

CHAPTER 12 = THE SEA

Processes of every sea=erosion, transportation and deposition-breaks, transports and deposits rock.

Constructive wave=when swash is bigger than backwash (S>B)

Destructive wave=backwash is bigger than swash (B>S)

Processes of coastal/marine erosion

(1)Hydraulic action=force of destructive waves when backwash is bigger than swash (B>S). Destructive waves depend on the strength of the wind. During times of storm there's gonna be large waves. Destructive waves also depend on the fetch of a wave the fetch is the length/distance of water that waves travel before they break.

•swash=is what a wave brings in

•Backwash=is what a wave brings back.

(2)Abrasion=is the force of destructive waves and their load like sand, silt, shells, pebbles and stones like rocks, boulders and big pebbles.

(3)solution=is when seawater and CO₂ makes a mild carbonic acid. $H_2O + CO_2 \rightarrow H_2CO_3$. carbonic acid dissolves limestone.

(4)attrition=rocks hit off each other and eventually wear down sand.

(5)Compressed sand=incoming waves trap air-trapped air expands it will weaken the rock then break.

How does the sea transport its load

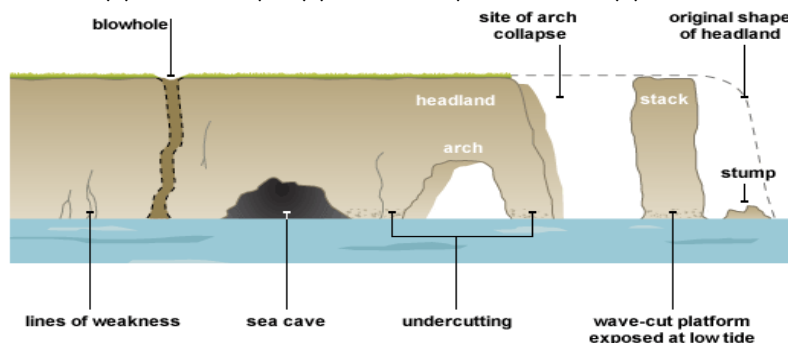
Longshore drift=the materials drift along they deposit the water. constructive waves (S>B)

•limestone=soft rock •sandstone=hard rock

•SWAT=South Westerly Anti Trade.

Features of coastal /marine erosion

(1)bays and headlands (2)sea cliffs-cliffs of moher (3)sea caves (4)sea arches (5)sea stack (6)sea stump (7)wave cut platforms (8)blowhole



Coastal erosion feature

Feature/Landform=Bays and headlands

Example=Galway Bay, Loophead, Malin Head.

Explain=•Bays and headlands are features of sea erosion formed by the processes of sea erosion like hydraulic action, abrasion and solution

•Bays and headlands only form if there's a band of soft rock sandwiched between 2 bands of hard rock that causes metamorphism because of that differential erosion occurs=the soft rock gets eroded faster by abrasion=the force of destructive waves and their load,solution which is when seawater and CO2 makes a mild carbonic acid and hydraulic action which is the force of destructive waves when backwash is bigger than swash.soft rock gets eroded quicker than hardrock to form a bay. •a bayhead beach forms at the back of the bay . •the 2 bands of hard rock are more resistant to erosion and form headlands

Diagram=

Features of coastal/marine deposition

(1)Beach (2)sand dunes (3) sandspit (4) lagoons (5)tombolos

Feature of coastal/marine deposition

Feature=Beach

Example=Ballybunion beach Co.Kerry

Explain=•a beach is a feature of sea deposition formed by constructive waves. •a beach is a build up of materials along the coastline(sand and shingle-small pebbles)

•when waves break they lose their energy and can no longer transport their load.swash brings materials up shore the beach and deposits material.backwash is much weaker because sand is permeable.cannot wash all deposited materials back out to the sea and they build up overtime and form a beach.storm beach formed during times of storm.

Diagram=

Why protect coastlines?

(1)to protect villages,urban centres.peoples tourists towns there's loads of fishing villages ,like howth and killybegs.

(2)because of climate change CO2 traps heat.polar ice caps are melting.sea levels rise.problems with coastal flooding there are more and more storms.

How do people protect the sea?

(1)build a sea wall

•a seawall is a curved wall of concrete,reinforced steel eg of a seawall in salthill Co.Galway.
•The seawall's role is to send destructive waves back out to sea.sea walls can be damaged/break during storms.

(2)groynes and beach nourishment

•Groynes are small low walls of concrete or timber and are built on beach but extend out to the sea.
•They are to trap sediment that longshore drift transports the function of groynes is that it widens beaches and a beach is a natural defence against erosion because sand is permeable.

(3)Gabions/rock armour(salthill)

•gabions are rock and stones and are put into wire mesh cages and are placed at the back of the beach or base of a cliff they break the destructive wave with gabions protecting the shoreline.

•rock armour are huge boulders not destructive waves wash them away NIMBY.but they can be eyesore and quite dangerous.

People and the sea

-positive use of the sea

(1)For fishing e.g killybegs

•fishing is important as its major source of employment.The farmland there is very poor in places like killybegs there's very little employment.factories don't set up there cause there's bad labour,workers.the fish that are caught include cod,mackerel,heren.the fish bring a lot of money into the towns.fish are good for the diet they give you Omega 3 which is good for the brain,concentration and its good for your health the other busie=nesses benefit

(2)tourism eg lahinch

•tourists go to the sea cause they like to go t beaches and holidays because people with young children like going there children i'll be there all day and because it's relaxing.people like to cycle waterford greenway.that brings a huge amount of jobs for eg directly and indirectly like a fisher ,farmer etc.

Negative use of sea

(1)pollution

•a lot of people pump untreated waste into the sea. Treatment plants are very old and not able to cope with modern waste water pollution at sea affects sea life,fish,dolphins begging to die.
•agriculture the farmers spread slurry on land to make it more fertile and fertilisers the rain brings these fertilisers out to the sea ecosystem of sea is now gone.the microplastics go back into our food chain.

Exam Questions

Write a letter an example of a coastal defence measure that would be suitable to protect the area from future erosion and an explanation of how the coastal defence measure you named will protect the area from the processes of coastal erosion

Dear councillor,

I am concerned about the future of this area.if this wont be taken care of it could lead to a collapse which is really bad for the people living there and myself.it will be hard to access places like schools,Gaa clubs,shops and if this problem wont be resolved. I think that you should spend money on habionsor rock armour that will stop the flooding.gabions are rocks and stones and they are put into wire mesh cages and are placed at the back of a beach or cliff.they break the destructive waves with the gabions to protect the shoreline.rock armours are large boulders destructive waves cant wash them away the only disadvantage to them is that they can be an eyesore and quite dangerous but they can be a temporary solution for the time being.

Name and give a irish example of landform of coastal erosion explain with aid of diagram how it formed

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diagram=

Explain with aid of diagram the landform

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Diagram=

Explain how one of the processes has shaped the coastline

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