Coastal Surveys

There are a large number of topics which could be investigated during coastal fieldwork. Examples include how the sea shapes the beach or how tourism is affecting the area. The survey sheet below will help you get a general view of the area, and your teacher will be able to give you advice on techniques for investigating the physical processes.

Name of area: ..... Date: .....

Sea

1 What is the compass direction of incoming waves (swash)? .....

2 Count the number of incoming waves for 5 minutes: .....

Divide by 5 to give the average number of waves each minute: .....

(A rough guide: about 12 per minute = destructive waves, about 6 per minute = constructive waves.)

Land

1 Describe what the coast is like: Beach? Cliffs? Steep or gentle? (Use the back of this sheet for a labelled sketch.) .....

2 What is the beach made of? (Eg sand, shingle, bare rock, etc.) Estimate % cover if there is a mixture.

.....

3 Is there any evidence of coastal erosion? (Eg wave cut notch.) .....

4 Is there any evidence of coastal deposition? (Eg spit.) .....

5 Pebble size in centimetres (measured along longest axis):

Sample number:	1	2	3	4	5	6	7	8	9	10
Near sea										
Near cliffs										

Human Impact

1 Describe the land use near the sea (you could map this).

.....

2 Have people altered the coast? (Eg docks, sea wall.) .....

3 Is there any evidence of tourism? .....

4 Pedestrian count: .....

5 Environment quality index:

	5	4	3	2	1	
Clean beach/sea						Polluted beach/sea
Pleasant view						Unsightly view
Good air quality						Poor air quality
Quiet/appropriate noise						Inappropriate noise
Appropriate facilities						Facilities inadequate or inappropriate
Enjoyable to visit						Not enjoyable to visit
Total /30						Higher score = better quality

Hints and tips

Safety is important in any fieldwork activities. Cliffs, rocks and the sea have particular dangers. Make sure you get your teacher to advise you on safety and take someone with you when you do the fieldwork.

See also

Slope profiles; Field sketches; Environmental quality; Environmental impact analysis; Land use mapping

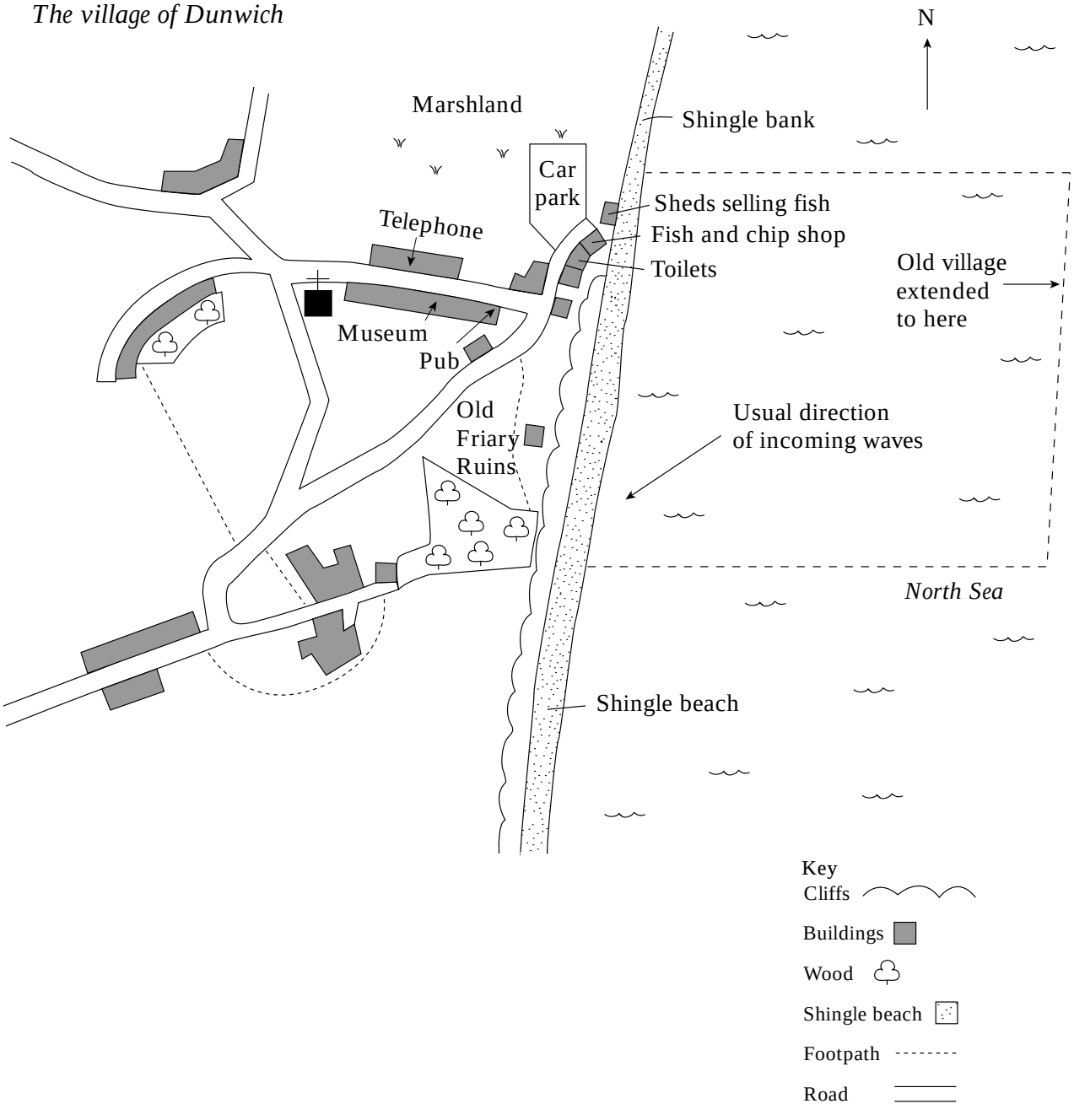
Coastal Fieldwork Planning Exercise

Dunwich is a small village near Sizewell on the East Suffolk coast (try finding it in an atlas). As you can see from the map below, the village used to be much bigger than it is today. Due to its quiet location and historic interest, a reasonable number of visitors come to walk round and to eat at the pub and the fish and chip shop.

Imagine you were going to Dunwich for your Geography fieldwork. Choose one of the topics below, write down a fieldwork plan and label on the map where you would do each piece of fieldwork:

1 Why has much of the old village of Dunwich disappeared into the sea?
2 How have tourists affected Dunwich?

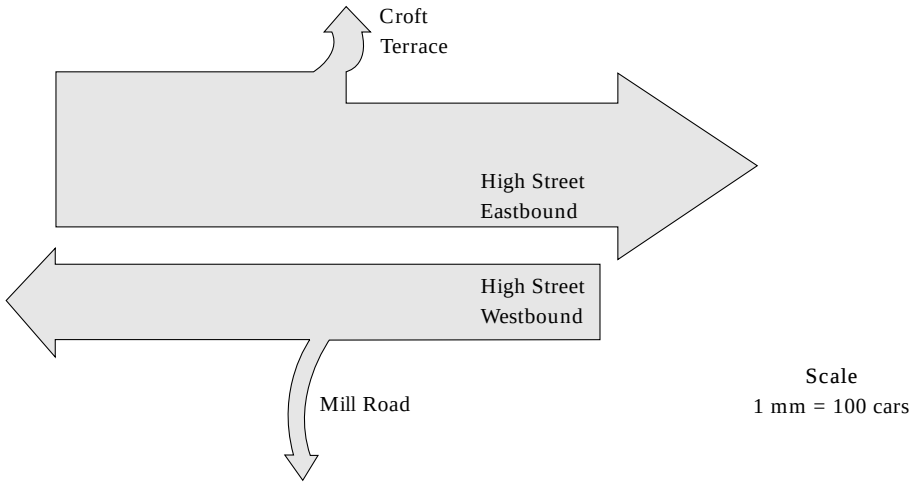
The village of Dunwich



Proportional Flow Maps

Aim

These maps involve lines which are proportional in size to the volume of movement between places on the map. They are useful for displaying the results of traffic counts as they enable comparisons of the traffic flow on different roads, but they could be used to show any type of movement across space.



Method

1 Draw a base map of the area covered by your data.

2 Examine the range of your data and decide on a suitable scale for the width of the flow arrows, eg 1 mm = 50 cars.

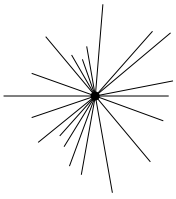
3 Draw the flow lines on in pencil first. Your map will look neater if the flow lines do not cross or overlap, but sometimes this is unavoidable. The flow line can go along the course of the real life route (eg a road) or it could follow a direct or more convenient route (eg for a map of the number of boats going along various rivers, you may wish to simplify the river's courses). However, the beginning and end of the arrow should be in the correct location.

4 If a two-way movement is required, divide the flow line and use shading to separate the two directions.

5 Give the map an appropriate title, write down the scale, and label places on the map as necessary.

Hints and tips

- Try to keep the arrows the same width throughout. Measure their width more than once if necessary.
- Always draw a rough map in pencil first. This will enable you to plan the routes of your arrows more easily and the final map will look clearer.
- It is possible to make the length of the arrows proportionate to the flow instead of the width. In this case the arrows will have to be next to the routes rather than replacing them. The arrows can be divided along their length to show different categories of data, eg different vehicles.
- A simple technique called 'desire lines' can be used to show movements from a wide area to one or more points. A line is drawn on the map to show every connection, eg connecting a number of shopper's home villages to the town where they shop. Be careful the maps do not get too crowded though.



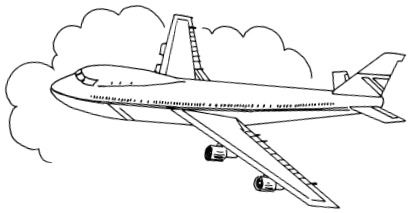
Desire lines from Maidstone

See also

- Topological maps

Proportional Flow Maps Exercise

Draw a proportional flow map to show air passenger movements between the UK and selected European countries for 1995. Figures include arrivals and departures.



- Identify the countries you will need on a base map of Europe.
- Draw in rough where your flow lines will go (they do not all have to start from the same place in the UK).
- Decide on a sensible scale for the width of your lines.
- Carefully draw on the flow lines with the correct widths.
- Colour in the flow lines to make them stand out, give the map a title, scale, key and/or labels as appropriate.

Country	Number of international passenger movements by air 1995 (millions)
Denmark	1.4
France	6.6
Germany	6.5
Greece	4.5
Irish Republic	6.0
Italy	4.7
Netherlands	4.3
Norway	1.2
Portugal and Madeira	2.8
Spain and Canary Islands	18.3
Sweden	1.2
Switzerland	2.7

Figures rounded to nearest 100 000.
Source: Civil Aviation Authority, UK Airports (annual) Table 12

Questions

1 Describe how the passenger flows vary from country to country.

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2 Suggest some reasons for these variations.

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3 Why would this information be hard to show using desire lines for individual passengers?

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