**A2 REVISION OUTLINE: ECOSYSTEMS: CHANGE AND CHALLENGE**

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| **Topic Area** | **Detail** | **Examples** | **Tick** |
| **THE NATURE OF ECOSYSTEMS** | Structure of ecosystems, energy flows, trophic levels,  food chains and food webs, NPP  Nutrient cycles (Gersmehl dgs) , hydrological cycle , soil moisture budget |  |  |
| **CHANGE OVER TIME** | Succession and climatic climax: illustrated by one of  lithosere, psammosere, hydrosere or halosere. | **Focus on UK examples**  Sand Dunes (choose one case study) |  |
|  | The effects of human activity on succession –  illustrated by one plagioclimax such as a heather  moorland. |  |  |
| **WORLD BIOMES** | Definition, location of main world biomes,  (compare NPP/Biomass/Temperature & Precipitation)) |  |  |
| **Tropical rainforest** | The main characteristics of the biome (biotic and abiotic)  (recognise variation within the biome eg TRF, heath forest, peat swamp forest, mangroves, montane forest)  Ecological responses to the climate and soil moisture  budget – **adaptations by vegetation and animals.** | Borneo:  Climate figures ((Temp/Precip)  Latosol characteristics  Soil moisture budget  NPP/Biomass/Biodiversity  Specific plant and animal species (and how they are adapted to a TRF environment) |  |
|  | Human activity and its impact on the biome.  Development issues in the biome to include aspects  of biodiversity and the potential for sustainability.  (Include ‘Eco-system services’) | Borneo:  Impact of shifting cultivation, timber industry, palm oil plantations, HEP.  Eco-tourism, Rattan Industry, Gaharu, Bio-technology |  |
|  | The relationships between human activity, biodiversity  and sustainability  The management of fragile environments  (conservation versus exploitation): two contrasting  case studies of recent (within the last 30 years)  management schemes in fragile environments should  be undertaken. | Kinabatangan Sabah (Corridor of Life)  Heart of Borneo Initiative (including Badas Forest Reserve)  Sundaraban (Bangladesh) |  |
| **Temperate Deciduous Forest** | The main characteristics of the biome. (Biotic and abiotic)  Ecological responses to climate.  Compare with tropical rainforest biome | UK |  |
| **Ecosystem issues on a local scale** | Changes in ecosystems resulting from urbanisation. | Singapore |  |
|  | Development of distinctive ecologies along routeways  (eg roads and railways). | Brunei |  |
|  | The planned and unplanned  introduction of new species and the impact of this on  ecosystems. | Acacia (Sub-climax Brunei)  Black Bass (Guatemala) |  |
|  | Urban niches. Colonisation of wasteland: | London / Brunei |  |
|  | Ecological conservation areas. **One** case study  should be undertaken. | Fort Canning Park (Singapore) |  |
|  | Changes in the rural/urban fringe. | Rimba, JIS |  |

**Learn key terms (see relevant pages in textbook and glossary at the back)**

**Learn key diagrams**

**Learn facts and figures from key case studies**

**Look at examples of past questions and prepare outlines for answers.**

YOU MUST BE ABLE TO **APPLY YOUR UNDERSTANDING** ABOUT ECOSYSTEMS