

# Threatened Plants – How to Save Them

*Grenville Lucas*

In May 1974 IUCN set up the Threatened Plants Committee (TPC) of the Survival Service Commission, with Professor J. Heslop-Harrison, Director of the Royal Botanic Gardens at Kew, as Chairman, and Grenville Lucas, also of Kew, as Secretary. The need for a comprehensive survey had been highlighted by Dr Ronald Melville's pioneer work in compiling the Red Data Book for plants. The Committee's task is to prepare a world list of endangered and threatened (flowering) plant species so that action plans can be drawn up. The world's decision-makers must have the facts. The work is centred at Kew. Material is collected and action planned, either through regional groups (the European group has already produced a preliminary draft of rare, threatened and endangered plants), or through specialist groups (a world-wide palm group was the first to be appointed). A third approach is through institutions – most of the world's major botanic gardens sent representatives to a conference at Kew in September 1975. The following is a summary, with extracts, of Grenville Lucas's paper on the work of the TPC read at the IUCN meeting in Kinshasa.

There are some quarter of a million flowering plant species in the world. Those in temperate regions are well enough known to enable the rare, threatened and endangered species to be identified and action plans prepared; the core of the problem is the 170,000 species that occur in the tropics. And there is no time to lose, for whole plant communities are being rapidly lost, and with them species diversity. In Latin America ten million hectares of tropical rain forest are being removed annually – what does this mean in terms of species lost? Nobody knows. But it is the diversity of species and the diversity within species that has ensured the earth's life-giving and supporting plant cover. It is genetic diversity that gives plants the potential and capacity for self-renewal in a changing environment, and recent massive losses from disease in some pure crop cultures shows what happens if it is lost.

Professor Heslop-Harrison has summarised the main pressures on plants:

1. increasing the requirement for food production;
2. increasing the rate of exploitation of existing plant resources, e.g. of forests for constructional materials, newsprint, etc.;
3. decreasing the areas available for the growth of plants through urbanisation, industrialisation, roadbuilding, etc.;
4. increasing man's capacity for the rapid and often irrational destruction of natural plant communities by mechanical means;
5. impairing the conditions for plant growth by the chemical pollution of air, water and land;
6. promoting the conditions for the spread of pests and disease.

FAO statistics indicate that by 1985 at least 26 major tropical countries with a population of 365 million will be unable to supply on a *per capita* basis sufficient food to avoid gradual starvation. If remedial action is not taken this must lead to an impossible situation. On the one hand production of food

must reach a sufficient level to maintain the population and in doing so the very future of the majority of plant species diversity and all that this means is lost. While if we destroy the ecosystems and the reservoirs of plant species that they contain then we *all* gradually starve.

Moreover, species can be pushed out of their original habitat, to the point of extinction even, not only by man, but by aggressive alien plant species, as happens in the animal kingdom. The introduction of *Opuntias* from the Americas to Australia and the devastation they caused is a classic example. In East Africa black wattle from Australia can form dense stands excluding all native species. The odd horticultural collector through his very selectivity can remove from the wild a particular species to fulfil his own selfish ends, and there are now many species more common in cultivation than in the wild.

So what is the decision-maker to do? What are we all to do?

The Stockholm Conference laid down four clear tasks which are the best guidelines for action:

1. to conserve plant genetic resources in the field by the designation of reserves and the establishment of suitable management systems for them;
2. to survey the plant genetic resources of the world, with appropriate programmes for exploration, research and collecting;
3. to prepare inventories of resources in the wild and in existing collections, and a comprehensive documentation system to handle information about what exists;
4. to conserve plant genetic resources in living collections and seed banks.

The first heading has and is being fulfilled by the once random and now more selective acquisition of representative reserves. This has accidentally (but now deliberately) brought about in most countries some areas as plant reserves where most representatives of the world's vegetation types exist. The International Biological Programme (IBP) and the Man and the Biosphere (MAB) programme highlighted omissions, and a more representative series of reserves now exist. The proposed world list of endangered and threatened species will help to show aggregations of species (centres of endemism) which should support reserve acquisition and help future choices.

Item 2 is a world-wide responsibility and beyond the resources of any one agency, but through the TPC it is possible to tap what knowledge is available throughout the botanical world. The major effort of the TPC is at present concentrated on Item 3, while Item 4 provides the stimulus for various initiatives taken by IUCN and the TPC.

Plant conservation should first and foremost be concerned with the conservation of plant communities in their natural habitats. IUCN through its TPC should be able to maintain on a continuing basis a monitoring service for endangered and threatened plant species. Similarly, a companion list of what is held in gardens, seedbanks, etc., should be maintained so that, in the long term, plant material needed for commerce, horticulture, research and conservation itself can also come from well-documented, cultivated or stored material, so reducing pressure on the wild species in their natural habitat. Developing countries have a large potential industry in industrial and horticultural propagation for the production of drugs, spices, horticulture, etc., where at present the wild material is being rapidly depleted to be put into trade. The setting up of these enterprises should receive international backing. We all have a responsibility for the plant kingdom. It does support and sustain us after all.