



read

Coastal Landscapes

Waves



quiz



The Big Picture

physical processes*

coastal landforms

River Landscapes

coastal management

case study



Key Terms



Constructive wave – A low, gentle wave that builds beaches.



Destructive wave – Tall, high energy waves that erode beach material.



Wave – A disturbance on the surface of the sea in the form of a moving ridge.



Waves

Waves are caused by energy transfer from the wind to the sea. As the wind blows over the surface of the sea, it creates friction forming waves.



Wave Energy

Wave energy is determined by:



The strength of the wind.



The duration of the wind.

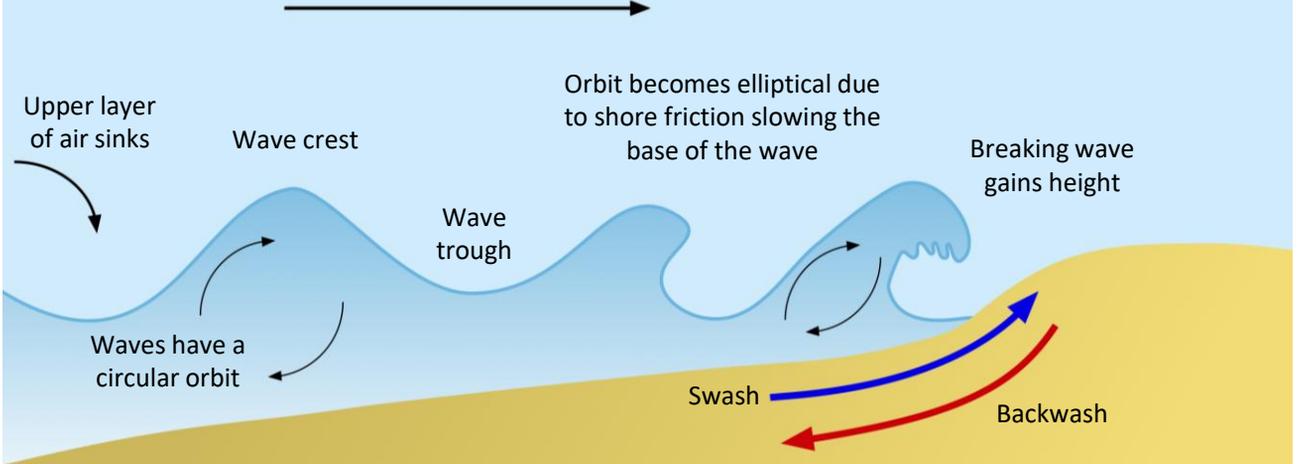


The distance of open water over which the wind blows (fetch).



Characteristics of Waves

wave length (distance between crests)



Destructive Waves

Short wave length so high frequency (10-14 per minute)

Steep wave front

Wave height >1m

Wave plunges onto steep beach with energy directed downwards

Weak swash

Strong backwash

erodes sand

Offshore bar

where sand is deposited



Constructive Waves

Long wave length so low frequency (8-10 per minute)

Wave height <1m

Gentle wave front

Wave gains little height

Wave spreads a long way up the gently sloping beach

Strong swash

Weak backwash

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