5. MANAGEMENT ISSUES

Taken as a whole, the rainforests of Cape York Peninsula would certainly be in better condition than those of any other rainforest province in Australia. Except for small areas near Bamaga, and insignificant areas elsewhere, they have not been logged or cleared; there are, as yet, few exotic weed invasions; feral animal damage, whilst severe in places, has left the bulk of the forests unaffected; and cyclone damage has not been on the scale of severity or area affected as in the Wet Tropics bioregion. The management of these forests, from a broadscale viewpoint, will present few problems for the future. There will, however, be a need for intensive management of some relatively small areas of critical habitat if these are to have a long-term future.

Where rainforest habitat is being degraded to the point where its regenerative capacity is threatened, the causal factor is mostly from one or both of two sources - feral and domestic animals, and exotic weeds, with invasions of the latter often being facilitated by activities of the former. In the remainder of this section, these and other causes of habitat degradation will be described, and the management issues that arise from them will be examined. Some recommendations for immediate action to deal with the most urgent problems are made but only where there can be some realistic expectation that they will be successful.

5.1 Pigs and Cattle

These animals, singly and together, have placed localised habitats and probably individual species within those and other habitats, under threat, and may have inflicted some permanent damage to rainforests throughout the region. There are some areas where their activities have been repetitious and severe, and there can be no doubt that the forests' regenerative capacity has been severely disrupted or permanently deflected at the ground level.

Pigs concentrate on permanently moist areas during the dry season, often turning over the entire forest floor, and there are areas on hillslopes and crests that are regularly favoured during the wet season. From the situation and type of soils involved it would appear that the bulk of their diet in both such areas is earthworms. In a number of situations throughout the Peninsula pigs were observed to be feeding extensively on palm trees of at least three species, from a stage when a trunk was formed up to several metres in height. This activity, if permanent, could obviously annihilate palms from the community concerned thus destroying some very aesthetically pleasing elements of the vegetation. It would appear from the pattern and sporadic nature of this activity that it comes from individual animals that have developed a taste for palms to the exclusion of most other food sources. This, however, is a feeding pattern observed only within the last decade, and it appears to be becoming a more common trend which has disturbing implications for the future of communities in which palms are dominant or prominent.

Cattle mostly inhabit the margins of the rainforest or scattered patches that provide browsing and daytime camps. They are, however, commonly found deep in the forest throughout the McIlwraith Range, and in some of the seemingly most inaccessible forests among the boulder-strewn heights of the Melville Range. Their impact on favoured camping-sites and around springs can be severe, causing loss of groundcover, soil erosion, and facilitating weed invasion. Around isolated springs damage is usually magnified by the wallowing activities of pigs and the result can only be described as catastrophic. While the damage caused by cattle and pigs may be readily recognisable the possible solution is not so clearly definable and will probably have to be specific to the circumstances.

Until the control of pigs can be approached through biological agents or genetic manipulation there would seem to be little option but to accept them as part of the environment and to concentrate on controlling them in some limited high-priority conservation areas, where their permanent exclusion would be possible or worth the effort, or where a permanent severe reduction in their population would be worth the effort in terms of conservation benefits. In order to identify situations in the latter category, basic and long-term studies of the ecology of pigs in several environments should be funded. The question of the survival of some forests dominated by palms in the canopy, sub-canopy or understorey, in the face of pig activity, also suggests itself as a priority research direction.

While it may give much satisfaction to the participants, the *adhoc* shooting of pigs should not be condoned. It could quickly become a substitute for meaningful activity, not addressing the problem in any useful way, and could be a significant waste of resources. In addition, it could lead to careless and unsafe attitudes in the use of firearms, which could result in tragedy.

Unlike the situation with pigs, the control of feral cattle over large areas has been proven feasible, and should be the objective. Indeed, where rainforests are part of a range of habitats in a conservation area, the removal of domestic and feral cattle is mandatory to basic habitat management. It is not possible to practise proper fire management of grassy sclerophyll areas in their presence, and even small numbers will concentrate heavily on stream frontages, springs, rainforest margins, and isolated patches of rainforest.

The removal of cattle will require strategic fencing, and systematic shooting and trapping, with effort concentrating around watering points late in the dry season. There will remain, however, some populations, such as those in the McIlwraith and Melville Ranges, which may prove difficult or impossible to eradicate. In those areas many cattle appear to live entirely within the rainforest, and with a plentiful water supply available to them none of the techniques of control that can be used in more open areas can be used.

5.2 Exotic Weeds

Generally speaking, exotic weeds are not a problem in the rainforests of Cape York Peninsula. They are largely an artefact of disturbance and comprise groundcover species that could gradually disappear if the main agents of disturbance, cattle and pigs, could be removed. The most common groundcover weeds of rainforest areas are *Hyptis suaveolens, Urena lobata*, and *Bidens bipinnata*. The creeping grass *Axonopus compressus* is common in some parts of the foothills of the Melville Range.

The two significant exceptions are rubber vine (*Cryptostegia grandiflora*) and the introduced *Senna siamea*. The former has the capacity to completely destroy the community it invades whilst the latter has shown a capacity to become a significant part of the canopy of riverine communities. Both of these plants are as yet only a problem in the southern part of the Laura Basin and within Lakefield National Park.

Rubber vine is at an early invasive stage in Type 15 (Deciduous microphyll vine thicket on cracking clay soil) near the Olive Vale boundary with Lakefield. It has appeared as scattered clumps in open areas and along edges, and is showing signs of moving to the canopy, which it has the capacity to destroy by exclusion of light and competition for water and nutrients. It is also growing along the margins of riverine forests of the Normanby and Laura Rivers, which, although much more resistant to invasion by it are yet suffering, in some places, from gradual attrition of those margins.

Senna siamea is a tree gradually invading riverine forest along the Laura River, downstream from Old Laura Homestead. Its abundance along the Coen River at Coen is cause for

concern, as although it is not invading rainforest it is spreading down river and will eventually reach the important riverine forests of the Coen in the Mungkan-Kandju (formerly Rokeby and Archer Bend) National Park.

Apart from rubber vine, no weed currently invading any rainforest area on the Peninsula is considered to be more significant than two aggressive species already established there. These are Pond apple (*Annona glabra*) and Lantana (*Lantana camara*). Lantana is well established on the margins of some rainforests in the Cooktown-Hope Vale area, while Pond apple has established near Cooktown and in the Temple Bay-Iron Range area. There is an urgent need for survey to determine the full extent of the infestation in the latter area.

Pond apple is a small tree native to the southern part of the United States of America where it grows in swampy areas. It has become established in the wet tropics where it is now considered to be the worst weed of that region and one of the twenty Weeds of National Significance. It is versatile and aggressive, and while its main area of invasion is the *Melaleuca* forest, it is also occupying disturbed areas in rainforest at up to 400 metres altitude, and mangrove fringes. It achieves its great significance as a weed from its ability to prevent regeneration of native species, leading inevitably with time to the complete destruction of virgin habitat, or the prevention of normal succession in disturbed areas. The attractiveness of its fruit to animals such as pigs and cassowaries and its ability to disperse and survive in salt-water guarantee its northward spread along the coastline.

Lantana, a serious weed of sclerophyll forests and some rainforests, is well established in the Cooktown area with the most northerly extension observed there being on the headwaters of the Starcke River. The only infestation noted on the Peninsula, north of the Starcke River, were small areas near Bamaga and just south of the Nesbit River, although there were unconfirmed reports of its presence at Iron Range.

Lantana is not a problem within undisturbed rainforests of the high rainfall belt, but is a major invasive weed in low vine forests and thickets in areas of tropical Queensland of less than 1000 mms annual rainfall. It is, however, a problem where it infests sclerophyll forests adjoining rainforest because of its influence on fire behaviour. By suppressing cool fires yet burning fiercely under severe conditions, it promotes serious damage to rainforest margins, and by invading damaged areas leads to a permanent loss of habitat.

5.3 Other Exotics

The palm beetle (*Brontispa longissima*) has been recorded in the Torres Straits and around Cooktown. It has a proven ability to attack and destroy several common species of native palm, and there is an unconfirmed report of palms having died from the effects of beetle attack in the Mt. Cook National Park. This beetle has the potential to radically alter all types of palm-dominated habitat and must be considered a significant threat to northern rainforests.

The cane toad (*Bufo marinus*) has now occupied the entire Peninsula, having relatively recently arrived at Cape York. It was observed in all habitats but there was an impression that it was either absent or sparse in the larger rainforests in areas remote from their margins. Its effect on rainforest fauna is unknown.

The Peninsula would appear to be the last area in Queensland with intact frog populations. The pattern of frog disappearance elsewhere would suggest that some Peninsula species are in imminent danger. The study of their distribution and ecology is a high priority, and consideration needs to be given, as a matter of urgency, to the desirability and practicality of the captive breeding of species most likely to be at risk.

5.4 Illegal Activities

The illegal collection of the fruit of the palm *Wodyetia bifurcata* has received much publicity. There has been much rumour that other species of plant have also been the target of such activities. With one exception, no evidence to support this was uncovered during the study although it is likely that there has been much small-scale traffic in protected plants from some groups (particularly orchids), from some localities.

The exception is the Cooktown orchid (*Dendrobium bigibbum*), which appears to have been subjected to some heavy collecting activity. In the more inaccessible vine forests and thickets of the Princess Charlotte Bay area it is so abundant that masses of it in flower can be easily observed from the air. Similar habitats in the more accessible locations are devoid of the plant. Ron Teece, former Ranger-in-Charge at Lakefield National Park who has thirty years knowledge of the Princess Charlotte Bay area, when questioned about some 'scrubs' now devoid of the epiphyte, confirmed that they were once known for their abundance.