

ECOSYSTEMS UNDER STRESS (OPTION)

3.1.6.1 ECOSYSTEMS AND SUSTAINABILITY	R	A	G
The concept of biodiversity. Local and global trends in biodiversity			
Causes, rates and potential impacts of declining biodiversity			
Ecosystems and their importance for human populations in the light of continuing population growth and economic development. Human populations in ecosystem development and sustainability			
3.1.6.2 ECOSYSTEMS AND PROCESSES	R	A	G
Nature of ecosystems – their structure, energy flows, trophic levels, food chains and food webs			
Application of systems concepts to ecosystems – inputs, outputs, stores and transfers of energy and materials. Concepts of biomass and net primary production			
Concepts of succession: seral stages, climatic climax, sub-climax and plagio-climax			
Mineral nutrient cycling			
Nature of terrestrial ecosystems and the interconnections between climate, vegetation, soil and topography which produce them. Ecosystem responses to changes in one or more of their components or environmental controls			
Factors influencing the changing of ecosystems, including climate change and human exploitation of the global environment			
3.1.6.3 BIOMES	R	A	G
The concept of the biome. The global distribution of major terrestrial biomes			
The nature of tropical rainforest: <ul style="list-style-type: none"> • the main characteristics • ecological responses to the climate, soil and soil moisture budget (adaptations by flora and fauna) • human activity and its impact • typical development issues in the biome to include changes in population, economic development, agricultural extension and intensification, implications for biodiversity and sustainability 			
The nature of savanna grassland: <ul style="list-style-type: none"> • the main characteristics • ecological responses to the climate, soil and soil moisture budget (adaptations by flora and fauna) • human activity and its impact • typical development issues in the biome to include changes in population, economic development, agricultural extension and intensification, implications for biodiversity and sustainability 			

3.1.6.4 ECOSYSTEMS IN THE BRITISH ISLES OVER TIME	R	A	G
Succession and climate climax as illustrated by lithoseres and hydroseres			
The characteristics of the climatic climax: temperate deciduous woodland biome			
The effects of human activity on succession – illustrated by one plagioclimax such as heather moorland			
3.1.6.5 MARINE ECOSYSTEMS	R	A	G
The distribution and main characteristics of coral reef ecosystems. Environmental conditions associated with reef development.			
With reference to a named, located coral reef: factors in the health and survival of reefs: <ul style="list-style-type: none"> • natural: water temperature, acidity, salinity, algal blooms • human activity and impact: major drainage basin schemes, onshore development, desalination, pollution, tourism, fishing • future prospects for coral reefs 			
3.1.6.6 LOCAL ECOSYSTEMS	R	A	G
The main characteristics of a distinctive local ecosystem (such as an area of heathland, managed parkland, pond, dune system). Ecological responses to the climate, soil and soil moisture budget (adaptations of flora and fauna)			
Local factors in ecological development and change (such as agriculture, urban change, the planned and unplanned introduction of a new species)			
The impacts of change and measures to manage these impacts. Conservation strategies and their implementation in specific settings			
3.1.6.7 CASE STUDIES	R	A	G
Case study of a specified region experiencing ecological change to illustrate and analyse the nature of the change and the reasons for it			
Case study of a specified region experiencing ecological change to illustrate and analyse how the economic, social and political character of its community reflects its ecological setting and how the community is responding to change			
Case study of a specified ecosystem at a local scale to illustrate and analyse key themes set out above, including the nature and properties of the ecosystem and human impact upon it			
Case study of a specified ecosystem at a local scale to illustrate and analyse key themes set out above, including the challenges and opportunities presented in its sustainable development			