Assignment instructions

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## Assignment instructions vs assignment brief

These instructions for the assignment provide *specific* guidance on how to complete the report that is required for assessment purposes for the unit. The **assigment brief** forms a more generic outline of the work expected. The brief was written prior to field work being completed. Full details are now available with respect to the specific nature of the data collected. Because the field work was rather more focussed on questions of management concern there may possibly be some minor differences of interpretation between these instructions and the original, more generic assignment brief. If in any doubt, **follow these instructions** .

## Data set 1: Quantifying the impact of development at Hengistubry head

The write up for this analysis should be in the style of a consultancy report. You have already produced a phase one map of the habitat around an area where a new classroom will be built at Hengistbury head. An independent environmental impact report has been produced as part of the planning process. However this document, which you have access to and may cite, lacks any quantitative detail and it does not really include any spatially explicit analysis. You should therefore undertake the following steps in GIS in order to enhance the level of quantitative detail that could be used in an impact assessment.

1. Digitise polygons and lines representing the classroom and its access paths. As this is a training exercise, not a genuine consultancy, you may use your own judgement rather than the formal plans when producing this particular GIS layer.
2. Use geoprocessing (differencing operations) to remove the impacted habitat from your original phase one map. You will be given some guidance regarding the implementation of this step during a practical session.
3. Calculate the extent of change in terms of lost area for each habitat. Present the results clearly in the form of tables and/or annotated maps.
4. Look into the broader implications of the proposed development. Produce a map that illustrates the change in the context of the whole reserve.
5. Write up your results in the context of guiding future management of the reserve. You may take into consideration factors such as changes in visitor numbers and the visual impact of the proposed. development.
6. Ensure that the report is concise and clear. The purpose of the exercise in the context of evaluating the ILOs for the unit is to provide a real life context within which you can apply the GIS skills that you have learned. You can, and should, work together as a group on the analysis. However you should ensure that your submitted individual report emphasises some unique aspect of the issue and that it is expressed in a distinct manner.

## Data set 2: Ecological factors influencing the dynamics of pine regeneration in lowland heathland

The second analysis also will include information of potential utility for reserve management. However this report should emphasise ecological processes and it should follow the style of a short scientific paper as advised on the assignment brief. The steps for your write up are:

1. Produce maps showing the site and the sampling points used in the survey.
2. Use basic statistical methods in R to summarise and describe the data that was collected on the field trip in the form of additional maps, tables and/or figures. You will be provided with guidance and some relevant R code for implementing this step in the practicals. You should decide on the most relevant and informative aspects of this analysis to include in the report.
3. Analyse the relationships between the density of pine regeneration in your quadrats and environmental factors derived from GIS such as slope, insolation, wetness index and distance from seed source. Present the results using formal statistical analysis. Again, help with implementing these steps will be provided. You should concentrate on presenting the results in a formal style and interpreting the results correctly.
4. Also look at additional relationships between the diameter of pine saplings, age and height. Interpret these relationships in the context of rate of regrowth.
5. Write up your summary report making sure to terminate your introduction section with a clear statement of aims. The broad objective of the study should be broken down into a series of discrete questions. Each of these questions should then be addressed, and answered by analysis included in the results section.
6. In your discussion you should embed your results within the broader context of general management of lowland heath in Southern England. However you may also discuss the specific implications for site management at Arne briefly. You may wish to consider how frequently pine pulling may have to be undertaken and whether any other management options are available.
7. Include any analysis that you consider may be useful as explanation of the methods chosen but not strictly relevant to answering the research questions as an appendix.
8. Further guidance and R scripts will be provided in practical sessions which will ensure that all ideas for analysis can be implemented. Once again, group work and group discussions are considered to be an integral part of the work and will be considered as matching ILOs. However you must submit an original report expressed in your own manner for final assessment.