**A Level Geography Fieldwork**

All A Level Geography students (irrespective of exam board) are required to undertake at least four days of fieldwork. These days must be based both on physical and on human geography, and be spread across the course.

Geographical fieldwork is defined as applying specific geographical knowledge, understanding and skills to a particular and real out-of-classroom context.

Overall, this fieldwork will enable you to:

* undertake fieldwork in relation to processes in both physical and human geography, but the fieldwork which is part of the individual investigation may be either human, physical or integrated
* define research questions which underpin field investigations
* research relevant literature sources and understand and write up the theoretical or comparative context for a research question
* observe and record phenomena in the field and devise and justify practical approaches taken in the field including frequency/timing of observation, sampling, and data collection approaches
* demonstrate practical knowledge and understanding of field methodologies appropriate to the investigation of core human and physical processes
* implement chosen methodologies to collect data/information of good quality and relevant to the topic under investigation
* demonstrate knowledge and understanding of the techniques appropriate for analysing field data and information and for representing results, and show ability to select suitable quantitative or qualitative approaches and to apply them
* demonstrate the ability to interrogate and critically examine field data in order to comment on its accuracy and/or the extent to which it is representative, and use the experience to extend geographical understanding
* apply existing knowledge, theory and concepts to order and understand field observations
* show the ability to write up field results clearly and logically, using a range of presentation methods
* evaluate and reflect on fieldwork investigations, explain how the results relate to the wider context and show an understanding of the ethical dimensions of field research
* demonstrate the ability to write a coherent analysis of fieldwork findings in order to answer a specific geographical question and to do this drawing effectively on evidence and theory to make a well-argued case.

The exercises organised by the BWS Geography Department will provide you with a range of fieldwork activities, to give you opportunities to:

* pose geographical questions
* consider appropriate data collection methodologies, including due consideration of coding, timing and frequency
* design survey strategies, including sampling techniques.
* take measurements and surveys, including questionnaires, observations and interviews
* make images, including field sketches and photographs
* you might also obtain raw census material and information from GIS.
* consider appropriate methods of data / information presentation
* reflect on your fieldwork findings by processing data
* analyse patterns and trends and draw conclusions
* evaluate techniques and the various fieldwork activities.

This will help prepare you for undertaking your own independent investigation.

**The six stages of the enquiry process**

The enquiry process forms the framework for application of the fieldwork and geographical skills. Knowledge and understanding of the six stages will be developed overall through the fieldwork and each of the days undertaken may focus on some of the aspects of the six stages; all of the geographical skills involved in the enquiry process need not be undertaken on the fieldwork days. The aim should be to build by the end of the fieldwork a holistic understanding of the six stages.

|  |  |
| --- | --- |
| **Sequence and enquiry questions** | **Geographical skills** |
| 1. **Context and planning** – what is the geographical enquiry process? | Prepare to investigate a geographical question in the field; make and justify decisions on the task including data collection methods and how to use them; define and refine the research question(s) that underpin the context of the field investigation; risk and ethical issues |
| 1. **Data collection** – how is data and information (evidence) collected? | Acquire field data (primary) and relevant literature (secondary data / information) pertinent to the research question; implement chosen methodologies to observe and record in the field using quantitative and qualitative methods and field (primary) and secondary data / information; understand the theory / context for the research question. Justify practical approaches taken in the field, (including frequency/timing of observation, sampling, and data collection approaches) |
| 1. **Presentation and display** – how is the collected data and information presented? | Process a range of field and any relevant secondary data / information using quantitative and qualitative methods in order to lead to appropriate analysis |
| 1. **Analysis and interpretation of findings** – how can the evidence be analysed? | Interrogate (interpret and analyse) data / information from field (primary) data, and, as relevant, secondary data / information; describe patterns, trends, relationships; apply knowledge and understanding of geographical knowledge, concepts and processes and theory to specific evidence collected to understand field observations |
| 1. **Conclusion** – what conclusions can be drawn and how do these relate to the initial aim of the enquiry? | Synthesise findings to draw conclusions based on evidence and theoretical research |
| 1. **Evaluation of the whole investigation** – what evaluative techniques should be applied to the enquiry process? | Critically reflect on every stage of the whole investigation in order to appreciate the strengths and limitations of the primary and secondary data, links to original question; note strengths and limitations (accuracy, validity and reliability) and anomalies and / or errors or misuse of data; evaluate the methodology including, if relevant, sampling techniques; suggest improvements for further research |

**The place of geographical skills in the specification**

Geographical skills will be addressed in all components, not as a separate theme or topic. You will be introduced to a roughly equal balance of quantitative and qualitative skills across the specification as a whole, although the balance between the two will vary depending on the theme.

You are required to:

* understand the nature and use of different types of geographical information, including qualitative and quantitative, primary and secondary, images, factual text and discursive/creative material, digital data, numerical and spatial data and innovative forms of data, including crowd-sourced and 'big data'
* collect, analyse and interpret such information, and demonstrate the ability to understand and apply suitable analytical approaches for the different information types
* undertake informed and critical questioning of data sources, analytical methodologies, data reporting and presentation, including the ability to identify sources of error in data and to identify the misuse of data.

For qualitative data, you must demonstrate the following skills:

* use and understand a mixture of methodological approaches, including using interviews
* interpret and evaluate a range of source material including textual and visual sources
* understand the opportunities and limitations of qualitative techniques such as coding and sampling, and appreciate how they actively create particular geographical representations
* understand the ethical and socio-political implications of collecting, studying and representing geographical data about human communities.

For quantitative data, you must demonstrate the following skills:

* understand what makes data geographical and the geospatial technologies (e.g. GIS) that are used to collect, analyse and present geographical data
* demonstrate an ability to collect and to use digital, geo-located data, and to understand a range of approaches to the use and analysis of such data
* understand the purposes and difference between the following and be able to use them in appropriate contexts: descriptive statistics of central tendency and dispersion
* descriptive measures of difference and association, inferential statistics and the foundations of relational statistics, including (but not limited to) measures of correlation and lines of best fit on a scatter plot
* measurement, measurement errors, and sampling.

Further information about all of the above can be found in the specification on the website.

**Snowdonia, 2018**

During the 2 half-days and 2 full-days in Snowdonia you will conduct investigations into the following:

**Human Geography:**

Changing Places – in Blaenau Ffestiniog (1) and Betws-y-Coed (2)



**Physical Geography:**

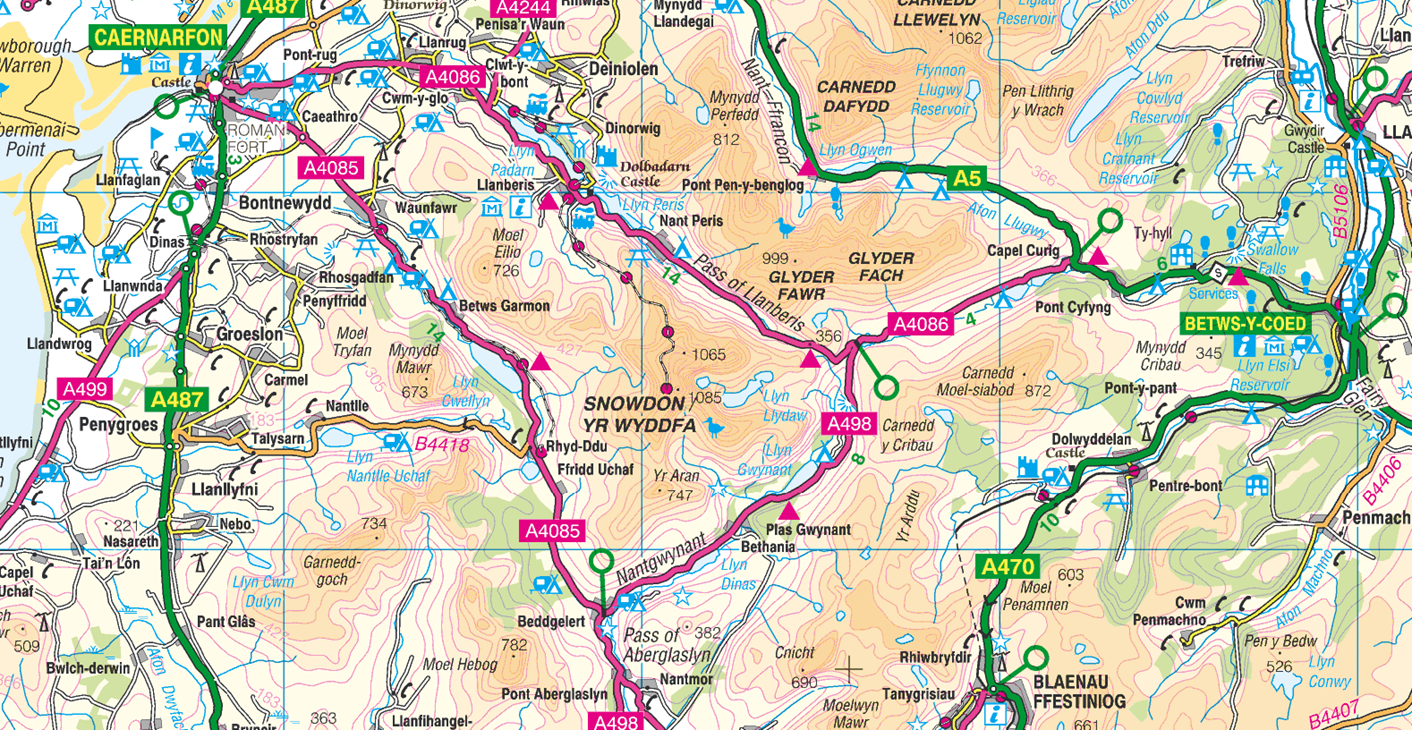
Glaciated Landscapes – around Llyn Llydaw on Snowdon (3):

Glacial deposition – identifying landforms in the field

Periglacial slope processes – scree development

Coastal Landscapes – coastal management at Dinas Dinlle (4)

Ecosystems at the Local Scale – sand dunes at Morfa Dinlle (4)



4

3

2

1

**Investigating Changing Places 1:**

***To what extent has rebranding been successful in Blaenau Ffestiniog?***

**Context:**

*Links to specification:*

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| ***Focus*** | ***Geographical Content:*** |
| *1.3.7 The rebranding process and players in rural places* | *Diversification in the post-productive countryside is achieved through re-imaging and regenerating rural places through recreation, heritage, media and event management that have been driven by local groups and external agencies*  *The consequences of rebranding on the perceptions, actions and behaviours of people, including those in other places who choose to relocate there, changes to businesses and the local community* |

*Specialised concepts:*

Adaptation, attachment, identity, representation, sustainability are all likely to be considered in this investigation.

*Location & background:*

It is c. 30km SE of Caernarfon and c. 15km NE of Porthmadog.

[*https://en.wikipedia.org/wiki/Blaenau\_Ffestiniog*](https://en.wikipedia.org/wiki/Blaenau_Ffestiniog) *(10/04/18): “Blaenau Ffestiniog is a historic mining town in Wales [in Gwynedd]… Although the town is in the centre of the Snowdonia National Park, the boundaries of the Park exclude the town and its substantial slate waste heaps… After reaching 12,000 at the peak of the slate industry, the population fell due to a decrease in the demand for slate [2011 population: 4875]. Blaenau Ffestiniog at one time was the second largest town in North Wales, behind Wrexham.*

*Today, the town relies heavily on tourists… [it] has several tourist attractions, including the Ffestiniog Railway and the Llechwedd Slate Caverns, a former slate mine open to visitors…[nearby] there are miles of mountain landscape with derelict quarries, rivers, various lakes and walking routes. Several new mountain biking trails have been installed… A kilometre-long zip-wire is also expected in the town soon. If plans go ahead Blaenau Ffestiniog will have the UK's first vélo-rail, which are popular in France… The town centre has a number of cafes and traditional pubs.*

*…[The] town centre has recently been regenerated. With funding from various organisations, grants and the Welsh Government, £4.5 million will be spent on redeveloping the town centre. A new bus station has been built along with new viewing areas for the neighbouring mountain ranges. Several slate structures have also been built with poetry engraved on them. The structures are roughly 40 feet tall and are intended to visually echo the towering slate hills and mountains. Poetry and local sayings have also been engraved on slate bands set into the pavements throughout the town centre.”*

[*http://www.blaenauffestiniog.org/town-centre.html*](http://www.blaenauffestiniog.org/town-centre.html) *(10/04/18) “The Town Centre is being re-developed to improve how the town functions as a destination, work involves creating entrance gateways, celebrating the very best local materials and supporting shops with grants of up to 75% to improve their shop fronts… Blaenau Ymlaen [a voluntary group to bring various regeneration groups and plans together], Cyngor Gwynedd and the Welsh Government were successful in obtaining European ERDF funds… We have a significant amount of empty shops. The area’s population is reducing 2.5% every year with a lot of people moving away to work. The project links into the Antur Stiniog scheme to develop outdoor activities in the area. We also need to make the most of the visitors who arrive in Blaenau but return to Porthmadog without visiting the town.”*

[*http://www.blaenauffestiniog.org/outdoor-activities.html*](http://www.blaenauffestiniog.org/outdoor-activities.html) *(10/04/18) “The people of Ffestiniog have decided, the post-industrial landscape can be regenerated, and turned into something that the community could continue to be proud of for many more generations. And thus, Antur Stiniog is born … [it] is a social enterprise tasked with not just putting the landscape to good use, but also with training local people to become outdoor activity guides, so that they may find - or even create - employment in an area that has been hard-hit by economic woes in recent decades…in towns like Blaenau Ffestiniog, where the community works as one body… the challenge of reinvention and regeneration is an opportunity not to be missed.”*

*Theoretical considerations:*

From reading the above, it’s clear that the settlement has been affected by economic change and is now part of the ‘post-productive countryside’. Primary employment (slate quarrying/mining) has disappeared, but has left significant marks on the landscape and these are being used to re-image/rebrand the area for tourism (‘recreation’ & ‘heritage’). Local, national and supranational ‘players’ are involved in its regeneration…but to what extent have these attempts affected the built environment, residents and businesses in the area?

What can re-imaging/rebranding involve? How has it been attempted elsewhere? What impacts might it have on landscapes and communities? Your notes on this section of the course should provide some answers and possibly examples to compare against Blaenau. It is important that you are able to set your investigation into a sound geographical context.

*Risk assessment:*

What risks might there be in collecting data in a settlement? How can these risks be mitigated? What ethical considerations might need to be considered, too?

**Method:**

Data needs to be collected to identify the following:

* What changes have been made to the built environment as a result of re-imaging/rebranding?
* What role do the different players have in the re-imaging/rebranding process?
* How significant have their roles been?
* How have people and businesses been affected?
* How big an impact has this had on the place?

Collecting quantitative and qualitative evidence of rebranding is therefore critical. Comparing old/new or before/after data will be another important way to make judgements. What preparative work (e.g. additional research) will be needed before undertaking the fieldwork?

How can you find out about the roles played by the different groups involved in the re-imaging/rebranding process? Is this likely to be primary or secondary data? What can you infer from the fact that Blaenau Ffestiniog has a website?

Look for comments made in your background research to provide possible areas for investigation/comparison (e.g. ‘empty shops’ and reference to population decline).

What evidence would help you to make a judgement about the impact on businesses?

Finding out the impacts on people will need questionnaires. What questions would be helpful? What needs to be considered to ensure data collected is: useful, accurate, manageable, reliable, representative? One of the inherent difficulties with questionnaires is finding enough people to answer your questions – so it’s a good idea to have a Plan B if you’re struggling!

Think about how you might determine the scale of the impacts: spatial, over time (short- and long-term), impacts on different groups are probably the most important ones to consider for this investigation.

What type of sampling will you use?

**Data Presentation and Analysis:**

Before collecting data, you need to have a good idea of what you’re going to do with it – so you have data in a usable form that will help you address the research question.

In this case, mapping data will enable you to judge the spatial extent of the impacts…but how will you process the raw data?

Graphical representation of your questionnaire data is likely – but what types?

Are there opportunities for statistical analysis? If so, what? How useful might these calculations be?

How will you use any secondary data you have collected?

**Investigating Changing Places 2:**

***How important is tourism to Betws-y-Coed?***

**Context:**

*Links to specification:*

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| --- | --- |
| ***Focus*** | ***Geographical Content:*** |
| 1.3.1 Changing place; changing places – relationships and connections | The demographic, socio-economic and cultural characteristics of places as exemplified by the 'home' place (this may be a locality, neighbourhood or a small community) and at least one further contrasting place  Factors (shifting flows of and connections between people, resources, money and investment and ideas) that have shaped and continue to shape the characteristics of place at all scales from local to global, including MNC fast food chains  The way in which continuity and change of these local to global factors affect learner's own lives and the lives of others |
| NB. There will be links to some other areas of this unit, too, e.g. 1.3.2 | |

*Specialised concepts:*

Adaptation, attachment, identity, interdependence, globalisation, representation, thresholds are all likely to be considered in this investigation.

*Location & background:*

It is c. 25km SE of Bangor and c. 20km S of Conwy.

<http://www.betws-y-coed.com/> (10/04/18) “Set in a beautiful valley in the Snowdonia Forest Park, it is ideal for outdoor activity holidays. Numerous Craft and outdoor activity shops are in the village with the popular Swallow Falls nearby…Betws-y-Coed is North Wales’ most popular inland resort and accommodation provider. It is where the River Conwy meets its three tributaries flowing from the West, the Llugwy, the Lledr and the Machno. Much of it was built in Victorian times and it is the principal village of the Snowdonia National Park… The local economy was based on agriculture, and in the 19th century slate quarrying and woollen mills were developed. The slate quarries are now shut down, but agriculture continues to be the mainstay of the economy along with tourism which developed in Victorian times.”

<https://en.wikipedia.org/wiki/Betws-y-Coed> (10/04/18) 2011 population: 564

<https://www.visitbetwsycoed.co.uk/> (10/04/18) “Welcome to Betws-y-Coed, the gateway to Snowdonia and the neighbouring towns and villages. This magical setting has a distinctly Alpine feel enhanced by the dense Gwydyr Forest surrounding Betws-y-Coed…There is a huge choice of accommodation to suit all needs…Eat locally sourced and award-winning food and drink in the diverse range of cafés, bistros, restaurants and pubs. Browse our independent shops retailing in crafts, clothing, gifts, and local homemade produce. Visit our collection of outdoor gear shops and art galleries displaying talented Welsh artists…Breathe the fresh air; enjoy walking one of the many trails around the village, bike on a huge range or mountain biking trails, take in the history and culture of one of North Wales' many castles and take on the challenge hiking in the mountains and seeing the splendour of Snowdonia's natural beauty. There is something for everyone in this diverse area.

This website is partially funded by the Conwy Rural Partnership Rural Development Plan.”

*Theoretical considerations:*

From reading the above, it’s clear that tourism is important to the local economy…but how important, compared to agriculture? Is Betws-y-Coed also part of the post-productive countryside? To what extent does tourism here rely on outside agencies, rather than local ones? To what extent have different factors, from local to global, shaped the settlement and affected the people here?

How can such factors affect places and people? What examples have you from your class notes? It is important that you are able to set your investigation into a sound geographical context.

This could be an interesting contrast to your ‘home’ place.

*Risk assessment:*

What risks might there be in collecting data in a settlement? How can these risks be mitigated? What ethical considerations might need to be considered, too?

**Method:**

Data needs to be collected to identify the following:

* The degree to which services are influenced by tourism
* The influence of national/global players compared to local ones
* The importance of other aspects of the economy, e.g. agriculture

Collecting quantitative and qualitative evidence relating to the economy is therefore critical – so service surveys will be important. How will you be able to objectively determine the extent to which tourism is affecting the type of services here? Coding of services will help make patterns clearer – but is this something to do in the field? Coding simplifies the information, but can also obscure small differences. What preparative work (e.g. additional research) will be needed before undertaking the fieldwork?

Look for comments made in your background research to provide possible areas for investigation/comparison (e.g. ‘independent shops’).

How will you determine how the community has been ‘shaped’ by different factors? Change over time is probably an important consideration here…

Secondary data can be important here and there are some useful details in both of the Betws-y-Coed websites referred to above.

You will also need information from both residents and visitors through questionnaires. What questions would be helpful in determining the importance of tourism, and of the role of different factors in shaping the community? What needs to be considered to ensure data collected is: useful, accurate, manageable, reliable, representative? Again, there’s the issue of finding enough people to answer your questions – so make sure you have a Plan B. Being a honeypot site, you might expect there to be plenty of visitors (midweek?) but if it’s busy, how willing do you think shop workers will be to answer your questions?

**Data Presentation and Analysis:**

Careful consideration of the data form/quantity is, as always, crucial in being able to successfully address your research question.

In this case, mapping data will enable you to judge the degree to which services are influenced by tourism, though graphical may be (more?) useful. You’ll need to present your questionnaire data using graphs, too – but what types?

Are there opportunities for statistical analysis? If so, what? How useful might these calculations be?

How can you incorporate qualitative data into your investigation?

**Investigating Glaciated Landscapes 1:**

***Are the depositional landforms around Llyn Llydaw mainly lodgement or ablation in origin?***

**Context:**

*Links to specification:*

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| ***Focus*** | ***Geographical Content:*** |
| 1.2.6 Processes of glacial and fluvioglacial transport and glacial and fluvioglacial deposition and the characteristics and the formation of associated landforms and landscapes | Landforms and landscapes of glacial deposition including types of till (ablation, lodgement and deformation) and types of moraine (terminal, recessional, lateral, medial and push) and drumlins |

*Specialised concepts:*

Causality is the main one relevant to this investigation.

*Location & background:*

<https://en.wikipedia.org/wiki/Llyn_Llydaw> (10/04/18) “Llyn Llydaw is a natural lake in Snowdonia National Park on the flanks of Snowdon, Wales' highest mountain. This long thin lake has formed in a cwm about one-third of the way up the mountain.”

<https://en.wikipedia.org/wiki/Snowdon> (10/04/18) “The rocks that form Snowdon were produced by volcanoes in the Ordovician period, and the massif has been extensively sculpted by glaciation, forming the pyramidal peak of Snowdon and the arêtes of Crib Goch and Y Lliwedd.”

This area would last have seen significant bodies of ice during the Loch Lomond stadial (c. 11,000 yrs ago) but would have been ice-free by about 10,000 years ago. There are many eroded rock surfaces that are striated, as well as depositional features varying from irregular mounds to more ridge-like features.

*Theoretical considerations:*

Having been taught this part of Component 1, you should have a good knowledge and understanding of glacially deposited features – especially the characteristics of lodgement and ablation till landforms: shape and orientation in relation ice-flow; degree of sorting, orientation (particle fabric) and angularity of clasts.

What would help you to distinguish between landforms that were the result of lodgement and those resulting from ablation?

*Risk assessment:*

What risks might there be in collecting data in this area? How can these risks be mitigated? What ethical considerations might need to be considered, too?

**Method:**

Data needs to be collected to identify the following:

* The appearance of different depositional landforms in this area
* Sediment analysis (aka till fabric analysis) of different depositional landforms in order to establish the size distribution of clasts, their angularity and the particle fabric
* Ice flow direction in this area

Both quantitative and qualitative data need to be collected – the use of images will be very helpful for this investigation.

Locating and recording ice-flow direction evidence will be critical – what equipment will you need for this?

You will need to devise a suitable sampling technique for the sediment analysis – what equipment will you need and how much data will need to be collected?

What techniques could be used to measure angularity and sediment size?

**Data Presentation and Analysis:**

Before collecting data, you need to have a good idea of what you’re going to do with it – so you have data in a usable form that will help you address the research question.

Mapping will help determine ice flow directions in relation the landforms and their sediment.

Simple descriptive statistics could be used to determine the distribution of sediment size/angularity. What would be appropriate techniques?

Graphical techniques could also be used for particle fabric analysis and size distribution – what might be appropriate methods?

**Investigating Glaciated Landscapes 2:**

***To what extent is the scree material at Llyn Llydaw larger at the bottom?***

**Context:**

*Links to specification:*

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| ***Focus*** | ***Geographical Content:*** |
| 1.2.8 Periglacial processes and the formation of associated features | Frost weathering and mass movement can lead to features including nivation hollows, blockfields and scree slopes, pro-talus ramparts, solifluction terraces and head deposits |

*Specialised concepts:*

Causality is the main one relevant to this investigation.

*Location & background:*

See above for details about this location.

*Theoretical considerations:*

Having been taught this part of Component 1, you should have a good knowledge and understanding of periglacial processes, especially those relating to the development of scree slopes.

What characteristics do scree slopes have? Why might you expect there to be a difference between the size of clasts at the top of the scree slope and those at the bottom?

*Risk assessment:*

What risks might there be in collecting data in this area and on a scree slope? How can these risks be mitigated? What ethical considerations might need to be considered, too?

**Method:**

Data needs to be collected to identify the following:

* Clast sizes at the top and bottom of the scree slope(s)

Data in this investigation is likely to largely quantitative but qualitative evidence of the nature of the scree slope would also be helpful in giving context to your analysis and interpretation.

A suitable sampling strategy will be needed.

How will the size of clasts be measured? What equipment will be needed? How can you ensure the data collected is reliable and accurate?

**Data Presentation and Analysis:**

The key to this investigation is about being able to accurately and reliably compare data from the top and bottom of the scree slope(s) – so choose techniques that permit this.

Graphical techniques can be used to compare the distribution of clast sizes at top and bottom – what would be appropriate?

There are useful statistical techniques to aid analysis, too: Mann Whitney u and Chi-squared would be appropriate here.

**Investigating Coastal Landscapes:**

***To what extent has management affected coastal processes at Dinas Dinlle?***

**Context:**

*Links to specification:*

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| ***Focus*** | ***Geographical Content:*** |
| 1.1.6 Processes of coastal transport and deposition and the characteristics and the formation of associated landforms and landscapes | Processes of coastal transport of solution, suspension, saltation and traction including longshore drift  Processes of coastal deposition result from reduced energy levels including flocculation and sediment sorting  Characteristics of coastal landforms and landscapes both for and beyond the UK including beaches, spits, bars, tombolos and cuspate forelands |
| 1.1.10 The impact of human activity on coastal landscape systems | Positive impacts of human activity on coastal processes and landforms including management and conservation  Negative impacts of human activity on coastal processes and landforms including offshore dredging and erosion of sand dunes |

*Specialised concepts:*

Causality, feedback, interdependence are all likely to be considered in this investigation.

*Location & background:*

The beach is in Caernarfon Bay on the Irish Sea coast, c. 7km S of Caernarfon. The beach extends northwards forming the spit Morfa Dinlle on which there are extensive coastal dunes.

<https://en.wikipedia.org/wiki/Dinas_Dinlle> (10/04/18) “Dinas Dinlle has a large sand and pebble beach with vast areas of sand from mid-tide level. The foreshore consists of natural pebble banks… The erosion by the sea is a substantial problem. A groyne built in 1994 to alleviate the problem was thought to be a mistake that had made the situation worse by 2013. The height of the groyne was to be reduced and the large boulders removed. This was important to preserve the beach and the Wales Coast Path.”

<http://jncc.defra.gov.uk/pdf/GCRDB/GCRsiteaccount1885c11.pdf> (10/04/18) contains a detailed description of the area (including Morfa Dinlle) and its probable formation during the Holocene. Understanding where the sediment has come from that forms the beach and sand dunes is important in considering the role (and impact) of coastal processes.

Information about the management strategies can be found by searching the BBC News website but the *West of Wales Shoreline Management Plan 2 Section 4. Coastal Area F* ([www.westofwalessmp.org/objview.asp?object\_id=506](http://www.westofwalessmp.org/objview.asp?object_id=506) (10/04/18)) offers a more precise and detailed account.

*Theoretical considerations:*

Although this option was not taught as part of the Changing Landscapes section of Component 1, you probably have some prior knowledge of coastal processes, landforms and management strategies. However, you would be expected to have a more in-depth knowledge than for GCSE.

Coastal processes and their impacts on beach sediments need to be well understood…and properly referenced showing you have undertaken A Level-standard background reading – this could involve some discussion of the role of sediment cells. How coastal management (in general) might have an impact on these processes and landforms also needs to be well understood. This will enable you to make predictions (hypotheses) about what differences you might expect to see between managed and unmanaged areas of the beach.

Again, look for clues in the research to help give your investigation a degree of focus (e.g. ‘A groyne built in 1994…was thought to … [have] made the situation worse.’).

*Risk assessment:*

What risks might there be in collecting data on a beach? How can these risks be mitigated? What ethical considerations might need to be considered, too?

**Method:**

Data needs to be collected to identify the following:

* Characteristics of the beach in the area where management is present and where there is no management – in order to permit comparison of the impacts:
  + Clast size and roundness
  + Beach width and profile/gradient
* Evidence of coastal transport processes, especially longshore drift
* Evidence of the management technique(s) used here

Sediment analysis techniques used in the Glaciated Landscapes fieldwork could be replicated here, but you will need different sampling techniques. If you have done beach investigations before, what did you do? How effective was this technique? If you haven’t, what are standard techniques for this? Careful consideration regarding where measurements should be taken is also needed.

Beach profiling can be done in a number of different ways, so you need to consider how you want to use the data. A more detailed approach will allow you to draw scale drawings of the profile but will be more time-consuming, whereas simpler measures of beach angle would be quicker but can be processed in a more limited fashion. In either case, care needs to be exercised to ensure the slopes are measured accurately. What precautions can be taken?

Longshore drift direction can be inferred from other evidence but it is usually better to measure it directly to avoid the issue of a circular argument (i.e. where your proposition is supported by the premise, which is supported by the proposition… e.g. witches float on water, therefore if she floats on water, she’s a witch). Again, you may have done this at GCSE, but if not there are some standard methods. How detailed does your measurement need to be? Is direction enough, or do you also need to know the speed? How many times do you need to take measurements along the sections of beach?

The above will produce quantitative data – qualitative data will be in the form of evidence of management techniques and ?

**Data Presentation and Analysis:**

It’s already been noted that you need to think about what you want to do with the data before you collect it, so consider what graphical, cartographical and statistical techniques would be helpful in this investigation. The key here is about comparing characteristics in the managed area with those in the unmanaged area, so choose techniques that permit this – and think about how best to arrange the data presentation to highlight any similarities/differences.

**Investigating Ecosystems at the Local Scale:**

***How typical a psammosere are the dunes at Morfa Dinlle?***

**Context:**

*Links to specification:*

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| --- | --- |
| ***Focus*** | ***Geographical Content:*** |
| 3.2.5 Ecosystems at a local scale | Succession of one ecosystem  The arresting role of physical factors in creating subclimax communities  Role of human factors in maintaining plagioclimax communities |
| There’s also a link to the role of aeolian (wind) processes in sand dune development in 1.1.7 | |

*Specialised concepts:*

Adaptation, causality, equilibrium & feedback, systems are all likely to be considered in this investigation.

*Location & background:*

See above for details about this location (which is to the north of the beach at Dinas Dinlle)

*Theoretical considerations:*

The concepts of succession, subclimax and plagioclimax have been taught as part of the Component 3 course, as has the development of (coastal) sand dunes – so you should have good knowledge and understanding of these ideas as well as what to expect from a ‘typical’ psammosere found in the UK. These will all be useful in giving you ideas of what to investigate and what comparisons can be made.

The concepts of subclimax and plagioclimax *may* be helpful in explaining any differences you observe between the dunes at Morfa Dinlle and a ‘typical’ psammosere.

*Risk assessment:*

What risks might there be in collecting data on a sand dune? How can these risks be mitigated? What ethical considerations might need to be considered, too?

**Method:**

Data needs to be collected to identify the following:

* A profile of the dunes from strand line in-land as far as possible
* Vegetation characteristics e.g. species (number/type), % cover (total veg/key spp)
* Soil characteristics – ideally this would include soil moisture and organic content but as these both involve lab-work pH and colour will have to suffice here!
* Wind speeds (possibly)

The above includes both quantitative and qualitative data: which is which?

*Sand dune succession is a fairly common investigation, so an internet search will provide some ideas to help in your planning.*

In this investigation data will be collected along a transect (survey line) but you will need to devise a suitable sampling strategy. Dune profiling can be done using the same technique as beach profiling (if used at Dinas Dinlle).

What equipment will you need for the vegetation sampling, soil characteristics and wind speeds (if measuring)?

What precautions will be needed to ensure data is accurate, reliable and representative?

**Data Presentation and Analysis:**

Before collecting data, you need to have a good idea of what you’re going to do with it. In this case, success depends on being able to link all the data together along the transect so that changes can be seen easily, and relationships between different data are clear (e.g. pH and spp)

Kite diagrams are a standard technique for presenting spp variation along a transect. What are they and how will data need to be collected to permit their use in this investigation?

Depending on the nature of some of your data, you may be able to use statistical analysis to test for correlation.

How can you incorporate qualitative data into your investigation?