

Activity Title:

Beach erosion – summary of impacts

Focusing question

How does beach erosion occur?

Resources required

- Beach erosion flow charts – empty and complete – page 207 and page 208
- Copying: copy beach erosion flow charts for each group

Prior learning

4a Importance of sand dunes

4b Dune formation

5b How do people affect beaches?

Method

- 1 The objective of this activity is to reinforce learning from past activities in this theme about the effects that humans have, both positive and negative, on the natural processes of sand erosion and accretion.
- 2 Either hand out copies of the beach erosion flow chart to pairs or small groups of students or project a digital image of the flow chart. Complete the diagram by matching the words with the pictures. Do this as a class or small group exercise.
- 3 Discuss or draw information from students by asking the following key questions:
 - Erosion is caused by two main factors. What are they? (Natural erosion, human/cultural induced erosion.)
 - Natural erosion is caused by storms. What different elements of the storm cause erosion? (Wind, wave set up.)
 - What negative impact do humans have on the sand dunes? (Sandboarding, sand extraction, vehicles, pedestrian trampling, housing developments, roads, carparks, tracks.)
 - How can humans have a positive effect on the sand dunes? (Use of accessway, Coast Care activities such as building accessways, replanting dune plants, fencing vulnerable areas, erecting signs.)
- 4 Go through the correct answers with students using the answer template.

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**Environmental
Education Aspect:**

About the environment

**Environmental
Education Concept:**

- Sustainability
- Interdependence

Curriculum Links:

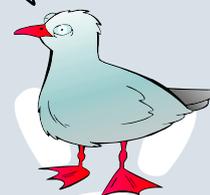
- Social Science
- Science

**Suggested
Curriculum Level:**

Levels 3-4

SUSTAINABILITY TIP!

Project a digital image of the beach erosion charts and save paper.

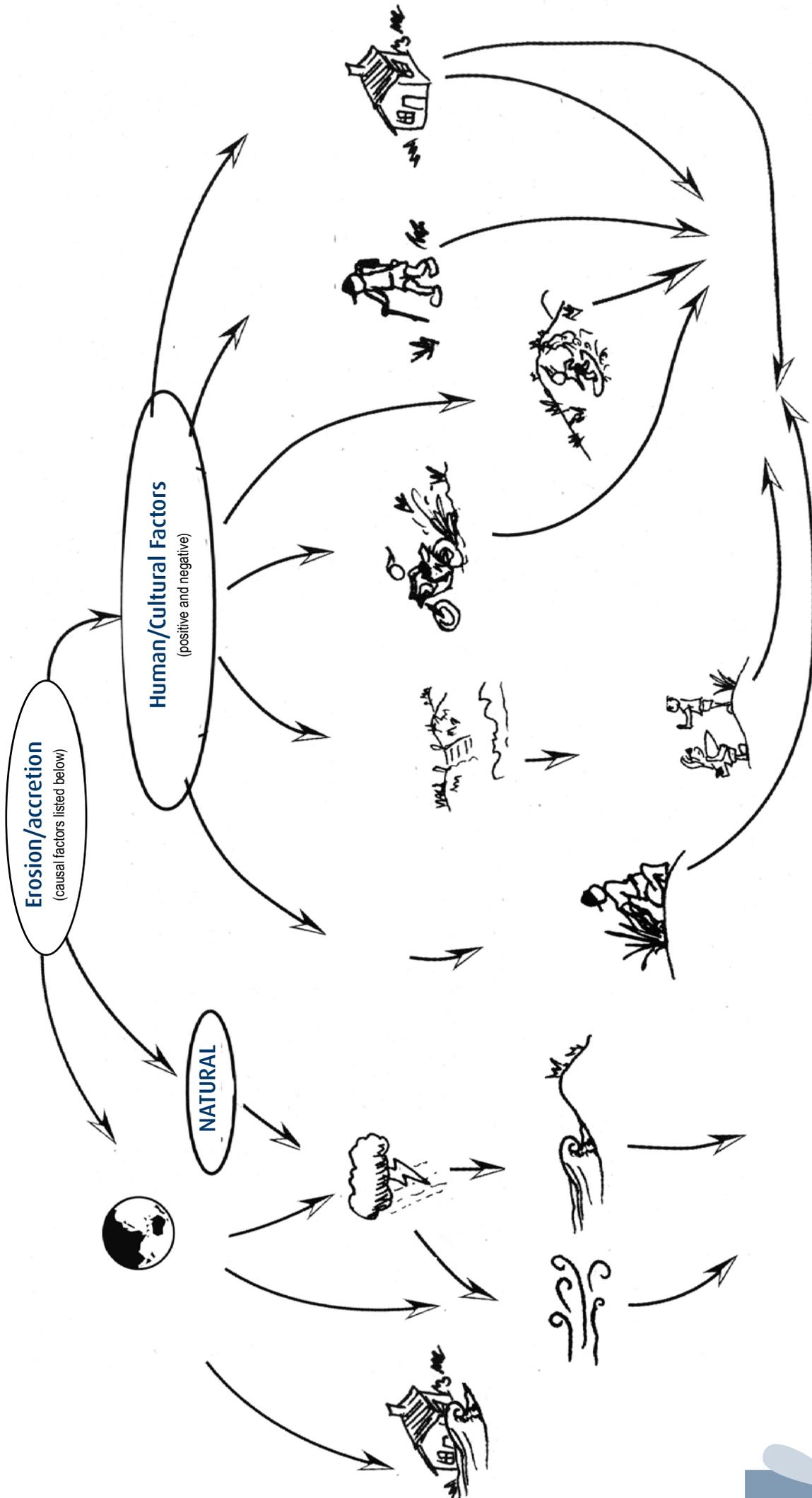


Possible next steps

- 6h Case study – Pukehina – this activity applies knowledge gained about beach erosion to a real example where beach erosion has occurred and been facilitated by a number of the factors identified here.
- Look at the cost and merits of different coastal erosion prevention measures. A table of these is reproduced on the fact sheet provided for activity 6h Case Study – Pukehina.
- 6j Coastal protection – different management options – an activity challenging students to come up with potential solutions to real life coastal erosion issues.



Beach erosion flow chart



Storms, Coast Care Group, Sandboarding, Motorbikes, Housing Development, Beach/Dune Erosion or Accretion, Planting Dune Plants, Protecting Dune Plants, Wave Set-Up, Wind, Using Accessways, Human/Cultural Factors, Pedestrian Trampling, Climate Change (rising sea levels and extreme weather events)

Beach erosion flow chart

