SUCCESSION AND HABITAT CONSERVATION END OF TOPIC QUESTIONS

1. **Heather plants are small shrubs. Heather plants are the dominant species in the climax community of some moorlands. The structure and shape of a heather plant changes as it ages. This results in changes in the species composition of the community. A large area of moorland was burnt leaving bare ground. The table shows four stages of succession in this area.**
2. **Explain what it meant by succession**

change in community over time either due to environmental/abiotic factors or conditions change due to species present

1. **Explain what is meant by a climax community**

Stable final community with no further succession

1. **Explain why the number of other plant species decreases between 4 and 12 years after burning**

increased interspecific competition for light / nutrients / named nutrient / water

1. **The rate at which heather plant produced new biomass was measured in g per kg of heather plant per year. This rate decreased as the plant aged. Use the information given above to explain why.**

fewer or shading of leaves leads to less photosynthesis to produce new biomass. The ratio of leaves to woody parts and roots decreases so higher respiration relative to photosynthesis. competition with other species for nitrates leading to reduced synthesis of protein or named compound. Overall, The diagram clearly shows a decrease in the number of leaves and therefore a decrease in photosynthesis. However, respiratory demand in the plant remains high. This results in less net productivity. Interspecific competition for nutrients could also reduce increase in biomass.

1. **Attempts are being made to conserve the natterjack toad, which breeds in ponds. A number of recommendation have been made about how to do this. Some of these are shown in the table, together with a reason for each one.**
2. **Explain 2 ways in which these recommendations could reduce populations of animals other than common toads.**

reduction in insect predators from ponds, because ponds kept shallow. reduction in animals that are adapted to living at pH outside 5−7, because lime added. reduction in species that feed on or live on trees / shrubs, because these are removed, eaten by sheep / rabbits

1. **Most of the UK populations of natterjack toads are found on sand dune systems. The communities of plants and animals on such systems usually change over time as a result of succession. Explain how the natterjack conservation recommendations could affect succession in a sand dune system**

conservation measures tend to stop this to keep communities the same. adding lime stops abiotic change / pH change so no climax community. sheep / rabbits prevent growth of shrubs / trees