Oceanic Islands - Differences in values and management when compared to continental islands

Mike Hinchey

Australian National Parks and Wildlife Service, GPO Box 636, Canberra ACT, 2601.

Oceanic Islands were considered to:

- be isolated from large land mass;
- usually possess plants and animals descended from forms capable of surviving the long distance from continental land masses. It can be presumed they started off with no species;
- possess a relatively small number of plants and animals when compared with continental islands of equivalent size. In the case of oceanic islands that lie on important migratory routes, this difference may not be quite so apparent for birds;
- evidence a high degree of speciation and sub-speciation. This one-off nature of oceanic island ecosystems can generally result in their being individually more biologically valuable than their continental counterparts;
- often support populations of animals extremely tolerant of humans in the first instance. As a result of this tolerance such species are highly vulnerable to disturbance and predation by man and domesticated animals. This vulnerability may be exacerbated by the absence of previous exposure to predators and competition;
- usually receive a low number of vagrants few of which successfully colonise. This is also a factor in the development of species and sub-species. The example of Christmas Island was cited where endemism among plants and land crabs is low at 10% and 8% respectively, whereas for vertebrates it is high - reptiles 68% and birds 50%;
- sometimes result in certain species evolving to fulfil different roles to their continental counterparts. Using Christmas Island again as an example, *Macaranga* there is a tall rainforest tree whereas elsewhere it is a successional or low shoreline species. Within that island's rainforest land crabs undertake the role of primary digester of forest floor litter, a role elsewhere undertaken by earthworms or leaf-eating insects;
- have generally been free of humans until late in the development of their faunas and floras. In the case of areas like Polynesia it is apparent that humans reached oceanic islands over a wide period of time.

Continental Islands on the other hand were considered to:

- support populations of species common to the adjacent mainland, the number depending on the size of the island;
- only support a degree of endemism or sub-speciation depending on the mobility of the species. Such development is more likely in the case of wingless animals and plants with small non-floating seeds or seed cases;
- be more likely to have had human pressure or visitation but not necessarily all types of such pressures. For example, native peoples may have visited continental islands but not been resident on them for significant periods.
- not be less or more prone to colonisation by species due to prevailing winds or ocean currents. This was asserted in view of experience at Macquarie Island and an artificial "island" created 180 km off the Western Australian coast where no pattern has emerged in over two years;
- be more likely to have replicates which to some extent may reduce their separate biological value;
- are more vulnerable to the introduction of feral animals and exotic plants indirectly through the auspices of man. For example, animals and plants may swim or float to continental islands or be carried there inadvertently by man.

It can be generally be concluded that the above differences are a combination of distance, replication, size and interference factors.

When considering **management** of both broad types of islands it is apparent that different parameters apply to both depending on whether they are developed/occupied by man or not.

When considering unoccupied islands management difficulties and expenses are generally higher for oceanic islands than continental islands. Western Australia's vast estate of continental islands however poses logistical problems in some cases just as significant as oceanic islands in view of that State's vast coastline.

Though uninhabited, continental islands, because of their proximity to continental land masses and populations, are more vulnerable to change by humans or domesticated organisms because of ease of access in a distance sense. In general, oceanic islands require larger and more expensive ships to successfully negotiate oceanic waters.

The unique nature of many oceanic islands may demand more enlightened management because the resources to be conserved may respond differently to their continental equivalents.

In Australia it is notable that some nature conservation reserves have been established over continental islands by States for many years whereas the Commonwealth has only recently moved to establish nature conservation reserves on Australia's oceanic islands.

Both Australian and New Zealand delegates recognised the immensely valuable logistical support provided in the past by the navies of both countries and by Government vessels of non nature conservation authorities ranging from fisheries to lighthouse supply vessels. Without such support the effectiveness of Australasian nature conservation authorities in administering the important values of oceanic and continental islands would have been much less.

This Workshop **recommends** to CONCOM Standing Committee that defence force and other Government vessels continue to be made available to support nature conservation authorities for island management as an integral part of their sovereign duties in the overseeing of Australian and New Zealand resources. This Workshop also **recommends** active liaison with defence forces to facilitate island management and notes that defence support has not and should not necessarily be confined to supporting such activities in its own country, as a gesture of goodwill and in recognition of the internationality of nature as set out in the World Conservation Strategy.