scarce) and 39 locally rare plants.

There are also 300 types of bird have been recorded there, as well as large numbers of insects.

Six: What are the problems at HH regarding coastal erosion?

Erosion has been a huge problem for a number of years at HH, especially as the sea has now reached its base, where the can reach it with ease. The head was provided with some natural protection in the form of 'Ironstone Doggers' that fell from the cliffs above onto the beach below, building natural barriers both on the beach, and out to sea.. Because of these, erosion was an extremely slow or possibly even stationary process, and HH remained stable for about 2000 years. But the ironstone doggers got their name from the fact they could provide excellent quality iron ore, some were even found to contain 30%by weight iron ore. Their use dates back top prehistoric times, but their exploitation since the Iron Age had left them rusty in colour and less useful.

Another major problem that HH is faced with is long shore drift, a phrase that has come up a lot in this work so far. Before the groyne, the sand and shingle from the beach was being washed further and further up the coast by the sea, as there was nothing to stop it meaning that the beach was moving away.

Seven: What coastal protection methods are already in place at HH?

As we already know, there are groynes at HH, as this is the main subject of this investigation, but there are also other things in place.

A 'Gabion Revetment' has been built at HH as well as the groynes at HH in order to protect its weakest point on its eastern end. Even though it is not too attractive, it is effective in that it protects HH from becoming an island! But, it does have a downside; its lifespan is limited as it is in a very harsh environment, enduring all the things that we are trying to protect HH against.

Another technique used at HH is beach replenishment, where the sand that has been washed away by the sea is replaced with shingle, that is less prone to be moved my the water, however it is not a permanent solution and had to be repeated every 10 years or so, also, it does not bode well with beach lovers as the stony shingle does not give the same experience as a sandy beach.

There is also currently a debate going on, to decide weather or not to build and artificial reef at HH. While the main drive for this is to attract wildlife, surfers and divers etc, it would also partially replenish the original marine/iron ore reef that was removed by mining in the 1850's.

Eight: What evidence is there of coastal erosion at HC?

At Highcliffe, there is a lot of evidence to show that there *is* coastal erosion taking place

There is 'slumping' taking place, meaning that the cliff is collapsing into itself. This is happening for a number or reasons. Firstly, the rock is made of clay, an extremely soft rock, which absorbs a lot of water, making it even softer and prone to collapsing. It is not protected whatsoever; it is open to elements, also attacking the soft rock. Furthermore, coastal protections elsewhere (e.g. the groyne at HH) have an effect of this area. There is also growing human development taking place onto of the cliff, weakening it.

Nine: Is there any coastal protection at HC? If so, what?

There are quite a few different methods of coastal protection being used to protect Highcliffe at the moment, all of different costs, effectiveness, appearance, scale and use.

‘Rock Armour’ or ‘Rip-Rap’ is used at Highcliffe; it consists of large boulders, commonly granite, placed along the coastline to protect it from erosion and other processes caused by the sea. It has both good and bad qualities, it looks natural, as it is rock, it is a long term solution and will last, it is also very effective. But, it is very expensive, because the rock has to be bought or extracted and then transported to the coast and set up, it then has to be maintained, it is could also be dangerous, as people, especially children climb on it etc.

There are also Groynes at Highcliffe, just like the one at Hengistbury Head; they are also effective in that they stop sand and shingle from moving down the coast in ‘long shore drift’. But, it also has a downside, they are not very attractive, they are very expensive and require a lot of maintenance, without which they become less effective.

There are ‘Drainage Gullies’ these help to drain the excess water from the cliffs, to prevent saturation, and direct it back to the sea. They are nearly unnoticeable as they are inside the cliff. But, they are also very expensive, and the cliff is weakened slightly when they are inputted into the cliffs.

Vegetation is plated on the cliffs, it is cheap, it also absorbs excess water to prevent saturation, it looks natural and is attractive. But, it has no where near the same effect as other methods of protection.

There are rocks and boulders placed on the coast as part of Rock Armour/Rip Rap, but standing alone or in small groups and they have the same effect.

Beach replenishment is used at HC as well as at HH, where the sand that has been moved is replaced with shingle, again it is cheap, but it is not the same as having a sandy beach, and needs replacing every 10 years or so.

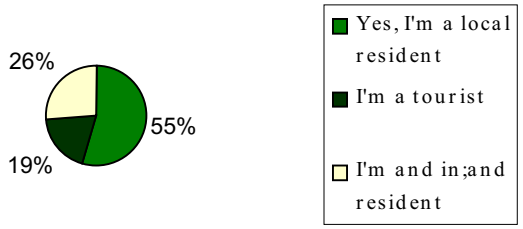
Finally, a technique called terracing has been used on the cliffs, where they have been cut into levels similar to stairs; this puts less pressure of the cliffs and prevents slumping. Unfortunately, it is very expensive and laborious to do and make it harder for water to run off of the cliff, unless there are drainage gullies.
What do residents of HH and HC think about the erosion taking place along their coastline?

Ten: What do residents of HH and HC think about the erosion taking place along their coastline?

To answer this key question I will use my questionnaire, analysing it and using it as evidence to answer this question with.

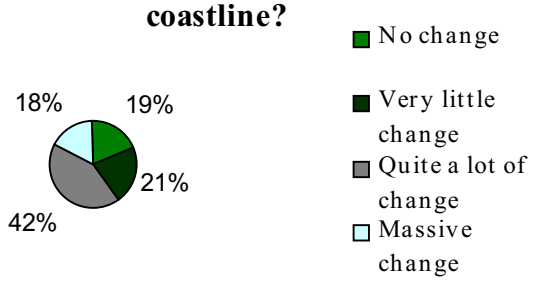
The first question on the questionnaire was ‘*Do you live locally*?’ and the most popular answer was A:’ *Yes, I’m a local resident*’ with 54%. The least popular answer was B: ‘I am a tourist’ (19%). This survey was conducted on a Friday, during the daytime, if it had been done at the weekend, or school holidays etc, the outcome may have been completely different, as a less people would be at work & school etc.

Do you live locally?



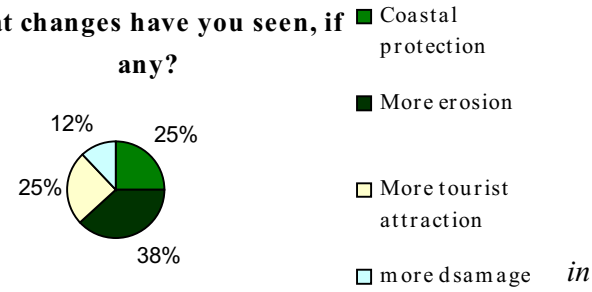
The third question on my questionnaire was '*Have you seen a change in the coastline*?' and the most popular response was C: 'Yes, quite a lot of change' (72%) and the lest popular was D: '*Yes a massive change*' (30%) although there has been a lot of change on this stretch of coastline over the years, it is very slow, so even local residents, may have only noticed a certain amount of change, those who have lived there their whole lives, may notice more of a change than others.

Have you seen c ahange in the coastline?



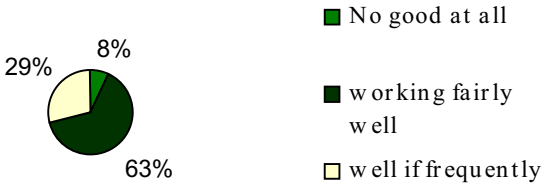
I then went on to ask '*what changes have you seen along the coast?*', if any and the most popular answer to this was '*More erosion taking place*' (46%) and the least popular was '*More damage caused by those that use H.H*' (14%) So from this, I can conclude that the residents are fully aware of the changes that are going on with their coastline, also, while filling in my questionnaire, people also gave us some of their opinions of what was going on at H.H, and the general feeling is that more should be being done to protect it, as H.H is their homes.

What changes have you seen, if any?



When asked '*What do you think of the coastal protection in place already in this area*?' the most popular answer was B: '*It's working fairly well*' (68%) and the least popular by far was A: '*No good at all, they're ineffective*' (8%) this shows that the residents are not only aware of the problem, but are also aware of what is being done to try and slow it down.

What do you think of the coastal protection already there?



Eleven: Compare and Contrast what is happening at HH and HC to other case studies from around the coast of Britain.

Hengistbury Head is not the only case like this in the UK, for this key question I will compare and contrast this scenario to others around Britain.

Recently there has been a lot in the news about the collapsed cliff in Lyme Regis. In February 2001, the latest phase of an operation to stop the Lyme Regis falling into the sea was revealed; a new sea wall, at the cost of about £4m, but on the evening of the 6th of May 2008, the cliff partially collapsed and 100's of tonnes of debris tumbled onto the beach below, thankfully no one was hurt, and no buildings were lost. The area is very prone to landslips like this, and they have happened before, but the most recent one is being said to be the worst in 100 years. Lyme Regis, similar to HH and HC is a busy residential and tourist area and the main reasons for the protection of this part of the coast is the 170 homes, the football pitch, St Michaels Church (a historical landmark) and Charmouth Road, the main route out of the town. The reason behind the landslips is not only attack by the sea, but also just the make up of the rock; it is made from layers of soft 'blue lias' clay that lay over a layer of harder limestone, this set up means that the rock takes on rainwater, becoming saturated, causing the land to become more unstable. The first phase of this project was completed in 1996, and the second and third were completed in 2007, the work was taken on very quickly after falling rocks destroyed two buildings. This related to what is happening at HH and HC because although work is being done, the land is still collapsing and slipping away. This is however, different in many ways to what is happening to HH and HC, large pieces of these cliffs have yet to fall away and bring the message truly home. This part of coastline also had protection already in place, this shows that sometimes one thing isn't enough to tackle the elements, and more perhaps needs to be done.

Another example of a similar scenario is Steephill Cove, which is on the Isle of Wight:

Steephill Cove is backed by residential development, and has Victorian coastal defences, which were partially upgraded in 1992/3 it was then recognised that further work was needed on the sea wall in the centre of the bay. The reason behind this need for further work of the coastal defences was that the land was unstable, similar to Lyme Regis, due to coastal erosion. As said before, the fact that further work was needed was recognised years ago, just not the extent of what was needed. This shows that not enough is understood about what is happening to our coasts, it is often taking landslides or cliff collapses to remind people of what is going on, work is also left until the area is truly desperate, as is in this example.

These two other cases link back to my prediction that it could be seen as a selfish or unselfish idea to build these defences, or in some cases not building them quick enough. These two cases will help me with my conclusion.

Four: Conclusion.

Over this piece of coursework I have looked at lots of pieces of evidence to help me answer the question I was asked at the beginning. Before giving my final opinion I will sum up both sides of the argument, using everything I have learned over the past few weeks, finishing with my own opinion, again backing it up with what I have learned.

On one hand, the building of the groyne at HH can be seen as a selfish idea. I will go through these points in order of importance as I see them from least to the most important argument. Firstly, there is a religious view to this argument, God built the earth and the sea, and provided us with the elements, he didn't provide coastal defences, the land is only doing what is natural to it .Secondly, although coastal defences are effective and protect our beautiful country from crumbling into the sea from the outside in, but they are not attractive, HH and HC are both very beautiful

places with high numbers of residents and tourists and the groynes and other defences subtract from their natural magnificence somewhat. Thirdly, coastal defences are very expensive, costing thousands, sometimes even millions of pounds, as well as needing to be maintained and repaired, as stated before, HH is very popular tourist area, with over 1,000,000 visitors per year, the money used to build the groyne could have been better spent elsewhere, improving local services etc in order to bring back and bring in more visitors to the area. Fourthly, and possibly the best argument in my opinion, is that the south coast of Britain is the most attacked coastline in the world, but not all of it is being protected, some parts are left completely bare to be worn away by the sea, wind and rain. This is obvious if you visit Hengistbury Head, there is a point where you can stand, if you look to one side, you can sea the long groyne and the difference that it makes, look to the other, there is no defences what so ever, where you can see the effect the sea has had on the area.

On the other hand, the building of the groyne can be seen as unselfish. As I said before, HH and HC are both busy residential and tourist areas, the coastal defences that are in place are protecting the area so that it can continue to be enjoyed in good condition and also stay safe to live on and visit. HC already has a lot of coastal defences, in the form of sea walls, gabions, rock armour and beach replenishment etc. The residents of Hengistbury Head, when filling in a questionnaire, answered the question "would you prefer it if the coast was left unprotected?' 72% said no, this shows that the residents of HH and HC want the protection there to keep their towns and homes etc safe, on this level it is unselfish, because it is what the majority want. Furthermore, the residents of Highcliffe also answered this questionnaire, the main argument is; is the groyne a selfish idea because of the effect it has on the neighbouring town of Highcliffe? The residents here do not think that the coast should be left un protected either.

In conclusion I feel that the building of the long groyne at Hengistbury Head was *NOT* selfish one. I think this because of the amount of protection that is present at Highcliffe too, both areas are equally protected from coastal erosion for the time being. Also, I feel that it wasn't a selfish idea due to the amount of tourism the area attracts with over 1,000,000 visitors per year, the protection in place means that people will continue to come back and more new visitors will come to enjoy the scenic British coast this will maintain the economy in the area and keep local businesses thriving etc. Lastly, I feel that the groyne was not a selfish idea because not enough awareness is being raised of the issues of coastal erosion, the councils at HH and HC are obviously aware of what is happening to the coast around their areas but others are not, it more awareness is raised then more parts of the British coast can be protected.

Five: Evaluation.

Although the visits to HH and HC were useful, trips are different times of the year and day would be useful too because the groups of people visiting would be different and they would give different opinions are answers to questionnaires etc as would the landscape, we went on a typical summer/spring day during the week in the middle of the day, if we were to visit in mid winter at the weekend for example, we would have

probably met some completely different people and the results of our questionnaires would be very different. In an ideal world case studies for things such as coastlines would be done over a period of a number of years, in order to see the changes happening first hand instead of researching it and asking people about it. From completing this piece of coursework I have learned quite a lot, the different types of coastal protection, how they work, how much they coast, how this case relates to others around the country, what the residents of the area really think, I have also learned the importance of spreading coursework out evenly and giving yourself enough time to complete it, and not panicking if you’re struggling. If I was to do this coursework again there are several things that I would do differently, I would ask more people to fill in my questionnaire, and gather more in depth information from them on their opinions of what is happening at HH and HC I would also try to keep my field work more detailed and neater to help me later on.