CONSERVATION

Conservation is the protection, preservation, management, or restoration of wildlife and natural resources such as forests and water. Through the conservation of biodiversity the survival of many species and habitats which are threatened due to human activities can be ensured. Other reasons for conserving biodiversity include securing valuable Natural Resources for future generations and protecting the well being of eco-system functions.

In-situ and ex-situ conservation

Conservation can broadly be divided into two types:

In-situ: Conservation of habitats, species and ecosystems where they naturally occur. This is in-situ conservation and the natural processes and interaction are conserved as well as the elements of biodiversity.

Ex-situ: The conservation of elements of biodiversity out of the context of their natural habitats is referred to as ex-situ conservation. Zoos, botanical gardens and seed banks are all example of ex-situ conservation.

In-situ conservation is not always possible as habitats may have been degraded and there may be competition for land which means species need to be removed from the area to save them.

Which areas to conserve?

Hotspots of biodiversity

A popular approach for selecting priority areas has been to select hotspots of diversity. Since it is not possible to conserve all biodiversity due to lack of resources and the need to use land for human activities, areas are prioritised to those which are most in need of conservation. 'Hotspot' a term used to define regions of high conservation priority combining high richness, high endemism and high threat.

Threatened Species

Over the last 200 years many species have become extinct and the extinction rate is on the increase due to the influence of human

activity. The status of species has been assessed on a global scale by the World Conservation Union. Taxa that are facing a high risk of global extinction are catalogued and highlighted in the IUCN Red List of Threatened Species.

Threatened Habitats

Habitat destruction comes in many forms from clear felling of forests to simple changes in farming practices that change the overall surrounding habitat. If a habitat is degraded or disappears a species may also become threatened. The UK is in danger of losing diverse habitats ranging from lowland calcareous grassland to mudflats and wet woodland. The **UK BAP** has specific Habitat Action Plans in place in order to try and mange and conserve these precious places. Many of these areas lie within SSSIs which are designated prioritised areas of conservation.

Flagship and keystone species

Conservation efforts are often focused on a single species. This is usually for two reasons.
1) Some species are key to the functioning of a habitat and their loss would lead to greater than average change in other species populations or ecosystem processes. These are known as keystone species.
2) Humans will find the idea of conserving one species more appealing than conserving others. For example it would be easier to persuade people that it is necessary to conserve tigers that it is to persuade people to conserve the Zayante band-winged grasshopper. Using a flagship species such as a tiger will attract more resources for conservation which can be used to conserve areas of habitat.

Complementarity

Complementarity is a method used to select areas for conservation. These methods are used to find areas that in sum total have the highest representation of diversity. For example using complementarity methods, areas could be selected that would contain the most species between them but not necessarily be the most species rich areas individually and take into account pressures of development.

Distinguishing higher from lower priority areas for urgent conservation is the purpose of such area-selection methods. However, an

acceptance of priorities must recognise that this idea also implies that some areas will be given lower priority. This is not to say that they have no conservation values rather that in relation to agreed goals the actions are not as urgent.

Where identities of species or other biodiversity indicators are known, complementarity methods can be applied