Coastal Fieldwork 2: Coastal Management, Beaches and People

This is the second of two articles which explores a range of fieldwork options that can be undertaken as part of the independent investigation or NEA (non-examined Assessment) for A-level Geography. As before, much of the discussion might also be relevant to AS students who are also undertaking coastal fieldwork, which has a focus on coastal management and coastal risks.

Understanding the importance of people and the coast – coastal defences evaluation

We make over 200 million day trips to the coast in England and Wales every year. Coastal areas are often of significant importance to geographer, not only because 60% of the world's population lives within this narrow strip of land next to the sea, but also because of the increasing demands on this precious resource. Understanding concepts of risk and resilience in the context of coasts are therefore important. One area in relation to coastal risk and resilience that can be studied as part of a wider coastal investigation is a semi-qualitative and qualitative assessment of coastal defences schemes. **Figure 1a** and **1b** provide two different examples of recording sheets that could be used to assess coastal defences. It is likely that you would need to also use a series of annotated photographs which would provide additional good evidence of coastal protection (or close-ups of places where the defences were in need of repair for example). Remember that "standard" recording sheets such as those in Figure 1a and 1b can be easily adapted and modified. Weightings can also be applied to criteria – in Figure 1b for instance, the investigator may decide one factor is more important than another. Individual scores can be adapted (i.e. increased along a particular row) to reflect this changed importance. Research can be undertaken to find out about the costs of defences. **Table 1** gives examples of typical costs that could support an enquiry into a coastal defence evaluation.

Figure 1a *A sheet to measure the quality of coastal defences*

Figure 1b *Another example of a semi-quantitative recording sheet*

Remember that these costs are approximate, and based around a number of different case-studies where this information is derived. Coastal defences involve a number of different costs including: planning and design (e.g. feasibility surveys and consultations), site set-up and construction as well as longer-term monitoring, maintenance and potential replacement costs.

Coastal "profiling" surveys

Questionnaires and/or interview surveys may reveal patterns in the useage-profiles for particular beaches or other coastal places.

Option	Building Costs	Maintenance Costs	Typical cost per metre (£)
Offshore breakwater	High	Medium	2700-7300
Groynes	High	Low-medium	10,000-100,000
Rock armour	High	Low	1350-6000
Sea-walls	High	Low	700-5400
Beach nourishment	Medium	Medium-high	350-6500
Rock revetments	High	Low	650-3000
Timber revetments	Medium	Medium	100-1000

Table 1 *Typical costs of a range of different coastal defences*

Figure 2 *Examples of beach user 'segments'*

A survey by Encams, for example (http://www.leesonhouse.com/download/a-level-geography-courses/beach-user-study.pdf), found that 61% of their sample were female and that the dominant age group visiting the beach were in the range 35-65. One line of enquiry is to test whether the findings from this report hold up for different beaches and at different times of the year or season. The enquiry could also focus on the reasons for why beach users may be skewed towards a particular gender and / or age.

The same survey also classified beach users into "segments" (see **Figure 2**) with defining characteristics as well as key facility requitements. Again, this is an area that could be investigated to futher test the segment descriptions and characteristics and see how different resorts for example, compare in terms of their visitor profiles. How and why are there any overlaps in terms of comon needs and activities between segments?

A more detailed study could attamept to investigate the social profiles of people and activities. For this you would need "geodemographic" data (e.g. OAC – output area classifications https://www.ons.gov.uk/methodology/geography/geographicalproducts/areaclassifications/2011areaclassifications that could be linked to an indivual based on their postcode). How does this correlate with any other factors? Other areas of focus could include:

- Who are visits made with? (family, friends, partner, work colleague, alone..)
- Frequency of visits during the year
- Duration and dwell time
- Mode of travel to the beach (car, bus, train, cycle, walk etc)

A linked idea is to define the characteristics of a beach (or resort). **Table 2** provides some examples of criteria that could be used to help make a judgement.

There may be important differences between 'resort' and 'rural' beaches that can be investigated by way of a geographical enquiry. A couple of focuses are provided below:

- "Evaluating the beach at X. Resort or rural beach?"
- "How different are the beaches at T and V in terms of their, quality, characteristics, amenities and usage?"

Surveys could be based around questionnaires, interviews combined with detailed maps showing the distribution of beach facilities and amenities etc. Annotated photographs would work well as a tool to analyse similarities and differences between resort and rural beaches. This could realistically be combined with a beach segment style survey as well.

Characteristics of a RESORT BEACH	Characteristics of a RURAL BEACH
Mainstream / popular appeal	More 'niche' appeal
Tend to be established and high profile	Tend to be found in remote and less accessible locations (limited signage to direct)
Range of amenities and activities that appeal to certain groups of users (e.g. bars, clubs, cafes, amusements, shops, etc.)	Appeals to users in particular life-stage, especially more mature groups
Promotion of high standards of beach cleanliness and safety	May be evidence of 'beach snobbery'
Ample (paid) car parking within easy walking distance	Accessibility onto the beach and car parking (free) may be problematic
Toilets and facilities for visitors with mobility difficulties	Advertising of beach standards may be off-putting to current users
High density of people on the beach	Low desnity of visitors - even in summer periods

Table 2 *Typical differences between resort and rural beaches*

Beach quality surveys and beach pollution

Beach litter is problematic on beaches, particularly those with a 'resort' profile. The type and amount of beach litter varies throughout the year and from beach to beach.

The amount, and its distribution on individual beaches affected by such factors as:

- The weather
- Tidal conditions
- Timing of school holidays
- Local beach-cleaning regimes
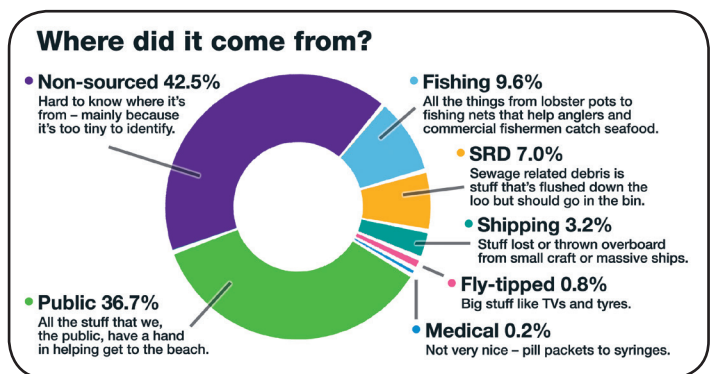- Local dog bans

Figure 3 *Sources of beach litter from the 2016 Beach Clean Report (Marine Conservation Society - MCS)*

http://www.mcsuk.org/what_we_do/Clean%20seas%20and%20beaches/Beachwatch/Great%20British%20Beach%20Clean%20results%202016

How to survey for beach litter (adapted from MCS). Two different approaches:

Strandline survey: A transect (50-100m) of along the top wet strandline should be chosen at random and marked to allow the same stretch of beach to be surveyed the following month (use the GPS on your phone or an obvious parallel landmark).

Litter should be recorded over a 1m wide strip along the length of the transect, recording visible litter only (don't disturb material underneath). Categorise according to type, e.g. plastic pieces, plastic wrappers, caps and lids, glass, plastic drinks bottles, string / cord etc.

Upper beach survey: An alternative survey could be to investigate between the current high water mark (strandline) and the upper limit of the useable part of the beach (e.g., up to the edge of the dunes, sea wall or promenade).

Figure 5 *Extract from a coastal literacy survey, asking respondents about their biggest perceived threats* (source: http://www.chichester.gov.uk/)

Another aspect of beach quality might be to investigate aspects of the Blue Flag award. This is widely considered the gold standard for beaches and is internationally recognised.

Blue Flag has become a highly respected and recognised eco-label working to bring together the tourism and environmental sectors at local, regional and regional scales. Whilst Blue Flag certification guarantees the quality of bathing water this is only part of the criteria – there are several others including communicating information to the public about local ecosystems, codes of conduct as well as having good environmental management. The Blue Flag award is really geared-up to cater for resort beaches with plenty of facilities.

At this point, it is worth stressing that a Blue Flag beach is not necessarily any better than other beaches. In fact, quite the opposite is true of many of Britain's smaller, less accessible beaches and coves.

Possible lines of enquiry include whether beach X is suitable for a Blue Flag award in the future, or what threats are there to beach Y not maintaining a Blue Flag status in the future. Alternatively, you may want to consider the perception and importance of the Blue Flag status to different stakeholders and user groups, perhaps combining with a linked study of "segments" and the strength of their attachment to the award.
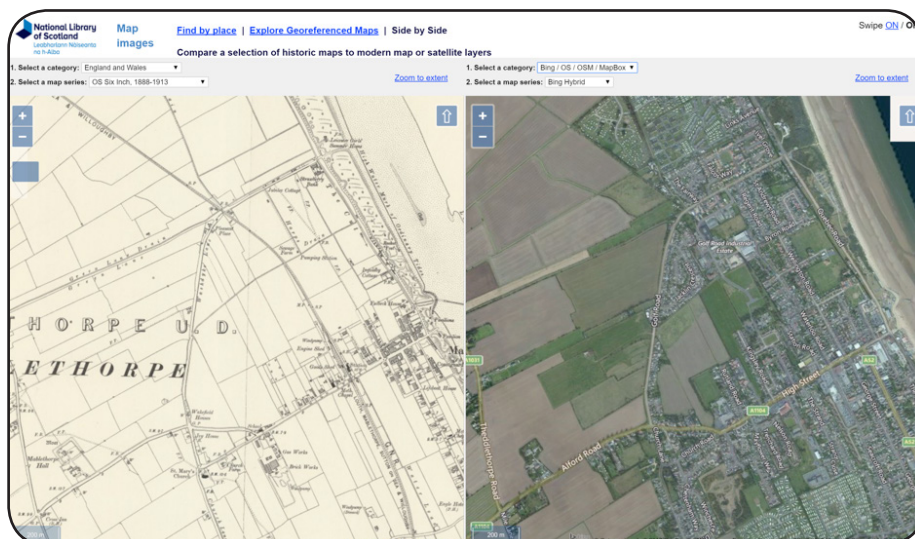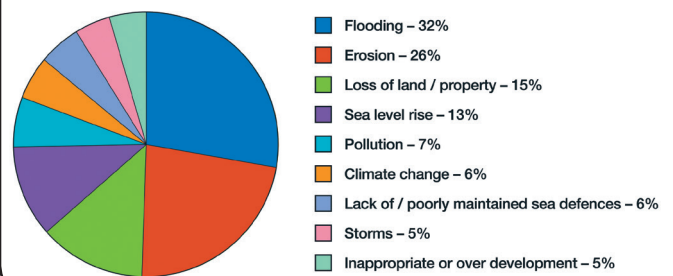
Perception of coastal risk – "coastal literacy"

Studies which attempt to assess perception of coastal risk and how different groups of people might have different levels of awareness and/or interest in the issue is another possible line of enquiry. This could work at a single location, or be a comparative study between two locals with different levels of coastal risk (either flood or erosion).

GIS programs have in-built measurement tools that's allow the user to measure distances on a map. This could be calculated as an average rate between the two time periods on both maps (e.g., cm/year or cm/decade).

These can easily be linked to research using GIS for instance to establish a relative rate of coastal erosion, perhaps compared with a wider local average (**Figure 4**).

There are several factors that can alter the rates of coastal erosion risk which can be examined and researched. These include shoreline type, geomorphology of the coast, structure types along the shoreline, density of development, proximity to erosion inducing coastal structures, nature of the coastal topography, shoreline exposure to wind and waves (fetch and aspect), etc. This type of study could also be undertaken with reference to the information in Table 1 to undertake a cost benefit analysis.

Figure 5 gives an example of part of a questionnaire survey to establish how a group rate the most pressing risk issues where they live. Research for an NEA could also include link to shoreline management plans (SMPs) for instance, and how decisions made in these plans are understood or accepted by local residents. Does the knowledge and interest in local SMPs vary by age, gender, wealth, etc?

Interviews and focus groups examine at place change and identity at the coast

Coastal towns and cities are dynamic, not only from a physical geography point of view, but also from a population and identity perspective. Places might change over long periods of time due to the effects of immigration and second homes. Their identity may also change over a much shorter period of time – between summer and winter seasons, and even between day and night. Local residents can be an invaluable source of primary data. If it is possible to set up a meeting between several people then a structured interview or even focus group (see **Table 3**) this can be used to obtain information and attitudes about coastal change for different communities.

Figure 4 *Historic maps can be used to estimate rates of coastal erosion*

	Questionnaire	Extended Interview	Focus group
What is it?	Short series of questions	Lengthier discussion promoted via cues and 'big' questions	Informal meeting arrangement with open group discussion
Purpose?	Can be a variety of purposes, normally 'factual', e.g. distance travelled, preferences etc.	To find out about people's attitudes and opinions to developments, issues or proposals, changes etc.	Get deeper views of a issue and insight as to how views relate to each other through debates / discussion
Style of questions?	Closed questions, short with only – limited range of responses possible	Open-ended, lengthy allowing thoughtful responses	Generally, discussion but with clear focused areas to follow
Time?	Individually can be very short (< 2minutes), but have to collect a meaningful sample	Allow approximately 5-10 minutes per interview	Focus groups may last 30-60 minutes, depending on topic and format
Mode of delivery?	Generally on the street (face-to-face), could also be via telephone, website, mail or drop-and-collect	Informal or formal setting, could be anywhere, usually on the street, coffee shop, seated area where people are relaxed	Generally informal, e.g. place of work, study, residence. Interviewer acts as guest, ideally not a host
Things to note?	Structure questionnaire so that data can be handled statistically; watch sequencing of questions	How information is going to be recorded, e.g. video, transcribed; also how data might be analysed – e.g. coding	Difficulty is data analysis since a group of people create lots of information – think about sifting and sorting

Table 3 *The differences between interviews, focus groups and questionnaires*

Interviews offer a more in-depth or insightful opportunity to find out people's attitudes regarding a particular local problem or issue. These are very useful when investigating sensitive developments for example, such as a new housing scheme or community change which affects historical place identity. If an interview route is used then it is very important to establish a set of open questions or "cues" that can be used to create a structure for the discussion. **Figure 6** provides some examples in the form of two lists. Clearly this can be adapted in a variety of ways in order to relate to the focus of the study. It would also be a good idea to ask if the interview could be recorded (e.g. on a phone).

Conclusions

Traditional "physical" coastal projects have often been popular with students, but show varying degrees of success as it can be difficult to establish a process-landform-evidence link. The costal environment offers lots of potential other areas of fieldwork and research linked to the people-environment interactions as well as management and change. This factsheet has shown there is a wide range of possibilities, often linked and supported by original research. Success in this environment not only requires careful planning, but also an achievable and measurable focus on a small component of the coastal environment.

Further reading

FSC Coastal fieldwork website can be accessed here
https://www.geography-fieldwork.org/a-level/coasts/

Get online geodemographic (OAC) information from the CDRC website: https://maps.cdrc.ac.uk/

Blue Flag criteria for beaches http://www.blueflag.global/criteria/

Public Perceptions and Knowledge of Coastal Management on the Manhood Peninsula, West Sussex. 2010. Coastal Literacy Project. CoastNet.

Figure 6 *Extract from interview schedule about identity and community change in a small coastal town. In this instance, the survey is linked to the identification of differences through shopping attitudes and preferences*

A set of key questions...

not necessarily asked in the order listed. Possible follow-up questions are in blue in brackets.

- Tell me about your household's usual food shopping routine (Weekly frequency, time of day etc)
- Who normally does the food shopping in your household (Why? Why doesn't X or Y do it?)
- Why do you shop there or in those places? (When did you first start shopping there?)
- Does this coastal town offer a good range of products that you need? (What sort of types food are not available? How far do you need to travel to get a better choice?)
- Do you ever use special facilities, e.g. crèche/coffee shop/online goods collection? (If not why not?)

When you are writing up your research, you might use the following headings to collate your findings:

- Shopping routine
- Who shops and where/why
- Nature of shopping
- Shopping choice
- Facilities used