



Cromer beach, Norfolk
<http://www.flickr.com/photos/revstan/3547075472/>
© 2009 Rev Stan

1. **DESCRIBE** – What is the structure in the photograph?
2. Click on the link <http://www.videosurf.com/video/longshore-drift-gd-131856576> and watch the animation.
3. **EXPLAIN** – Why was the structure built here?
4. Draw a fully labelled diagram to explain the process of longshore drift on a beach.
5. Draw a second fully labelled diagram showing the effects of adding three groynes to your beach. How is longshore drift along the beach affected?
6. Which other coastal features of deposition are affected by longshore drift?
7. Name a location where groynes are used to control longshore drift.

Teaching notes

The activity is suitable both as a class activity and as a homework task.

The resource can be used for work on coastal processes including longshore drift and/or coastal management involving hard engineering. As such it could be a useful starting point for work on depositional landforms and/or other coastal management methods.

Suggested answers

1. The photograph is of a wooden groyne at Cromer beach on the north Norfolk coast. Several groynes are easily visible using Google Earth e.g.

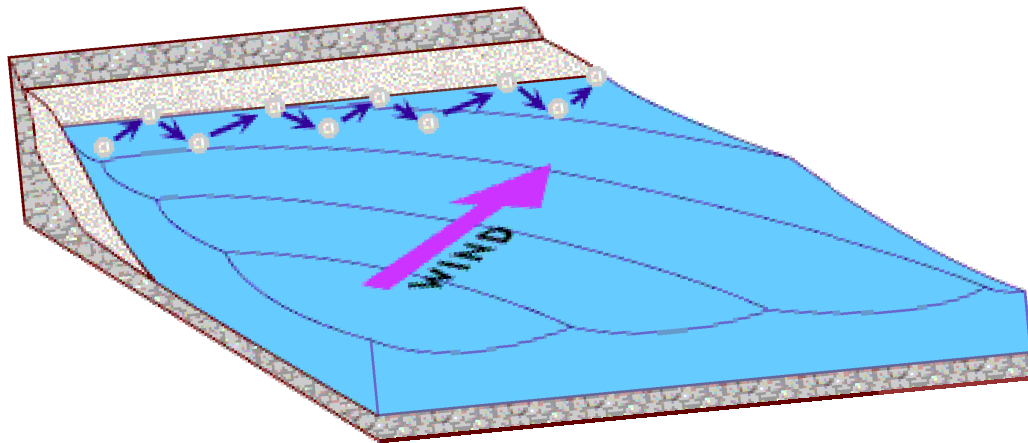


2. The two minute video at <http://www.videosurf.com/video/longshore-drift-gd-1318565760> explains the role of groynes in preventing longshore drift at Borth Beach north of Aberystwyth. Longshore drift is explained by an aerial photo animation.

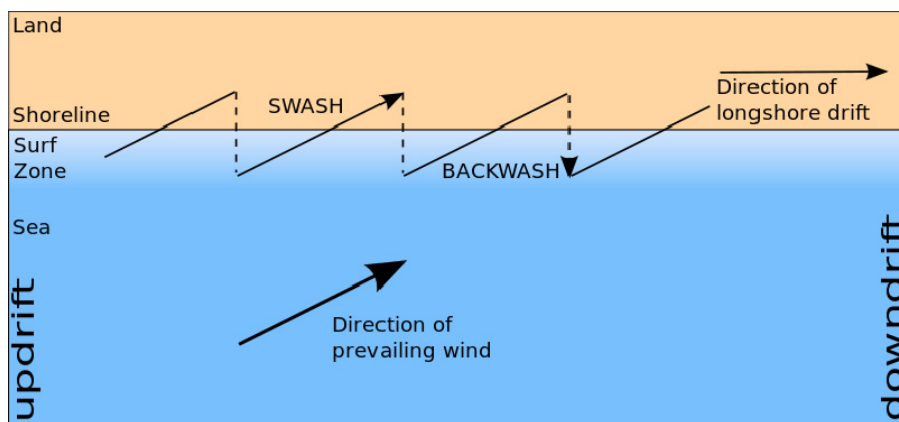
- The beach at Cromer is predominately sand although there are substantial amounts of shingle to the east of the Pier. The groynes form part of the coastal defences at Cromer to slow down the longshore drift. This moves the beach material from west to east and is caused by the waves which come from a north-westerly direction. Substantial build up of sediment is visible in the Google Earth image to the west of the groynes.

Several diagrams to explain the process of longshore drift are available in textbooks or on the internet e.g.

- http://members.tripod.com/~Geography_homework/erosion.html,
- <http://geomaps.wr.usgs.gov/parks/sea/beach3.html> by the United States Geological Survey



- http://en.wikipedia.org/wiki/Longshore_drift



- Other coastal features of deposition affected by longshore drift include spits, bars and tombolos etc.
- Groynes are used to control longshore drift at many locations around the British Isles and abroad. Textbook examples of the location of groynes in England include Barton on Sea in Hampshire, Hornsea and Mableton on the Holderness coast and the north Norfolk coast.