Cranedale Centre

CHALKLAND SUCCESSION

Abstract
Succession is innovatively managed by at Wharram Quarry by Yorkshire Wildlife Trust (YWT) scraping areas back to bare chalk. Fieldwork involves studying changes to soil, microclimate, vegetation and invertebrates at five discrete seral stages spanning fifty years. Each seral stage has a 'cryptic' label, so that students are required to sequence their results following data collection

Aim

- To investigate ecosystem changes associated with primary succession on chalk

Learning Objectives:

- To grasp the long timescales required for succession to take place.
- To become familiar with the usage and meaning of the common terms: succession, pioneers, climax, plagioclimax, seral stage
- To understand the factors that control the rate of succession and the eventual climax community
- To establish the correct chronological sequence of 'cryptic' seral stages at Wharram Quarry by recognising the trends in primary field data
- To experience the use of randomly placed point frames to record the percentage frequency of plants
- To understand that conservation of chalk grassland is distinct from preservation since it involves management of succession

Learning Outcomes:

- To define the ecological terms used in a succession study
- To identify how the chalk bedrock influences the properties of soil
- To distinguish primary succession from secondary succession
- To predict how abiotic and biotic conditions change over time as a result of succession
- To identify the techniques used by YWT to manage succession at Wharram Quarry
- To interpret the trends in primary data relating to the soil, microclimate, plants and invertebrates, and relate these to hypotheses
- To understand why highest species richness is often not at the climax community
- To evaluate the use of percentage frequency as a measure of plant abundance
- Where appropriate, to explain unpredicted trends in the data
- To select and justify the use of an appropriate statistical test
- To evaluate the limitations in equipment and methods used in data collection