

國立嘉義大學九十四學年度

生物資源學系碩士班招生考試試題

科目：專業英文

英譯中(每題 25 分，不須逐句直譯)

1. The principle of limiting factors states that for every physical factor in the environment, there are both maximum and minimum tolerable limits beyond which a given species cannot survive. Often the factor in shortest supply or closest to the tolerance limit for a particular species at a particular time is the critical factor that will determine the abundance and distribution of that species in that ecosystem. Random genetic variations create diversity that gives some individuals advantages in a given set of circumstances. The best-suited organisms survive and reproduce more successfully than the ill-suited one. Eventually, the genes for these successful characteristics predominate in the population, and the species becomes adapted to its environment and to particular role. This process leads to evolution of a species either through gradual replacement of the original parental type or a splitting of a population into two species.
2. Strategy of regeneration of communities has been used to characterize the responses of plants to tramping(踐踏). Sun and Liddle (1991) suggest that they may in general be either resistant or resilient. Resistant species are relatively less damaged by impacts but tend to have slow recovery rates, resilient ones are easily damaged but recover quickly.

Strategy concepts have been applied to communities as well as individual species and this is probably the most useful application of the concept for management purposes.

Regeneration of communities is also an important management concern and it is clear that the time scales are very varied. In most cases the time for full recovery has been underestimated. In some cases, deserts and high alpine habitats for example, it is doubtful if complete recovery to original conditions will ever occur.
3. One method of limiting dispersal is self-planting. The morphology of the fruit lends itself to lodging near the parent and drilling into the ground. Many grasses have long, bent *awns* (slender bristles) that twist as air humidity fluctuates. The awns function as levers that drive the grain into the soil. Stiff hairs at the base of the grain prevent it from pulling backwards, out of the soil. A few nongrass herbs, such as cranesbill, employ a similar technique.

Sea rocket, a common annual beach plant of temperate-zone shores, has a bipartite fruit. The top half is easily dislodged when mature, and its corky(軟木) texture allows the enclosed seed to be carried to distant beaches via ocean currents. The bottom half is firmly attached to the parent, and its seed is buried with the dead parent by shifting sand at the end of the growing season. The following year, hundreds of seedlings mark the place where the parent plant grew the year before. This two-pronged dispersal strategy serves both to spread the species and to maintain it in safe sites year after year, even though it is an annual plant.
4. Methods for capturing wild mammals include a variety of trapping and netting techniques. Whether the animals are livetrapped or killed depends on the nature of the study and the reason for their capture. Although many mammals trapped today are captured alive, in some instances kill-trapping is necessary and justified. For instance, museum collections need reference specimens to permit identification of species, and the skeletal or tissue materials needed for analyses cannot be obtained from live animals. Trapping to remove animals from an area, particularly an abundant or pest species, can often best be accomplished by using kill traps, guns, or poison. If trapped specimens are to be used for a museum collection, it is necessary to ensure that the specimen is not damaged by the capture procedure.